VOLUME II

Technical Memorandums #1 - #6

MEMORANDUM

Technical Memorandum #1: Plans and Policy Review

Woodburn TSP

DATE	February 5, 2018
TO	Project Management Team
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OVERVIEW

This memorandum presents a review of existing plans, regulations, and policies that affect transportation planning in the City of Woodburn. The review explains the relationship between the documents and planning within the City's Urban Growth Boundary (UGB), identifying key issues that will guide the Transportation System Plan (TSP) update process. This memorandum is intended to guide later decisions regarding selection of preferred transportation solutions and necessary amendments to related plan documents and regulations.

Some documents included in this review establish transportation-related standards, targets, and guidelines with which the TSP update must be coordinate and consistent with; others contain transportation improvements that will need to be factored into the future demand modeling and otherwise reflected in the draft TSP update. Local policy and regulatory requirements described in this review – such as the Woodburn Development Ordinance (WDO) – may be subject to recommended amendments in order to implement the recommendations of the updated TSP. This memorandum helps set the state for those potential amendments, which will be prepared as part of project implementation (Tasks 6 and 7).

The following plans were reviewed.

Key Findings

- The updated Oregon Highway Plan mobility policy (Policy 1F) embodies more flexibility for meeting “targets” for state highways.
- Significant updates to the Oregon Bicycle and Pedestrian Plan were adopted in 2016 and the Woodburn TSP update can benefit from new state policy.
- The Transportation Planning Rule has been updated since the last Woodburn TSP update.
- The TSP update’s regulatory review assesses Woodburn’s consistency with the Transportation Planning Rule (TPR) and makes recommendations for policy and code amendments to ensure compliance.
- There are a number of local plans that have been adopted subsequent to the 2005 TSP. For adopted plans that are not currently reflected in the TSP, policies, standards, and recommendations that have an impact on the transportation system will be considered for consistency as part of this TSP update.

STATEWIDE PLANS

Statewide Planning Goals

The foundation of Oregon’s statewide land use planning program is a set of 19 Statewide Planning Goals. The goals express the state’s policies on land use and on related topics, such as citizen involvement, housing, and natural resources. Oregon’s statewide goals are achieved through local comprehensive planning, including the development and implementation of TSPs.

All of Oregon’s Statewide Goals have an influence on transportation planning, either directly or indirectly. However only certain Goals directly apply to transportation planning at a local level; the Goals listed in Table 1 are most relevant to Woodburn’s TSP update.

Table 1: Statewide Planning Goals

Statewide Planning Goal	Relevancy to the Woodburn TSP Update
Goal 1: Citizen Involvement	Establishes citizen involvement as the primary goal of the land use planning process in Oregon. The Woodburn TSP Update process is guided by a robust public involvement plan that includes public involvement goals, identified affected and interested stakeholder and target audiences, and critical factors that will gage success. In addition, this project will be guided by citizen and technical advisory committees that will inform the TSP update throughout the course of the project.
Goal 2: Land Use Planning	Establishes a process and policy framework for all decisions and actions related to uses of land; ensures that such decisions and actions are premised on an adequate factual base. Existing and future transportation needs will be based on inventories of existing conditions, including existing and planned land uses, as well as improving efficient multi-modal connections to housing, public services, employment areas, and recreational opportunities (see Tech Memo #3).
Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces	Existing natural resources and environmental features influence the siting, construction, and cost of transportation improvements. Inventories of these resources illustrate and describe areas within Woodburn that may pose barriers to providing transportation access or improvements (see Tech Memo #3).
Goal 7: Natural Hazards	The risk of natural hazards affects site selection and alignment decisions and design standards. Transportation improvement projects in Woodburn should avoid natural hazard areas, such as floodplains, to the extent feasible.
Goal 9: Economic Development	Addresses the need for a variety of economic opportunities in support of the health, welfare, and prosperity of Oregon's citizens. The TSP Update process should be coordinated with current and planned economic development activities, such as the recent UGB expansion for the industrial reserve area.
Goal 10: Housing	Cities are required to anticipate ongoing needs for housing, and to provide adequate infrastructure to serve residential uses. Transportation facilities and project prioritization will be based, in part, on the demands generated by current and projected housing needs.
Goal 11: Public Facilities and Services	Local governments are required to provide adequate public facilities, including transportation facilities, in a timely and efficient manner. The TSP update will coordinate with or consider the provision of other public facilities consistent with adopted plans.
Goal 12: Transportation	Requires multi-modal transportation plans for transportation service providers that need to:

Statewide Planning Goal	Relevancy to the Woodburn TSP Update
	• Be based upon factual inventories, • Minimize adverse social, environmental, economic, and energy impacts, • Meet the needs of the transportation disadvantaged, • Facilitate the flow of goods and services, and • Be consistent with related local and regional plans. As described in more detail below, Goal 12 is implemented through the Transportation Planning Rule (OAR 660, Division 12).
Goal 13: Energy Conservation	Land uses shall be managed and controlled to maximize the conservation of all forms of energy based upon sound economic principles. In transportation planning, this includes consideration of travel distances and mode share.
Goal 14: Urbanization	Requires UGBs to “provide an orderly and efficient transition from rural to urban land use.” Findings of feasibility of providing adequate transportation and other public facilities is required for expansion of UGB’s. Woodburn’s adoption of the UGB expansion was recently acknowledged, adding new urbanizing areas to the city. These areas are expected to be developed within the planning horizon and will require improved transportation facilities to accommodate expected planned growth.

Project Relevance: The TSP update will be consistent with the Statewide Planning Goals

Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state’s long-range multi-modal transportation plan that addresses the future transportation needs of the State of Oregon through the year 2030. The primary function of the OTP is to establish goals, policies, strategies, and initiatives that are translated into a series of modal plans, such as the Oregon Highway Plan and Oregon Bike and Pedestrian Plan. The OTP considers all modes of Oregon’s transportation system, including Oregon’s airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation, and railroads. It assesses state, regional, and local public and private transportation facilities. In addition, the OTP provides the framework for prioritizing transportation improvements based on varied future revenue conditions, but it does not identify specific projects for development.

The OTP provides broad policy guidance and sets seven overarching goals for the state.[1] Through these goals and associated policies and strategies, 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.

The Implementation Framework section of the OTP describes the implementation process and how state multimodal, modal/topic plans, regional and local TSPs and master plans will further refine the OTP's broad policies and investment levels. Local TSPs can further OTP implementation by defining standards, instituting performance measures, and requiring that operational strategies be developed.

The last chapter of the OTP provides implementation and investment frameworks and key initiatives to be consulted in developing TSP projects and implementation measures.

> **Project Relevance:** The OTP's Key Initiatives will guide the TSP update, specifically in the areas of system management, maximizing performance of the existing transportation system using technology and creative design solutions, pursuing sustainable funding sources, and investing strategically in capacity projects. Consistent with a central OTP policy, the TSP update will seek to maximize the performance of the existing local transportation system by the use of technology and system management before considering larger and costlier additions to the system.

Oregon Highway Plan (1999, last amended 2015)

The Oregon Highway Plan (OHP) is a modal plan of the OTP that guides Oregon Department of Transportation's (ODOT's) Highway Division in planning, operations, and financing. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems.

The following policies are relevant to the TSP update process.

[1] The seven goals are Goal 1 – Mobility and Accessibility; Goal 2 – Management of the System; Goal 3 – Economic Vitality; Goal 4 – Sustainability; Goal 5 – Safety and Security; Goal 6 – Funding the Transportation System; and Goal 7 – Coordination, Communication, and Cooperation.

Policy 1A: State Highway Classification System

The OHP classifies the state highway system into four levels of importance: Interstate, Statewide, Regional, and District. ODOT uses this classification system to guide management and investment decisions regarding state highway facilities. The system guides the development of the facility plans, as well as ODOT's review of local plan and zoning amendments, highway project selection, design and development, and facility management decisions including road approach permits.

Interstate 5 (I-5), Pacific Highway (OR-99E), Hillsboro-Silverton Highway (OR-214 and OR-219), and Woodburn-Estacada Highway (OR-211) are classified highways in the state classification system. The purpose and management objectives of these highways are provided in Policy 1A, as summarized below.

- **Interstate highways** (I-5) provide connections between major cities in a state, regions of the state, and other states. A secondary function in urban areas is to serve regional trips within the urban area. Their primary objective is to provide mobility and, therefore, the management objective is to provide for safe and efficient high-speed continuous-flow operation in urban and rural areas.
- **Regional highways** (OR-99E) typically provide connections and links to regional centers, Statewide or Interstate highways, or economic or activity centers of regional significance. The management objective for these facilities is to provide safe and efficient, high-speed, continuous-flow operation in rural areas and moderate to high-speed operations in urban and urbanizing areas. A secondary function is to serve land uses in the vicinity of these highways.
- **District highways** (OR-211, OR-214, and OR-219) are facilities of county-wide significance and function largely as county and city arterials or collectors. They provide connections and links between small urbanized areas, rural centers, and urban hubs, and also serve local access and traffic. The management objective is to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movements.

The following classifications also apply in addition to the OHP Highway Classifications

- I-5, OR-214 (between Woodland Avenue and Young St/Silverton Ave), and OR-99E (between Molalla Rd and Young St/Silverton Ave) are classified as part of the National Highway System (NHS)
- OR-214 is also classified as an Oregon Scenic Byway.

Policy 1C: State Highway Freight System

The primary purpose of the State Highway Freight System is to facilitate efficient and reliable interstate, intrastate, and regional truck movement through a designated freight system. This freight system, made up of the Interstate Highways and select Statewide, Regional, and District Highways, includes routes that carry significant tonnage of freight by truck and serve as the primary interstate and intrastate highway freight connection to ports, intermodal terminals, and urban areas. Highways included in this designation have higher highway mobility standards than other statewide highways. I-5 is a designated freight route.

Policy 1D: Scenic Byways

Several highways throughout the state have been designated Scenic Byways which have exceptional scenic value. To protect the scenic assets of its Scenic Byways, ODOT has developed guidelines for aesthetic and design elements within the public right-of-way that are appropriate for Scenic Byways. Highway 214, east of I-5 is designated as a State Scenic Byway.

Policy 1F: Highway Mobility Standards Access Management Policy

Policy 1F sets mobility standards for ensuring a reliable and acceptable level of mobility on the state highway system. The standards are used to assess system needs as part of long range, comprehensive planning transportation planning projects (such as an IAMP), during development review, and to demonstrate compliance with the TPR.

Significant amendments to Policy 1F were adopted at the end of 2011. The 2011 revisions were made to address concerns that state transportation policy and requirements have led to unintended consequences and inhibited economic development. Policy 1F now provides a clearer policy framework for considering measures other than volume-to-capacity (v/c) ratios for evaluating mobility performance. Also as part of these amendments, v/c ratios established in Policy 1F were changed from being standards to “targets.” These targets are to be used to determine significant effect pursuant to TPR Section -0060. The I-5 (Pacific Highway) IAMP, adopted before the revisions to Policy 1F, may benefit from being revisited to evaluate how changes to Policy 1F affect the area.

Table 1 includes the mobility targets for the state facilities in the TSP study area.

Table 2: Volume to Capacity Ratio Targets Outside Metro

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO[17A, B, C, D]							
Highway Category	**Inside Urban Growth Boundary**					**Outside Urban Growth Boundary**	
	STA[E]	**MPO**	**Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA**	**Non-MPO outside of STAs where non-freeway speed > 35 mph but < 45 mph**	**Non-MPO where non-freeway speed limit >= 45 mph**	**Unincorporated Communities[F]**	**Rural Lands**
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

[A] Unless the Oregon Transportation Commission has adopted an alternative mobility target for the impacted facility, the mobility targets in Tables 6 are considered standards for purposes of determining compliance with OAR 660-012, the Transportation Planning Rule.

[B] For the purposes of this policy, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas. Alternatives to the 30th highest annual hour may be considered and established through alternative mobility target processes.

[C] Highway design requirements are addressed in the Highway Design Manual (HDM).

[D] See Action 1F.1 for additional technical details.

[E] Interstates and Expressways shall not be identified as Special Transportation Areas.

[F] For unincorporated communities inside MPO boundaries, MPO mobility targets shall apply.

Policy 1G: Major Improvements

This policy requires maintaining performance and improving safety on the highway system by improving efficiency and management on the existing roadway network before adding capacity. The state's highest priority is to preserve the functionality of the existing highway system. Tools that could be employed to improve the function of the existing interchanges include access management, transportation demand management, traffic operations modifications, and changes to local land use designations or development regulations.

After existing system preservation, the second priority is to make minor improvements to existing highway facilities, such as adding ramp signals, or making improvements to the local street network to minimize local trips on the state facility.

The third priority is to make major roadway improvements such as adding lanes to increase capacity on existing roadways. As part of this TSP process, ODOT will work with Woodburn and other stakeholders to determine appropriate strategies and tools that can be implemented at the local level that are consistent with this policy.

Policy 2B: Off-System Improvements

This policy recognizes that the state may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the state highway system. As part of this TSP update process, ODOT will work with the City and project stakeholders to identify improvements to the local road system that support the planned land use designations in the study area and that will help preserve capacity and ensure the long-term efficient and effective operation of high functional class facilities.

Policy 2F: Traffic Safety

This policy emphasizes the state's efforts to improve safety of all users of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues. The TSP update process will include citywide crash analysis to identify sites with a history of fatal and serious injury crashes and identify potential countermeasures to reduce crashes.

Policy 2G: Rail and Highway Compatibility

This policy recognizes the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroads and highway users. Woodburn currently has three primary rail providers. Union Pacific and Portland & Western (PNWR) provide rail service through the City, with connections between Portland and Salem. Willamette Valley Railroad (WVR) provides a connection between Woodburn and Silverton. The Union Pacific railroad is classified as a Type I freight facility and handles the vast majority of freight rail traffic. In addition, Amtrak uses Union Pacific railroad facilities for two intercity routes – the Coast Starlight and Amtrak Cascade – however, neither service stops in Woodburn.

Policy 3A: Classification and Spacing Standards

State policy seeks to manage the location, spacing, and type of road intersections on state highways in a manner that ensures the safe and efficient operation of state highways consistent with their highway classification.

Action 3A.2 calls for spacing standards to be established for state highways based on highway classification, type of area, and posted speed. Tables in OHP Appendix C present access spacing standards which consider urban and rural highway classification, traffic volumes, speed, safety, and operational needs. The access management spacing standards established in the OHP are implemented by access management rules in OAR 734, Division 51, addressed later in this report. The TSP update process will include an analysis of how existing ODOT arterials and collectors compare to these standards.

Policy 4A: Efficiency of Freight Movement

Policy 4A emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system. It seeks to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban and rural areas. I-5 is an OHP designated Freight Route.

Policy 4B: Alternative Passenger Modes

Policy 4B encourages the development of alternative passenger services and systems as part of broader corridor strategies. The policy promotes the development of alternative passenger transportation services located off the highway system to help preserve the performance and function of the state highway system. Mid-Columbia Council of Government's Transportation Network (The Link), Columbia Area Transit, and Greyhound provide public transportation service in the study area. Improving safety, access, and mobility for pedestrians and bicyclists is an objective of this update process.

Policy 4D: Transportation Demand Management

This policy supports the efficient use of the state transportation system through investment in transportation demand management (TDM) strategies. Action 4D.1 calls for reducing peak period sing-occupancy vehicle travel and to move traffic demand out of the peak period so as to improve the flow of traffic on state highways. The TSP update process will review TDM strategies that can be adopted into the Woodburn Development Ordinance in the form of requirement for new developments and incentives for employers.

> **Project Relevance:** The TSP planning process will consider policies in the OHP for any improvements, modifications, or policies that would affect I-5, OR-99E, OR-211, OR-214, or OR-219. OHP policies provide guidance in developing recommended improvements that would impact the accessibility, mobility, or function of each highway. The TSP is being developed in coordination with ODOT so that projects, policies, and regulations proposed as part of the TSP will comply with or move in the direction of meeting the standards and targets established in the OHP related to safety, access, and mobility.

Oregon Freight Plan (2011)

The Oregon Freight Plan (OFP) is a modal plan of the OTP that implements the State's goals and policies related to the movement of goods and commodities. Its purpose statement identifies that State's intent to "improve freight connections to local, Native America, state, regional, national and global markets in order to increase trade-related jobs and income for workers and businesses." The objectives of the plan include prioritizing and facilitating investments in freight facilities (including rail, marine, air, and pipeline infrastructure) and adopting strategies to maintain and improve the freight transportation system.

The plan defines a statewide strategic freight network. I-5 and parallel railroads are designated as a strategic corridor in the OFP.

The following policy and strategic direction provided in the OFP prioritizes preservation of strategic corridors as well as improvements to the supply chain achieved through coordination of freight and system management planning.

- Strategy 1.2: Support freight access to the Strategic Freight System. This includes proactively protecting and preserving corridors designated as strategic.
- Action 1.2.1. Preserve freight facilities included as part of the Strategic Freight System from changes that would significantly reduce the ability of these facilities to operate as efficient components of the freight system unless alternate facilities are identified or a safety-related need arises.
- Strategy 2.4: Coordinate freight improvements and system management plans on corridors comprising the Strategic Freight System with the intent to improve supply chain performance.

  Project Relevance: Maintaining and enhancing efficiency of the truck and rail freight system in the study area will be an objective of the updated TSP. The project advisory committee include representatives from ODOT.

Oregon Public Transportation Plan (1997)

The Oregon Public Transportation Plan (OPTP) is the modal plan of the OTP that provides guidance for ODOT and public transportation agencies regarding the development of public transportation systems. The current guiding vision for the State is to create a:

- A comprehensive, interconnected, and dependable public transportation system, with stable funding, that provides access and mobility in and between communities of Oregon in a convenient, reliable, and safe manner that encourages people to ride.
- A public transportation system that provides appropriate service in each area of the state, including service in urban areas that is an attractive alternative to the single-occupant vehicle, and high-quality, dependable service in suburban, rural, and frontier (remote) areas.
- A system that enables those who do not drive to meet their daily needs.
- A public transportation system that plays a critical role in improving the livability and economic prosperity for Oregonians.

The OPTP is currently being updated; a new plan is scheduled to be adopted by the Oregon Transportation Commission in Spring 2018.

> **Project Relevance:** The TSP will consider the needs of the transit system within City limits while developing recommended policies and projects related to improving transit service. In addition, the project technical advisory committee includes a representative of Woodburn Transit System service provider that will advise on transit improvements.

Oregon Rail Plan (2014)

The Oregon State Rail Plan is a state modal plan under the OTP that addresses long-term freight and passenger rail planning in Oregon. The Plan provides a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. It identifies specific policies concerning rail in the state, establishes a system of integration between freight and passenger elements into the land use and transportation planning process, and calls for cooperation between state, regional, and local jurisdictions in planning for rail.

Woodburn currently has three primary rail providers. Union Pacific and Portland & Western (PNWR) provide rail service through the City, with connections between Portland and Salem. Willamette Valley Railroad (WVR) provides a connection between Woodburn and Silverton. The Union Pacific railroad is classified as a Type I freight facility and handles the vast majority of freight rail traffic. In addition, Amtrak uses Union Pacific railroad facilities for the Coast Starlight and Amtrak Cascade passenger trains. There is no passenger service stop in Woodburn.

> **Project Relevance:** The TSP will consider the needs of the freight and passenger rail system within City limits while developing recommended policies and projects related to improving safety and mobility in the City. In addition, the project technical advisory committee includes ODOT representative that will advise on rail and freight interests.

Oregon Bicycle and Pedestrian Plan (2016)

The intent of the Oregon Bicycle and Pedestrian Plan (OBPP) is to create a policy foundation that supports decision-making for walking and biking investments, strategies and programs that help to develop an interconnected, robust, efficient, and safe transportation system. The OBPP established the role of walking and biking as essential modes of travel within the context of the entire transportation system, and recognizes the benefit to the people and places in Oregon.

The OBPP provides direction for what needs to be achieved, including 20 policies and associated strategies design to help develop, sustain, and improve walking and biking networks. It identifies nine goals based upon the broader goals of the OTP that reflect statewide values and desired accomplishments relating to walking and biking:

- Goal 1: Safety
- Goal 2: Accessibility and Connectivity
- Goal 3: Mobility and Efficiency
- Goal 4: Community and Economic Vitality
- Goal 5: Equity
- Goal 6: Health
- Goal 7: Sustainability
- Goal 8: Strategic Investment
- Goal 9: Coordination, Cooperation, and Collaboration

The OBPP also provides background information related to state and federal law, funding opportunities, and implementation strategies proposed by ODOT to improve bicycle and pedestrian transportation. It outlines the role that local jurisdictions play in the implementation of the Plan, including the development of local pedestrian and bicycle plans as stand-along documents within TSPs.

> **Project Relevance:** The policies and design guidance in the OBPP apply to state highway facilities in Woodburn, which include: I-5, OR-99E, OR-211, OR-214, and OR-219
>
> Policy and design guidance should also be considered in the TSP's local street standards and the bicycle and pedestrian system components. In addition, the bicycle and pedestrian system components of the local TSP should reflect the goals, policies, and strategies for implementation identified in the OBPP. Woodburn should work with regional and state agencies to help identify gaps in the regional walking and biking network and prioritize projects accordingly.

Oregon Transportation Safety Action Plan (2016)

An element of the OTP, the Oregon Transportation Safety Action Plan (TSAP) provides long-term goals, policies and strategies and near-term actions to eliminate deaths and life-changing injuries. The TSAP addresses all modes on all public roads in Oregon. Over the long term, the goals of the TSAP are:

- Infrastructure – Develop and improve infrastructure to eliminate fatalities and serious injuries for users of all modes.
- Healthy, Livable Communities – Plan, design, and implement safe systems. Support enforcement and emergency medical services to improve the safety and livability of communities, including improved health outcomes.
- Technology – Plan, prepare for, and implement technologies (existing and new) that can affect transportation safety for all users.

The Plan identifies actions that cities, including Woodburn, can take to increase transportation safety. They include adopting a Safe Communities Program and Safe Routes to School. The Safe Communities Program are collaborative partnership with the National Highway Traffic Safety Administration and the ODOT to promote safety. The Safe Routes to School program is a local initiative supported by grant funding that targets safety improvements to encourage walking and biking to schools.

In addition, the TSAP also identifies activities and roles for cities that can do to improve safety. They include:

- Evaluate local spot-specific systemic safety needs; develop plans and programs to address needs.
- Collaborate with the state and stakeholder partners to educate the public about transportation safety-related behavioral issues.
- Integrate safety programming, planning, and policy into local planning.

> **Project Relevance:** The TSAP will be used as a resource to develop local goals, policies, and strategies while updating the TSP to increase safety in the City.

Reduction Review Routes (ORS 366.215 & OAR 731-017)

ORS 366.215 states the Oregon Transportation Commission may not permanently reduce the vehicle-carrying capacity of specific state routes when improvement projects alter, relocate, change, or realign the facility. Exceptions are allowed if safety or access considerations require a reduction.

Transportation improvements that are identified by ODOT as having the potential for a Reduction of Vehicle-Carrying Capacity are required to conduct a stakeholder forum. The stakeholder forum is intended to include representatives from a range of affected groups to discuss design issues with the planned improvements.

> **Project Relevance:** Analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities; the updated TSP will comply with Reduction Review Route standards for state facilities.

Transportation Planning Rule (OAR 660-012) (2011)

The Transportation Planning Rule (TPR), OAR 660-012, implements Goal 12 (Transportation) of the statewide planning goals. The TPR contains numerous requirements governing transportation planning and project development, including the required elements of a TSP. In addition to plan development, the TPR requires each local government to amend its land use regulations to implement its TSP (-0045). 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."

Local compliance with -0045 provisions is achieved through a variety of measures, including access control requirements, standards to protect future operations of roads, and notice and coordinated review procedures for land use applications. Local development codes should also include a process to apply conditions of approval to development proposals, and regulations ensuring 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.

The TPR does not regulate access management. ODOT adopted OAR 734-051 to address access management and it is expected that ODOT, as part of this project, will coordinate with the City in planning for access management on state roadways consistent with its Access Management Rule. See the review of OAR 734-051 in the next section for a review of these access management rules.

Amendments to the TPR adopted in 2012 include new language in Section -0060 that allows a local government to exempt a zone change from the "significant effect" determination if the proposed zoning is consistent with the comprehensive plan map designation and the TSP. The amendments also allow a local government to amend a functional plan, comprehensive plan, or land use regulation without applying mobility standards (V/C, for example) if the subject area is within a designated multi-modal mixed-use area (MMA).

> **Project Relevance:** The TPR directs local TSP development and requires specific transportation elements be implemented in the local development ordinance. Local requirements such as access management, coordinated land use review procedures, and transportation facility standards and requirements are meant to protect road

operations and safety and provide for multi-modal access and mobility. Implementation measures that will be developed with the TSP update may entail proposed amendments to the Woodburn Development Ordinance to ensure consistency with TPR requirements as well as to reflect TSP recommendations.

Access Management Rule (OAR 734-051) (2014)[2]

Oregon Administrative Rule (OAR) 734-051 defines the State's role in managing access to highway facilities in order to maintain functional use and safety and to preserve public investment. OHP Policy 3A and OAR 734-051 set access spacing standards for driveways and approaches to the state highway system[3]. The most recent amendments presume that existing driveways with access to state highways have written permission from ODOT as required by ORS 734. The standards are based on state highway classification and differ depending on posted speed and average daily traffic volume.

Project Relevance: Analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities; the updated TSP will comply or move in the direction of meeting access management standards for state facilities. Implementation measures that will be developed for the TSP update may entail amendments to the Land Use Development Ordinance to ensure that it is consistent with these access management requirements as well as TSP recommendations related to access management.

Statewide Transportation Improvement Program

The State Transportation Improvement Program (STIP) is the four-year programming and funding document for transportation projects and programs for state and regional transportation systems, including federal land and Indian reservation road systems, interstate, state, and regional highways, bridges, and public transit. It includes state- and federally-funded system improvements that have approved funding and are expected to be undertaken during the upcoming four-year period. The projects and programs undergo a selection process managed by ODOT Regions or ODOT central offices, a process that is held every two years in order to update the STIP.

Project Relevance: The TSP update analysis will take into account projects that are programmed in the STIP. An expected outcome of this planning process is proposed recommendations to eventually amend the STIP to include projects from the updated TSP. The STIP projects will most likely involve improvements that are eligible for funding through the ODOT Enhance program, which awards funding through a competitive application process.

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[2] Amendments to OAR 734-051 were adopted in early 2014 based on passage of Senate Bill 1024 (2010, Senate Bill 264 (2011, and Senate Bill 408 (2014). The amendments were intended to allow more consideration for economic development when developing and implementing access management rules, and involved changes to how ODOT deals with approach road spacing, highway improvement requirements with development, and traffic impact analyses requirements for approach road permits.

[3] ODOT Access Management Standards – OHP Appendix C Revisions to Address Senate Bill 264 (2011): http://www.oregon.gov/ODOT/TD/TP/docs/ohp_am/apdxc.pdf

ODOT Highway Design Manual (2012)

The 2012 Highway Design Manual provides ODOT with uniform standards and procedures for planning studies and project development for the state's roadways. It is intended to provide guidance for the design of new construction; major reconstruction (4R); resurfacing, restoration, and rehabilitation (3R); or resurfacing (1R) projects. It is generally in agreement with the American Association of State Highway and Transportation Officials (AASHTO) document *A Policy on Geometric Design of Highways and Streets - 2011*. However, sound engineering judgment must continue to be a vital part in the process of applying the design criteria to individual projects. The flexibility contained in the 2012 Highway Design Manual supports the use of Practical Design concepts and Context Sensitive Design practices.

The Highway Design Manual is to be used for all projects that are located on state highways. National Highway System or Federal-aid projects on roadways that are under local jurisdiction will typically use the 2011 AASHTO design standards or ODOT 3R design standards. Table 3 shows which design standards are applicable for certain projects based on project type, and whether or not the project involves a state route. State and local planners will also use the manual in determining design requirements as they relate to the state highways in TSPs, Corridor Plans, and Refinement Plans. Some projects under ODOT roadway jurisdiction traverse across local agency boundaries. Some local agencies have adopted design standards and guidelines that may differ from the various ODOT design standards. Although the appropriate ODOT design standards are to be applied on ODOT roadway jurisdiction facilities, local agency publications and design practices can also provide additional guidance, concepts, and strategies related to roadway design.

Table 3: Design Standards Selections Matrix, ODOT Highway Design Manual

Project Type	**Roadway Jurisdiction**				
	State Highways			Local Agency Roads	
	Interstate (I-5)	Urban State Highways (OR-99E, OR-211, OR-214, OR-219)	Rural State Highways	Urban	Rural
Modernization/ Bridge New/Replacement	ODOT 4R/New Freeway	ODOT 4R/New Urban	ODOT 4R/New Rural	AASHTO	
Preservation/ Bridge Rehabilitation	ODOT 3R Freeway	ODOT 3R Urban	ODOT 3R Rural	AASHTO	ODOT 3R Rural
Preventive Maintenance	1R	1R	1R	NA	NA
Safety- Operations-Miscellaneous/ Special Programs	ODOT Freeway	ODOT Urban	ODOT Rural	AASHTO	ODOT 3R Rural

The Highway Design Manual includes mobility standards related to project development and design that are applicable to all modernization projects, except for development review projects (see Table 4). The v/c ratios in the Highway Design Manual are different than those shown in the Oregon

Highway Plan (OHP). The v/c ratio values in the OHP are used to assist in the planning phase to identify future system deficiencies; the Highway Design Manual v/c ratio values provide a mobility solution that corrects those previously identified deficiencies and provides the best investment for the State over a 20-year design life.

Table 4: 20-Year Design Mobility Standards (Volume/Capacity [V/C]) Ration

20 Year Design-Mobility Standards		
Highway Category	Inside Urban Growth Boundary	
	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >=45
Interstate Highways and Statewide (NHS) Expressways	0.70	0.65
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.75	0.70
Regional Highways	0.75	0.75
District/Local Interest Roads	0.80	0.75

Project Relevance: The ODOT Highway Design Manual provides design standards on state roadways; analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities. Standards and guidelines adopted by Woodburn should be considered for additional guidance, concepts, and strategies for design.

Oregon Roadway Departure Implementation Plan (2017)

The Roadway Departure Implementation Plan provides specific information regarding roadway departure safety improvements to implement the current TSAP. It identifies the most cost-effective types of transportation improvements for reducing roadway departure crashes. The countermeasures that are generally considered to be the most effective are listed below. Each method is intended to address specific safety concerns and is considered a low-cost way to systematically reduce fatal and serious injury accidents.

- Curve signing and marking
- Center line rumble strips
- Edge rumble strips
- Delineation
- High friction surface treatments.
- Tree management
- Shoulder widening

Project Relevance: The Roadway Departure Implementation Plan identifies low cost, cost effective safety treatments (e.g. resurfacing, surface transportation projects) to reduce the potential for future crashes. The TSP update will consider and incorporate safety treatments for transportation projects where crash history exists.

Oregon Intersection Safety Implementation Plan (2012)

The Intersection Safety Plan provides specific information and direction regarding intersection safety improvements to implement the current TSAP. It directs that the traditional approach of relying primarily on pursuing major improvements at high-crash intersections be complemented with an expanded systematic approach. This approach should involve deploying large numbers of relatively low-cost, cost-effective countermeasures at many targeted high-crash intersections and coordinating engineering, education, and enforcement (3E) initiatives on corridors with high numbers of severe intersection crashes.

> **Project Relevance:** Consistent with the State's Transportation Safety Action Plan, the TSP consider corridors and appropriate countermeasures identified in the Intersection Safety Implementation Plan to reduce bicycle and pedestrian crashes.

Oregon Bicycle and Pedestrian Safety Implementation Plan (2014)

The Bicycle and Pedestrian Safety Implementation Plan identifies priority locations and countermeasure options for reducing pedestrian and bicycle crashes. The Plan conducted a systemic planning process to create a prioritized list of candidate locations for safety improvement within each ODOT Region. It also provides recommendations on appropriate countermeasures to reduce crashes.

> **Project Relevance:** The TSP update will consider the corridors and priority locations within Woodburn, as well as the appropriate countermeasures, identified in the Oregon Bicycle and Pedestrian Safety Implementation Plan to ensure that planned projects will serve to reduce bicycle and pedestrian crashes.

2015 Oregon Standard Specifications for Construction, Standard Drawings, Standard Details

The Oregon Standard Specifications for Construction includes, and provides assistance on the application and interpretation of, standard specifications and special provisions for project contracting with ODOT. The Standard Drawing and Standard Details are engineering manuals and tools that specify construction details for public works projects.

> **Project Relevance:** The TSP update will reference the specifications, drawings, and details for evaluating initial project cost estimates during the TSP update process.

REGIONAL PLANS

Marion County Rural Transportation System Plan (2005, last amended in 2013)

The Marion County Rural Transportation System Plan (RTSP) is the County's long-range plan for developing and managing its transportation system in rural areas (outside Urban Growth Boundaries). The TSP was adopted in 2005, and was last amended in 2013 with updated chapters 3, 4, 5, 6, 7, and Appendix B.

The Marion County Rural TSP provides the framework for developing an efficient, well-balanced, and cost-effective transportation system for areas outside of incorporated cities. Chapter 6 of the RTSP (updated in 2013) includes 2030 population forecasts generated by PSU for Marion County's larger cities, including Woodburn. These population forecasts were used by County staff to project future traffic volumes for the year 2032 for roadways in rural Marion County.

Chapter 8 of the Marion County Rural TSP was last updated in 2005 and lists the existing and future needs of the Marion County rural roadway system and the projects recommended to address those needs. In addition to County-recommended projects, it lists connectivity and modernization needs proposed by cities, including two projects proposed by Woodburn. Chapter 8 also identifies a state highway safety improvement needed at the interchange of I-5 and Highways 214 and 219 (also known as the Woodburn Interchange). The TSP notes that although the Woodburn Interchange is within the Woodburn UGB, transportation to and from rural areas of Marion County is affected by the issue.

Chapter 8 also notes the need to improve regional passenger and freight mobility on I-5 through Woodburn by constructing new interchange and connector roads, as well as a recommended corridor study on Oregon 99E, which passes through Woodburn. In addition, Chapter 9 of the TSP makes recommendations regarding the expansion of public transit services along major corridors from, to, and through Woodburn, and Chapter 10 includes policies for coordinating access management and design standards for county roadways inside the UGB.

> **Project Relevance:** County transportation improvement projects will be reviewed and considered in the Woodburn TSP update. Recommendations in the updated TSP will need to be consistent with the County TSP; if necessary, needed refinements to the County plan will be identified and discussed as part of this update process.

Marion County Comprehensive Land Use Plan (1981, last amended in 2010)

The Marion County Comprehensive Plan was originally adopted in 1981 and last updated in September 2010. The Comprehensive Plan includes general transportation policies in the Transportation Element (Section E of Chapter II). More detailed transportation policies are included in the Marion County Rural Transportation System Plan, reviewed separately in this memorandum.

Policies relevant to the Woodburn TSP update can be found in the Urbanization and Transportation chapters of the Marion County Comprehensive Plan. The Urbanization chapter contains transportation policies and coordination guidelines relating to street connectivity, transit, freight routes, and active transportation. The Transportation chapter contains policies for coordinating access management and design standards for county roadways inside the UGB. However, Transportation System Management (TSM) Policy 3 states that for County Roads within the UGB of a city that has adopted access spacing requirements (in their Transportation System Plan or other official document) the County will use the City's adopted spacing standards, unless in the County's judgment they would not be appropriate. Because Woodburn has adopted access spacing requirements in the current TSP, the County's spacing requirements would not apply within the city's UGB.

> **Project Relevance:** The TSP update process will consider the relevant goals and policies in the Marion County Comprehensive Plan in the development of the updated TSP.

CITY OF WOODBURN PLANS

Comprehensive Plan (last amended 2016)

The Woodburn Comprehensive Plan is the controlling land use document for the City and its Urban Growth Boundary (UGB). The Comprehensive Plan has a chapter dedicated to Transportation Goals and Polices. There are seven Transportation Goals, each with between two and seven policies. The Comprehensive Plan includes other transportation-related policies in other chapters. An excerpt of all the Goals and Policies that are relevant to the Woodburn TSP update are provided in Attachment A. In general, goals and policies in Woodburn's Comprehensive Plan provide guidance in the following areas.

- The design and location relationship between land use development street classifications.
- Guidance on the future land use development and transportation facility improvements for Highway 99E.
- Growth management restrictions on Butteville Road NE and the Southwest Industrial Reserve area to protect future industrial development viability.
- The multi-modal transportation system, including intra-city transit, complete bikeway network, improved sidewalk, and off-street pathway connections.
- Coordination with Marion County and ODOT to improve safety, preserve capacity and accessibility, and construct needed street connections outside the UGB.
- The design, safety, and function of streets in the Woodburn downtown area.

In January 2016 the Oregon Department of Land Conservation and Development (DLCD) approved Woodburn's Comprehensive Plan Amendments, amending the UGB expansion and establishing an Urban Reserve Area. The UGB expansion consists of approximately 619 gross acres. This includes 190 acres for industrial use, 23 acres for commercial use and 406 acres for residential use. Part of the UGB amendment included the following conditions:

- A twenty-year expansion limitation condition west of Butteville Road NE.
- A twenty-year expansion limitation condition northeast of Highway 99E.
- An Urban Reserve, consisting of 230 acres, east of the intersection of Butteville Road NE and Parr Road NE.

In addition, the amendments to the Comprehensive Plan also included the following:

Urban Growth Coordination Agreement (2015)

The Urban Growth Coordination Agreement provides coordination and revision procedures and policies that, along with the policies of the Woodburn Comprehensive Plan, serve as the basis for land use decisions within the Urban Growth Area and within the Urban Reserve Area. The Coordination Agreement establishes an Urban Reserve Area and two 20-year UGB expansion limitations (see Figure 1).

Coordination Policy and Procedure 10 discourages new public facilities in the Urban Growth Area without annexation into the City's jurisdiction.

> *10. The City shall discourage the extension of public facilities into the Urban Growth Area without annexation. However, if the extension of public facilities into the Urban Growth Area is necessary because of an emergency, health hazard or the City determines it is otherwise desirable, the facilities may be extended subject to terms and conditions contained in a service contract between the City and the property owner.*

The Coordination Agreement also provides restrictions to Butteville Road NE to discourage urban traffic unrelated to planned and existing industrial uses in the immediate area and unrelated to agricultural uses west of Butteville Road.[4]

Woodburn Comprehensive Plan, Growth Management Goals and Policies Amendment

As a result of the Urban Growth Coordination Agreement, the Growth Management Goals and Policies section of the Comprehensive Plan were amended to include additional policies to support the UGB expansion limitations (Policy G-1.20) shown in Figure 1 and establishing an Urban Reserve Area (Policy G-1.21) shown in Figure 2.

Policy G-1.27 in the amended Comprehensive Plan discourages urban traffic on Butteville Road unrelated to planned and existing industrial uses in the immediate area and unrelated agricultural to agricultural uses to the west.

[4] This portion of the Coordination Agreement was also adopted as an amendment to the Comprehensive Plan (Policy G-1.27) as described below.

Figure 1: UGB Expansion Limitation

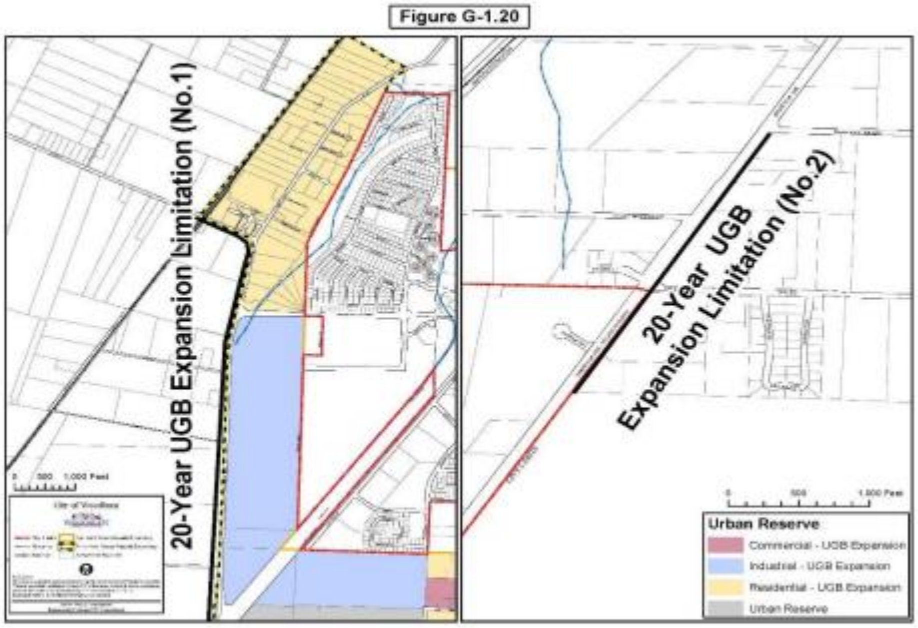

Figure 2: Urban Reserve

Project Relevance. The updated TSP is intended to be adopted as the transportation element of the City's Comprehensive Plan, replacing the 2005 TSP. Recommendations resulting from the TSP update process will either be consistent with existing policies, including those identified in the appendix, or will inform updated policy language that will be proposed for adoption as part of the TSP update. Amendments to the Zoning and Land Use Development Ordinance will also likely be needed in order to implement the updated TSP; proposed amendments will be based on existing, revised, or new policies related to, among other things, procedures, land use review coordination, strengthening multi-modal connectivity and access, and protection of transportation facilities.

Woodburn Comprehensive Plan and UGB Amendment Justification Studies (2000 – 2005)

The documents reviewed below include background studies and memoranda that are considered the principal documents used to support the amendments to Woodburn's Comprehensive Plan and UGB in 2005. All the documents were reviewed for pertinent transportation-related policies or projects; however, only some documents include information that is relevant to Woodburn's TSP update. In general, most of the recommendations from the effort that led to the 2005 amendments were related to land use, growth, and economic development. Although all these topics influence or are influenced by transportation planning, very little information was directly related to transportation.

City of Woodburn Local Wetlands Inventory and Riparian Assessment (2000)

The report is one of several background documents used to inform and support 2005 amendments to the Comprehensive Plan and UGB amendment. It includes the methods and results of a Local Wetlands Inventory (LWI) for land within the 2003 UGB.[5] The LWI replaced the US Fish and Wildlife Service National Wetlands Inventory and has been incorporated into the statewide wetlands inventory. Riparian assessments were also conducted as part of the report. Woodburn amended the WDO to comply with the safe harbor provisions for wetlands and riparian corridors through adopting the Riparian Corridor and Wetlands Overlay District (RCWOD) based on the results and inventories in this document.

Woodburn Economic Opportunities Analysis (EOA) and Development Strategy (EDS) Report (2001)

These documents form the foundation for the 2005 Comprehensive Plan and UGB expansion amendments. The EOA identified "target industries" based on Woodburn's comparative economic advantages and local policy objectives and describe site requirements of each employment category. The City's comparative advantages include the City's I-5 location between Salem and Portland; the availability of large tracts of land with direct access to the I-5 interchange with Highway 214; and the City's commitment to provide services to these sites.

Multiple other documents were produced that refined the findings and recommendations of the EOA and EDS. They include:

- Woodburn Population and Employment Projections (2002). The memorandum reviews the City's population and employment forecasts and presents revised growth projections based on data from the EOA and EDS. In addition, it allocates employment projections and reviews impacts from forecasts. The memorandum suggests that Woodburn's population and

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[5] Wetlands, stream corridors, floodplains and wildlife habitat for areas outside of the 2003 UGB were documented in Technical Report 3, Potential UGB Expansion Area Analysis, Natural Resources Inventory

employment growth would grow faster than the average for Marion County from 2000-2020.

- Woodburn Occupation/Wage Forecast (2003). The memorandum researches the impacts the City's economic development strategies will have on household incomes. The memorandum suggests that a higher percentage of new jobs created in Woodburn between 2000 and 2020 will pay more than existing jobs, the impacts of which would create more demand on single-family housing in a broad range of prices.
- Site Requirements for Woodburn Target Industries (2003). The memorandum researches the demand for non-residential land implied by the revised employment forecast and site needs for industries targeted as part of the City's economic development strategy. The memorandum recommends about 370 acres of new development is needed between 2000 and 2020 and provides a range of required parcel sizes, from 0.5 acres to 100+ acres, necessary to attract businesses. It also identifies several industries that are reliant on transportation facilities, such as large printing and publishing firms, stone, clay, glass, and concrete manufacturers, and large warehousing.

Technical Report 1, Buildable Lands Inventory (2005)

The Technical Report determined the buildable land area, on a parcel-by-parcel bases, within the 2005 Woodburn UGB. The revisions in 2005 accounted for changes in the Comprehensive Plan and UGB amendment package, adopted in 2005. The study determined there are 679 vacant buildable acres of land for low, nodal-low, medium, and nodal-medium density residential uses. It also determined there are 459 vacant buildable acres of land for industrial and commercial uses.

Technical Report 2, Woodburn Residential Lands Needs Analysis (2005)

The Technical Report projects the land area needed for residential and public/semi-public uses for a planning period between 2003 and 2020. Two scenarios were presented for projected residential land needs; a base case scenario based historic trends and a modeled scenario based on projected income by age cohort, related to assumptions of types and cost for various housing types. The model scenario result suggested the additional total acreage needed to serve the 2020 growth projections would be approximately 339 acres across various residential plan designations. The report also recommends new overlay plan designations to implement the identified needed housing types and reduce the demand for needed acreage. These recommendations have been incorporated into in Woodburn's current Comprehensive Plan and Development Ordinance.

Technical Report 3, Potential UGB Expansion Area Analysis Natural Resources Inventory (2002)

The Technical Report examined eight UGB expansion areas that extend approximately one-half mile outside of the 2002 UGB. The report considered factors such as agricultural and exceptions lands and natural resources to determine the amount of buildable land in each area. The information documented wetlands, stream corridors, floodplains, and wildlife habitat within the UGB study areas to identify which areas were most suitable to expand the UGB.

Citizen Involvement Report (2005)

The Citizen Involvement Report provides a summary of citizen involvement opportunities that occurred during the periodic review planning process.

City of Woodburn Periodic Review and Urban Growth Boundary Amendments Findings of Fact

The Findings of Facts provides a summary of new and amended ordinances and decisions, a comprehensive list of periodic review work tasks that were completed, and findings for compliance with state requirements.

City's Public Facilities Plan (2005)

The Public Facilities Plan (PFP) identifies major infrastructure projects necessary to serve the growth in Woodburn through the year 2020. PFP's typically include four elements: Domestic Water, Sanitary Sewer, Storm Drainage, and Transportation. However, Woodburn's PFP incorporates the 2005 TSP by reference and refers to it for information related to transportation project descriptions, location, timing, and costs necessary to serve land within the UGB.

> **Project Relevance:** The TSP update process will reflect the findings of the various studies and reports used to support the updated UGB boundary, as it related to multi-modal transportation facilities to serve areas where expected residential, commercial, and industrial growth is expected to occur.

Woodburn TSP (Volumes I and II) (2005)

The Woodburn TSP guides the management and development of appropriate transportation facilities in Woodburn, incorporating the community's vision, while remaining consistent with state, regional, and local plans. The current plan was adopted in October of 2005. It contains transportation goals, policies, and strategies to address the city's transportation needs. The TSP provides a plan for the development of the transportation system, which addresses improvements to roadways, new pedestrian and bicycle facilities, improvements in public transit service, and transportation demand management strategies.

> **Project Relevance:** The TSP update process will review goals, objectives, standards, and recommended projects from the current plan and will determine what to retain or change in the updated TSP. This project will update transportation improvement projects for all modes, based on current and projected needs. Updated data, stakeholder and community involvement, and evaluation criteria will be used in making these determinations.

Woodburn Transit Plan Update (2010)

The Woodburn Transit Plan Update (TPU) was adopted in 2010 and guides the provision of transit services and facilities in Woodburn over 20 years. It is intended to supplement the 2005 TSP to ensure that transit is an integral component of the Woodburn's multimodal transportation network. Recommendations in the TPU offer guidance on where transit infrastructure investments should be made, compliance with the Americans with Disabilities Act (ADA), and connectivity to regional transit services.

Key findings in the TPU were developed based on the review of related plans and documents, community and demographic trends, existing public transportation services, transit services of a similar scale, passenger surveys, and community input. These key findings are summarized in

Chapter 8 of the TPU. Additionally, the TPU includes goals and objectives derived from key findings that are tailored to the provision of public transportation and include objectives that offer very specific guidelines for how to improve public transportation service, as well as a basic set of performance standards to guide operations.

The TPU also identifies a set of potential service strategies based on the needs assessment and goals and objectives. The strategies, presented as options for improving the transit system in Woodburn, are prioritized based on how well they satisfy the 28 identified objectives.

> **Project Relevance:** The TPU was developed to serve as the transit element of the TSP and allow the City to make land use code and guideline revisions to ensure a safe and efficient public transportation system. The TSP update process will review relevant findings, goals, objectives, and policies related to transit; updated TSP policy will reflect and be consistent with the objectives of the TPU and proposed projects should be consistent with the TPU's identified routes and service standards.

Highway 99E Corridor Plan (2012)

The Highway 99E Corridor Plan was developed to facilitate the revitalization of the corridor as a viable, safe, and sustainable business district. The project focused on Highway 99E corridor from the proposed southern Woodburn Urban Growth Boundary (just south of Belle Passi Road) to the northern Urban Growth Boundary (near the intersection of Highway 99E and Carl Road, north of Industrial Way). It identifies needed transportation improvements, recommends appropriate land uses, and illustrates the urban design vision for the section of Highway 99E running through the City of Woodburn. The Corridor Plan also identifies the policies, regulations, and actions necessary to implement this vision.

> **Project Relevance:** The TSP update process will review, and modify and/or incorporate as appropriate, the plan's relevant transportation-related vision statements, goals, guiding principles, proposed improvements, access management strategies, and proposed implementation measures.

Woodburn Interchange Area Management Plan (2006)

The Woodburn Interchange Area Management Plan (IAMP) documents interchange management measures and summarizes information on the project's background, purpose and need, relevant plans and policies, land use and environmental issues, transportation conditions and deficiencies, alternatives development and analysis, plan recommendations, public involvement, and implementation strategies. The stated purpose of the Woodburn Interchange Project was to improve the traffic flow and safety conditions of the existing I-5/Woodburn interchange, as the existing interchange does not meet current design and operational standards. The IAMP includes a set of approved project goals, as well as a set of recommendations and local and state implementation actions and responsibilities.

> **Project Relevance:** IAMP recommended amendments to the TSP will be considered, and the TSP update process will review the plan's goals, recommendations, and implementation measures and consider what elements should be incorporated into the updated Woodburn TSP update.

Woodburn Downtown Development Plan Update (2010)

The Woodburn Downtown Development Plan, updated in 2010, includes a framework plan for transportation improvements. These improvements focus on pedestrian and bicycle circulation, parking in Old Town, and streetscape enhancement concepts for three of the planning sub-districts (Old Town, the Gateway Subarea, and Young Street Corridor). The Plan's study area encompasses important transportation facilities, including the Union Pacific Railroad, which provides both freight and Amtrak service, and North Front Street, South Front Street, and Young Street, which serve as gateways to downtown from Highways 214 and 99E.[6] In addition to pedestrian and bicycle circulation improvements, parking, and streetscapes, the Plan addresses future rail transit and bus transit.

The implementation chapter of the Plan includes a list of specific transportation projects ("Transportation Catalysts") that will support and provide enhanced vehicular and pedestrian access to the project area. To integrate the transportation improvements and street design concepts therein, the Plan also includes a list of potential amendments to the City's TSP. Recommended projects and amendments include the identification of one-way streets and cross section standards for the Old Town Commercial street grid.

> **Project Relevance:** The TSP update process will review, update as necessary, and incorporate where relevant, the plan's goals, implementation measures, and recommended projects and amendments to the TSP.

Woodburn Proposed Budget FY 2016-17

Woodburn's Proposed FY 2016-17 Budget provides an outline and summary of the City's total proposed budget, excluding transfers. The City's proposed budget is balanced; however, it describes a sense of caution regarding the City's financial capacity to maintain current levels of service in upcoming years.

City's current and historic funding and sources

Woodburn relies on two major sources of revenue to fund operations: property taxes and utility charges. These two revenue categories constitute more than 70 percent of the City's operating revenues. Other revenues supplement City operations, including franchise fees (levied on utilities for use of public right-of-way), intergovernmental revenue (state shared revenue, liquor and cigarette taxes, transportation revenues), fees and charges (planning and engineering fees, recreation fees, business and solicitation registration fees), and fines (municipal court). These secondary revenue sources are critical to overall financial health of the City and are historically less volatile than other revenue sources.

[6] Note that the 2012 Highway 99E Corridor Plan contains specific recommended improvements at Young Street and Highway 99E. See Figures 4 and 5.

Table 5: Transportation Related Funds

	Revenues & Expenditures (Total)	FY 2013-14 Actual	FY 2014-15 Actual	FY 2015-16 Budget	FU 2016-17 Proposed
Transit Fund	Revenues	752,574	1,174,532	684,750	754,750
	Expenditures	624,811	1,034,507	684,750	754,750
Street Fund	Revenues	4,296,805	5,001,328	5,065,034	4,801,497
	Expenditures	1,536,183	2,035,284	5,065,034	4,801,497
Street & Storm Cap Const. Fund	Revenues	773,933	179,375	345,000	2,995,000
	Expenditures	595,781	113,938	345,000	3,506,000
Special Assessment Fund	Revenues	1,041,261	1,051,658	1,071,849	80,500
	Expenditures	-	-	1,071,849	80,500
Street SDC Fund	Revenues	5,861,072	5,711,077	6,965,223	2,509,838
	Expenditures	657,506	4,366,640	6,965,223	2,509,838

City's Capital Improvement Program

The Proposed FY 2016-17 Budget lists all capital construction projects individually, including a specific scope and budget and project data sheets. All projects are budgeted for the full cost, even if the project is expected to span multiple budget periods, to ensure enough budget is available should project schedules accelerate. A list of current year projects is included below, in Figure 3.

Figure 3: Woodburn Current Year Projects

Current Year Projects

Project Name	Project Number	Street & Storm Cap Const Fund 363	Sewer Cap Const Fund 465	Water Cap Const Fund 466	Total
West Hayes - Settlemier to Cascade - road improvement[(A)]	CIST1486	3,125,000	-	-	3,125,000
Safety Sidewalk & ADA Construction	CIST1165	25,000	-	-	25,000
Settlemier/W. Lincoln intersection improvement	CIST1470	60,000	-	-	60,000
4th Street - Garfield to Harrison Storm Replacement	CDST1471	10,000	-	-	10,000
5th Street - Lincoln to Harrison Storm Replacement[(B)]	CDST1487	275,000	-	-	275,000
Automatic Read Meter Replacement Program	CDWA1060	-	-	300,000	300,000
Hwy 99E Aztec to Tomlin	CDWA1468	-	-	75,000	75,000
POTW Phase 2A/Natural Treatment System	CISW1052	-	1,000,000	-	1,000,000
Mill Creek Pump Station - Phase 1	CDSW1413	-	150,000	-	150,000
Pump Station Upgrades (Existing Upgrades - Reliability)	CDSW1414	-	225,000	-	225,000
Sanitary Sewer Collection System Piping replacement	CDSW1488	-	250,000	-	250,000
W Hayes Street Sanitary Sewer Pipeline Project	CDSW1417	-	1,500,000	-	1,500,000
Young Street Pipeline Project[(C)]	CDSW1469	-	1,700,000	-	1,700,000
Total		3,495,000	4,825,000	375,000	8,695,000

[(A)] CIST1486 - $1,700,000 funded from Street SDC Fund and $80,000 being funded from Storm SDC Fund

[(B)] CDST1487 - $75,000 funded from Storm SDC Fund

[(C)] CDSW1469 - $500,000 funded from Sewer SDC Fund

Capital Improvement Plan for future Fiscal Years is shown in Figure 4.

Figure 4: Capital Improvement Plan – FY 2017-18 to FY 2021-22

Project	Revenue Source	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Street & Storm Construction							
Construction of Pedestrian Enhancements along Hwy 99E	State/Street SDC	-	-	-	390,000	-	390,000
Hwy 99E Widening - Lincoln Street to south of Cleveland	State/Street SDC	-	-	-	-	7,150,000	7,150,000
Improve Roadway Lighting along Hwy 99E Corridor	State/Street Fund	-	-	-	2,110,000	-	2,110,000
Hardcastle/Railroad Realignment	Street Fund/Street SDC	1,100,000	-	-	-	-	1,100,000
Evergreen Rd: connect to Parr Rd - Street Improvements	Developer/Street SDC	-	600,000	800,000	-	-	1,400,000
Alley: Garfield - Cleveland - Street Improvement	Street Fund	-	-	342,000	-	-	342,000
Willow Avenue Extension	Street Fund	-	40,000	1,000,000	-	-	1,040,000
Harrison:Settlemier to Front - Street Improvement	Street Fund/Storm SDC/Street SDC	-	-	-	60,000	935,000	995,000
Front Street Improvements - Front Street Ramp -- NCL	Street SDC	-	-	1,500,000	2,300,000	-	3,800,000
Safety Sidewalk Construction/ADA	Street Fund	25,000	25,000	25,000	25,000	25,000	125,000
Storm Drain Construction							
North 2nd & 3rd - South of Yew St.	Street Fund/Storm SDC	-	-	230,000	-	-	230,000
North Front Detention - Culvert to Commerce	Street Fund/Storm SDC	18,000	282,000	-	-	-	300,000
Harrison Street, Replace Storm that is under existing homes	Street Fund	275,000	-	-	-	-	275,000
Landau/Laurel/George Storm (to Pudding)	Street Fund/Storm SDC	-	-	250,000	600,000	-	850,000
422 Tooze Street	Street Fund/Storm SDC	-	-	-	150,000	-	150,000
Settlemier Detention and Outlet Works	Storm SDC	300,000	352,000	-	-	-	652,000
Drainage work & street modifications @ High St	Street Fund/Storm SDC	-	-	-	-	30,000	30,000
Cleveland Street at Mill Creek Culvert Rehabilitation	Street Fund	209,000	-	-	-	-	209,000
Aquatic Center Area Storm Improvement	Street Fund	78,800	-	-	-	-	78,800
Rehab Existing Collection System	Street Fund	-	-	-	500,000	500,000	1,000,000
Total Street and Storm Drain Construction		2,005,800	1,299,000	4,147,000	6,135,000	8,640,000	22,226,800
Street Resurfacing: Gravel Streets							
Yew Street, 2nd to 3rd	Street Fund	160,000	-	-	-	-	160,000
Elm Street	Street Fund	-	300,000	-	-	-	300,000
Christiansen Street	Street Fund	-	-	185,000	-	-	185,000
Wilson Street	Street Fund	-	-		260,000	-	260,000
Church Street, 1st to 2nd	Street Fund	-	-	-		150,000	150,000
Total Gravel Streets		160,000	300,000	185,000	260,000	150,000	1,055,000
Water: Water System Construction							
Harrison Street - Settlemier to Front Street	Water Fund	-	450,000	-	-	-	450,000
Lincoln to Hardcastle Loop at Washington School	Water Fund/Water SDC	-	-	-	225,000	-	225,000
Legion Park Waterline Loop	Water Fund/Water SDC	-	-	-	-	200,000	200,000
Rehab/Capacity Improvements to existing distribution system	Water Fund/Water SDC	250,000	250,000	250,000	250,000	300,000	1,300,000
Water System Reconstruction Total		250,000	700,000	250,000	475,000	500,000	2,175,000
Sewer: Wastewater Treatment Plant							
POTW Phase 2A/Natural Treatment System	Sewer Fund	5,000,000	6,000,000	400,000	-	-	11,400,000
Storm Water Treatment Final Engr.	Sewer Fund	15,000	250,000	-	-	-	265,000
Headworks- Screening	Sewer Fund	-	-	380,000	1,520,000	-	1,900,000
Primary Sedimentation- PEPS	Sewer Fund	-	-	600,000	2,400,000	-	3,000,000
Primary Sedimentation- Convert WW Clarifiers	Sewer Fund	-	-	-	340,000	1,360,000	1,700,000
Filtration	Sewer Fund	-	-	-	380,000	1,520,000	1,900,000
Septage RV Dump Station Improvements	Sewer Fund	-	60,000	240,000	-	-	300,000
Poplar Tree Land Purchase	Sewer Fund	-	-	885,000	-	-	885,000
Poplar Tree Expansion on Additional Property	Sewer Fund	350,000	350,000	364,000	364,000	-	1,428,000
Sewer: Sewer Collections System Construction							
Replacement Costs-Collection System Piping	Sewer Fund	250,000	460,000	460,000	460,000	460,000	2,090,000
Rainier, Force & Gravity section	Sewer Fund	300,000	-	-	-	-	300,000
South Brown St. Pump Station	Sewer Fund/Developer	800,000	-	-	-	-	800,000
I-5 Pump Station Project	Sewer Fund	-	-	-	261,000	1,046,000	1,307,000
I-5 Force Main Project	Sewer Fund	-	-	619,000	2,474,000	-	3,093,000
Santiam Pump Station Replacement	Sewer Fund	205,000	200,000	-	-	-	405,000
Front Street Pipeline Project	Sewer Fund	-	208,000	832,000	-	-	1,040,000
Progess Way Pipeline Project	Sewer Fund	-	-	-	255,000	1,092,000	1,347,000
Lincoln Street Bryan to Mill Creek, Sewer Rehab	Sewer Fund	-	-	500,000	-	-	500,000
Total Sewer Construction		6,920,000	7,528,000	5,280,000	8,454,000	5,478,000	33,660,000
Parks							
Legion Park Improvements, Phase 2	Parks SDC	-	-	1,500,000	-	-	1,500,000
Parks Construction Total		-	-	1,500,000	-	-	1,500,000

Woodburn Park Master Plans

Woodburn Parks and Recreation Master Plan Update (2009)

The original City of Woodburn Parks and Recreation Master Plan was completed and adopted in October 1999. The stated intent of the plan update, adopted in 2009, was to continue to evaluate and develop a well-planned systemic approach to community parks and recreation needs by building on the community's unique parks and recreation assets and identifying new opportunities.

The plan establishes a clear direction to guide city staff, advisory committees, and elected officials in their efforts to enhance the community's parks system, open space, trails, recreation facilities, programs, and services.

The Plan identifies the need for pedestrian crossings across transportation facilities such as I-5, train tracks, and major roads such as Mt. Hood Highway, as well as the need to work with the City to provide safe and enjoyable sidewalks or side paths as routes to parks.

> **Project Relevance:** The TSP update process will review the plan's applicable goals, strategies, and action steps and incorporate them into the Woodburn TSP update.

Mill Creek Greenway Master Plan (2006)

The Mill Creek Greenway Master Plan encompasses the Mill Creek corridor and tributaries, and includes a trail that runs the length of the city. The trail is multi-use and designed for bicycles, walkers, and light maintenance vehicles. The plan recommends seamlessly integrating the trail into the city's existing roadside bicycle system.

The City's 1999 Parks and Recreation Comprehensive Plan Update includes policies stating that the City will manage the Mill Creek corridor as a public greenway and pathway that includes open space cycling and walking, nature study and recreation, and that that the City will seek dedication of floodplains and creek corridors for natural areas, neighborhood recreation areas, open space, and transportation. Additionally, the City's TSP calls for utilization of the Mill Creek corridor and tributaries for non-motorized transportation, and the Marion County TSP includes a trail route along Mill Creek that would connect Woodburn with Gervais to the south and Hubbard and Aurora to the north through the continuation of Woodburn's Mill Creek Greenway system.

> **Project Relevance:** The TSP update process will review the plan's applicable recommendations, consider the direction provided in other planning documents for the Mill Greek Greenway, and will recommend updated policy and projects consistent with City goals of enhancing multimodal access to this area.

Community Centers Feasibility Study (2007)

The Community Centers Feasibility Study explores the costs and opportunities for developing two community centers, an Arts & Cultural Community Center and a Recreation Center, in the City of Woodburn. Relevant recommendations include the addition of sidewalks along Oak Street during the expansion of the Woodburn Memorial Aquatic Center.

> **Project Relevance:** The TSP update process will review the plan's applicable recommendations and will ensure that multimodal access to community centers are planned for and implemented in the updated Woodburn TSP.

Legion Park & Settlemier Park Master Plans (2003)

Objectives of the Legion Park and Settlemier Park Master Plans included achieving community input and ownership; integrating the city's policies and long-range plans for parks; achieving universal access; balancing the local needs of the neighborhood with the preservation of natural resources; exploring ways to meet normal recreation needs with limited site areas; and addressing problematic management issues, such as maintenance issues and impacts to adjoining property owners. Relevant recommendations in the plans relate to safety and include the evaluation of traffic speeds along Park Avenue in the Legion Park Master Plan.

> **Project Relevance:** The TSP update process will consider multimodal access to Legion Park and Settlemier Park and will reevaluate traffic safety issues in their vicinity. As relevant and necessary, the updated Woodburn TSP will include projects that support and enhance safe and efficient access to these parks.

City of Woodburn Addendum to the Marion County Natural Hazards Mitigation Plan (2010)

Woodburn developed the addendum to the Marion County Natural Hazards Mitigation Plan in an effort to increase the community's resilience to natural hazards. The addendum focuses on the natural hazards that could affect the city, including drought, flood, earthquake, landslide, volcano, wildfire, wind storm, and severe winter storm. The addendum provides a set of actions that aim to reduce the risks posed by natural hazards through education and outreach programs, the development of partnerships, and the implementation of preventative activities via the comprehensive plan, development code, public facilities plan, transportation system plan, or parks master plan. It includes a section profiling the city's existing transportation system in the context of natural hazards resilience. The addendum also includes a review of the city's existing relevant documents, including the current TSP.

> **Project Relevance:** The TSP update process will review the plan's applicable recommended mitigation action items and, where necessary, incorporate them into the Woodburn TSP update. Enhancing resiliency, including the Mitigation Plan actions related to improving transportation facilities, will be reflected in the goals and policies in the updated TSP; proposed projects in the updated TSP should be consistent with the Mitigation Plan's objectives.

Woodburn Target Industries Analysis (2016)

The Woodburn Target Industries Analysis provides the City with a current independent analysis of Woodburn's economy that identifies the City's economic opportunities and the best use of the Southwest Industrial Reserve Area, as indicated by a target industry analysis. The analysis also considers target industries for three other sites: Stacy Allison Way, Commerce Way/Front Street, and Young Street/Highway 99. Woodburn is compared to Marion County and the Portland region—including Clackamas, Washington, and Multnomah Counties—and opportunities are examined in the context of Marion County's economy. The report cites transportation infrastructure as one of the City's disadvantages for economic development, identifying as barriers to development transportation access, upgrade, and improvement needs.

> **Project Relevance:** The TSP update process will consider the identified transportation-related barriers to development in this Analysis, specifically transportation access and improvement needs in association with economic development. Improving access and transportation conditions to important employment areas will be reflected in evaluation criteria and, ultimately, recommended projects in the updated TSP.

Woodburn Wastewater Facilities Plan (2010)

The Woodburn Wastewater Facilities Plan identifies and addresses wastewater system improvements needed to continue reliable service to the area during the planning period. The report is divided into three volumes: Volume 1: Wastewater Treatment, Volume 2: Wastewater Collection and Transmission System, and Volume 3: Wastewater Rate and System Development Charge Study.

> **Project Relevance:** The TSP update process will review the plan's relevant analyses and recommendations and incorporate them into the Woodburn TSP update where appropriate.

Woodburn Development Ordinance (2002, last amended in 2017)

The Woodburn Development Ordinance (WDO) was adopted in 2002 and was most recently amended in January 2017. It is intended to implement the Woodburn Comprehensive Plan in accordance with Oregon's statewide planning goals and statutes, and to regulate development within city limits. The WDO contains several sets of requirements that address the relationship between land use development and transportation system development. A detailed review of WDO is provided in Attachment B.

Excerpt of Woodburn Comprehensive Plan Goals and Policies related to transportation

Marion County Coordination Goals and Policies

Goal

C-1. To coordinate with Marion County regarding planning issues that extend beyond the boundaries of the City of Woodburn, including population allocations, amendments to acknowledged comprehensive plans and transportation system plans, and achievement of a compact urban growth form, as required by Statewide Planning Goals 2 (Land Use Planning and Coordination), 12 (Transportation) and 14 (Urbanization).

Residential Land Use Goals and Policies

Policies

D-1.1 Residential areas should be designed around a neighborhood concept. Neighborhoods should be an identifiable unit bounded by arterials, non-residential uses, or natural features of the terrain. The neighborhood should provide a focus and identity within the community and should have a community facility, such as a school, park, or privately owned community facility to allow for interaction within the neighborhood.

D-1.4 Streets in residential areas should be used by residents for access to collectors and arterials. Residential streets should be designed to minimize their use for through traffic. However, whenever possible, dead-end streets and cul-de-sacs should be avoided.

D-1.8 High traffic generating non-residential uses should not be located in a manner that increases traffic flows on residential streets or residential collectors. However, designated neighborhood commercial centers in Nodal Development areas are exempt from this policy.

D-1.11 Traffic from high density residential areas should have direct access to collector or arterial streets without having to utilize local reside7ntial streets to reach shopping and job centers.

Industrial Development Goals and Policies

Policies

E-1.4 Industrial areas that are located adjacent to arterial streets or to residential areas should be controlled through site plan review and buffer zones to minimize the impact of industrial uses.

Commercial Lands Goals and Policies

Policies

F-1.2 Lands for high traffic generating uses (shopping centers, malls, restaurants, etc.) should be located on well improved arterials. The uses should provide the necessary traffic control devices needed to ameliorate their impact on the arterial streets.

F-1.6 Commercial office and other low traffic generating commercial retail uses can be located on collectors or in close proximity to residential areas if care in architecture and site planning is exercised. The City should ensure by proper regulations that any commercial uses located close to residential areas have the proper architectural and landscaping buffer zones.

F-1.11 The Highway 99E commercial corridor south of Lincoln should be redeveloped over time with more intense mixed use development. The Mixed Use Village Overlay (MUVO) designates an area that is intended to promote efficient use of land and urban services; create a mixture of land uses that encourages employment and housing options in close proximity to one another; restrict land extensive commercial, storage, and industrial uses; and encourage pedestrian-oriented development.

F-1.14 The City intends to beautify the Highway 99E commercial corridor through measures such as replacement of overhead power and telephone lines with underground utilities, enhancing street lighting in the corridor, providing for non-conforming sign amortization, providing enhanced streetscape furnishings in key pedestrian areas, and establishing a storefront improvement program. The City will explore options to fund such improvements, including its Capital Improvement Program, formation of a Local Improvement District, and Urban Renewal funds.

Growth Management Goals and Policies[1]

Policies

G-1.3 The City shall provide an interconnected street system to improve the efficiency of movement by providing direct linkages between origins and destinations.

G-1.4 The City shall assure the provision of major streets as shown in the Transportation Systems Plan. The City shall hold development accountable for streets within and abutting the development. In addition, the policy of the City is to emphasize development outward in successive steps and phases that avoid unnecessary gaps in the development and improvement of the streets.

G-1.10 Woodburn will ensure that land is efficiently used within the UGB by requiring master development plans for land within Nodal Development Overlay or Southwest Industrial Reserve overlay designations. Master plans shall address street connectivity and access, efficient provision of public facilities, and retention of large parcels for their intended purpose(s).

G-1.27 Woodburn recognizes that residential uses present the most adverse conflicts with both agricultural practices and with many industrial uses, especially those that use trucks as part of their regular business practice. Woodburn and Marion County recognize that the land to the west of Butteville Road NE is a critical part of the irreplaceable land base of the region's agricultural industry. Therefore, to minimize conflicts between urban and agricultural uses and to minimize conflicts between the industrial uses in Southwest Industrial Reserve and other urban uses, the City and County will:

- Ensure that the design of any improvements to the portion of Butteville Road NE serving the Southwest Industrial Reserve not encourage any urban traffic unrelated to the industrial use in the immediate area and unrelated to agricultural uses west of Butteville Road.

[1] Note, the policies shown in Growth Management Goals and Policies section reflects the 2016 amendments that resulted from Urban Growth Coordination Agreement. To date, these policies are not found in the Woodburn Comprehensive Plan available online.

- As industrial development is planned for in the Southwest Industrial Reserve consideration shall be given to methods that mitigate impacts from development and adjacent agricultural activities. This can include buffers or increased setbacks along Butteville Road, provided that any buffers needed to reduce conflicts between the industrial uses and agricultural activity west of Butteville Road NE are located inside the UGB.

Transportation Goals and Policies

Woodburn amended its Transportation System Plan (TSP) in coordination with Marion County, the Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT) as part of its 2005 Periodic review package. The goals and policies listed below have been amended consistent with the 2005 TSP. A new "Marion County Coordination" subsection is added to ensure coordination with the Goals and Policies of the Marion County Growth Management Framework Plan.

Goal

H-1. Develop a multimodal transportation system that avoids or reduces reliance on one form of transportation and minimizes energy consumption and air quality impacts.

Policies

H-1.1 Develop an expanded intracity bus transit system that provides added service and route coverage to improve the mobility and accessibility of the transportation disadvantaged and to attract traditional auto users to use the system.

H-1.2 Develop a plan for providing travel options between Woodburn and Portland or Salem, including intercity bus service and potential bus/carpool park-and-ride facilities.

H-1.3 Develop a bikeway system that provides routes and facilities that allow bicyclists to travel from residential areas to schools, parks, places of employment, and commercial areas. Identify off-street facilities in City greenway and park areas. Ensure all new or improved collector and arterial streets are constructed with bicycle lanes.

H-1.4 Identify sidewalk and off-street pathway improvements to improve pedestrian mobility within neighborhoods and between residential areas and schools, parks, places of employment, and commercial areas. Ensure all new or improved collector and arterial streets are constructed with sidewalks.

Goal

H-2. Develop a street system that will handle projected year 2020 traffic demands in the Woodburn area, and interconnects residential areas with employment centers, schools, parks, churches, and regional transportation facilities.

Policies

H-2.1 Develop an updated roadway functional classification plan for the Woodburn area that reflects the desired function of different roadways, and is consistent with current federal guidelines for the designation of major streets in an urban area.

H-2.2 Work with ODOT to develop and implement strategies for improving state facilities within the City. Develop a strategy for improving Oregon 219/214 and 211 through Woodburn, including added travel lanes, signalization, and access management. Work with ODOT to implement the Highway 99E Corridor Plan to improve Highway 99E.

H-2.3 Identify new east-west and north-south collector/minor arterial streets within the City to relieve traffic demands on Oregon 219/214, 211, and 99E and coordinate with Marion County to construct the street connections needed outside of the urban growth boundary (UGB). Where development of new collector/minor arterial streets is not possible within the near future, such as when an alignment runs outside of the UGB, work with property owners during subdivision to provide local street connections to improve connectivity in the interim.

H-2.4 Develop updated street design standards for arterials, collectors, and local streets H-2.5 Identify a final strategy for paving currently unimproved streets in the City.

H-2.6 Identify the need for additional public parking provisions in Woodburn, including park-and-ride facilities, as well as a plan to support increased carpooling and transit use in the future.

H-2.7 Develop a capital improvement program that fulfills the transportation goals established by the community.

Goal

H-3. Develop transportation improvements that address overall traffic safety in the Woodburn area.

Policies

H-3.1 Work with ODOT to improve safety on state facilities within the City. Develop access management strategies for Oregon 219/214 and 211 through Woodburn, particularly focusing on the section of Oregon 214 between Interstate 5 (I-5) and Cascade Drive.

Work with ODOT and property owners through the redevelopment process to improve access management on Highway 99E in accordance with the access management strategies identified in the Highway 99E Corridor Plan.

H-3.2 Develop a plan for improving pedestrian and bicycle safety for travel to and from local schools, commercial areas, and major activity centers.

H-3.3 Identify street and railroad crossings in need of improvement, as well as those that should be closed or relocated.

H-3.4 Develop a plan for designated truck routes through the City and a plan to handle truck and rail hazardous cargoes.

Goal

H-4. Develop a set of reliable funding sources that can be applied to fund future transportation improvements in the Woodburn area.

Policies

H-4.1 Evaluate the feasibility of the full range of funding mechanisms for transportation improvements.

H-4.2 Evaluate the feasibility of instituting an added City gas tax for transportation improvements.

H-4.3 Identify a traffic impact fee structure for new development in the Woodburn area to fund transportation improvements.

Goal

H-5. Develop amendments to City land use standards and ordinances to reduce travel demand and promote use of modes of transportation other than the automobile.

Policies

H-5.1 Identify a range of potential Transportation Demand Management (TDM) strategies that can be used to improve the efficiency of the transportation system by shifting single-occupant vehicle trips to other models and reducing automobile reliance at times of peak traffic volumes.

H-5.2 Identify revisions to the Woodburn Zoning Ordinance for compliance with the TPR.

Goal

H-6. Coordinate with Marion County in planning for a safe and efficient county-wide transportation system by:

(a) Encouraging use of alternative modes of transportation including mass transit, bicycling, walking and carpooling; and

(b) Addressing transportation needs appropriate to both urban and rural areas throughout the county.

Policies

H-6.1 Woodburn shall jointly plan with the county to meet the transportation needs in the future.

(a) The Marion County Transportation System Plan (TSP) will be designed to accommodate the forecast population, housing, and employment identified in the Framework Plan, except where modified by the Woodburn Economic Opportunities Analysis (EOA) and the acknowledged 2005 Woodburn Comprehensive Plan.

(b) Woodburn supports Marion County efforts to investigate countywide alternative transportation, such as inter-city transit, vanpooling, and passenger rail service serving the county and the Willamette Valley region.

H-6.2 Woodburn will implement plans as provided in the Woodburn TSP.

(a) Except where topographical conditions or existing development make this standard impractical, new subdivisions and planned developments should have internal connectivity of at least 8 through streets per mile (roughly every 660 feet) for new development, and sufficient collector and arterial systems for local access.

(b) The TSP shall include a map depicting future street connections for areas to be urbanized. This is especially important in Nodal Development Overlay and Southwest Industrial Reserve overlay areas.

(c) When feasible, the County will utilize standards in the Woodburn TSP and Woodburn Development Ordinance for development that occurs on unincorporated lands within the Woodburn Urban Growth Boundary.

H-6.3 Woodburn will support Marion County efforts to provide transit connections within and between cities. The Woodburn TSP shall include transportation plans for the Woodburn Transit System that is consistent with the population and employment projections in the Woodburn Comprehensive Plan and coordinated with the "preferred alternative" found in the County Framework Plan.

H-6.4 Woodburn should provide for a complementary mix of land uses and transportation systems by providing for mixed use development in the Downtown Development and Conservation (DDC) District, the Mixed Use Village (MUV), and the Nodal Development Overlay (NDO) districts.

H-6.5 Woodburn shall consider traffic calming of through traffic in neighborhoods. Woodburn will coordinate with Marion County in making recommendations for methods and procedures for traffic calming that directly affects a county road, developing recommended best practices for methods, locations, and processes for traffic calming in both existing and new developments.

H-6.6 Woodburn will coordinate with Marion County in planning for freight movement by both rail and truck.

H-6.7 The Woodburn TSP shall include measures to improve the walking and biking environment by providing sidewalks in all new developments and by providing an interconnecting system of pedestrian connections. Designing for a comfortable and practical pedestrian environment is especially important in Downtown Woodburn and within the Nodal Development Overlay.

Goal

H-7. Coordinate with the Oregon Department of Transportation (ODOT) to maintain highway and intersection capacity, safety and functionality by:

(a) Developing and adopting performance standards; and

(b) Prohibiting comprehensive plan amendments that do not meet adopted performance standards.

Policies

H-7.1 The Woodburn TSP shall implement an interchange management plan within the UGB based on potential and substantial adverse impacts to the I-5 Interchange.

(a) Peak hour trip generation estimates and numerical ceilings based on land uses permitted by the 2005 Woodburn Comprehensive Plan shall be determined for each designated sub-area.

(b) The City will coordinate with ODOT in monitoring trip generation impacts for each designated sub-area, considering the cumulative impacts of existing and new development.

(c) Transportation impact studies shall be required for subdivisions and planned developments, and for new commercial, industrial, public and multi-family residential development within designated sub-areas.

(d) Comprehensive Plan amendments that exceed the trip generation ceiling for a designated sub-area shall be prohibited.

(e) Comprehensive Plan amendments from Industrial to Commercial shall be prohibited, regardless of impact, within the SWIR Overlay.

(f) Woodburn shall provide ODOT with copies of transportation impact studies upon request, and as part of the Periodic Review process.

(g) Woodburn shall coordinate with ODOT, DLCD and Marion County to address potential service deficiencies affecting state highway facilities through the Periodic Review process.

H-7.2 The City shall implement medium-term conservation measures to limit access to Highways 214 and 219. Such measures shall include, but shall not be limited to:

(a) Limitations or prohibition on private access within a quarter of mile east and west of interchange ramp terminals;

(b) Access controls on, public road approaches; and

(c) Raised medians from Woodland to Oregon Way along Highways 219 and 214.

H-7.3 To ensure safety and long-range mobility on Highway 99E, the City shall be guided by the following access management objectives:

(a) Ensure that all properties are provided reasonable access to the public street network, including consideration of the economic development needs of each property.

(b) Driveways to commercial businesses on Highway 99E should be designed to allow for safe and comfortable passage, improving existing driveways to comply with ODOT design standards as opportunities arise.

(c) Consider locating business signage immediately adjacent to the downstream side of driveways to improve the ability of drivers to locate them.

(d) Provide convenient accessways for pedestrians and bicycles between the Highway 99E commercial corridor and neighboring residential areas.

(e) Safe and convenient pedestrian walkways should be provided between business entrances and sidewalks along Highway 99E, minimizing conflicts between pedestrians and motor vehicles in parking lots.

(f) Consider prohibiting driveways or restricting turning movements to driveways adjacent to turning pockets at intersections where necessary to maintain safe highway operations.

(g) Seek opportunities to align driveways on opposite sides of roadways to avoid turning conflicts.

(h) Driveways to Highway 99E should maintain adequate intersection sight distance and at a minimum shall maintain safe stopping sight distance along the highway.

(i) Reduce access points over time to move in the direction of meeting ODOT's adopted access management spacing standards for regional highways.

(j) Create shared access points to reduce the overall number of driveways along the Highway 99E corridor. Shared driveways must be supported through the establishment of easements allowing for travel between adjacent properties.

(k) Provide inter-parcel circulation through cross-over easements, frontage or backage roads, or shared parking lots where feasible.

(l) Utilize easements, frontage/backage roads, and lower classified city streets to allow for secondary access to facilitate large truck and emergency service vehicle circulation.

(m) Seek opportunities to enhance the connectivity of the local street system surrounding Highway 99E.

H-7.4 The City will actively participate in developing strategies and solutions to mitigate impacts to property owners that may result from implementing future highway design and planned built improvements.

Downtown Design Intermediate Term Goals and Policies

Policies

K-4.1 Evaluate alternative circulation patterns for traffic flow. Patterns of pedestrian circulation improved through the repair and/or replacement of sidewalks. A means of providing a sense of place within the downtown accomplished by replacing damaged sections of sidewalk with a decorative brick like pattern of surfacing. Pedestrian safety increased by carrying this surfacing pattern across the streets at each intersection thereby creating a different color and texture over which the automobiles travel.

K-4.2 Improve vehicular and safety access into and out of Downtown by improving North and South Front Streets.

K-5.2 Without an adequate system of underground irrigation within the DDCD, plans for landscaping not be as successful. The City will include in its Capital Improvement Programs plans to improve underground irrigation systems along streets and at intersections throughout the DDCD.

K-5.3 Street lighting can be both ornamental and useful in making the downtown safe and attractive. Cooperation from both private and public interests can result in a street lighting plan that both serves a utility and attracts people to shop in and enjoy the downtown.

K-8.2 The development standards and guidelines for the DDC district shall also encourage an enhanced street environment by providing building and streetscape designs of interest to pedestrians, such as locating buildings close to the street with parking areas behind or next to the building, limiting blank walls adjacent to the street, and requiring views into active areas of retail spaces.

Open Space/Parks Goals and Policies

L-1.7 To provide for a continuous public greenway and pathway system, it is the policy of the City to acquire privately-owned segments along Mill Creek, Goose Creek, and Senecal Creek and other stream corridors including the west tributary from Settlemier Park to Parr Road. It is the policy of the City to seek dedication of floodplains and creek corridors for natural areas, neighborhood recreation areas, open space and transportation.

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
OAR 660-012-0045	
(1) Each local government shall amend its land use regulations to implement the TSP.	
(a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use: (A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals; (B) Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards; (C) Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n)[1], consistent with the provisions of 660-012-0065[2]; and (D) Changes in the frequency of transit, rail and airport services.	The WDO lists "Rights-of-way, easements and improvements for streets, water, sanitary sewer, gas, oil, electric and communication lines, stormwater facilities and pump stations" as a use in the three primary zones: Residential Zones (Table2.02A.B12), Commercial Zones (Table 2.03A.A3), Industrial Zones (Table 2.04A.A4). The use is permitted outright, subject to the general development standards of the WDO. Woodburn does not have zones for exclusive farm use, therefore (C) does not apply. **Recommendation:** Existing code provisions meet this TPR requirement. No further changes to the code are recommended.
(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.	
(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or requires interpretation or	WDO 4.01.07 (Consolidated Applications) allows applicants to submit required applications for a single development project as part of one submittal packet.

[1] (h) Climbing and passing lanes within the right of way existing as of July 1, 1987.
(i) Reconstruction or modification of public roads and highways, including the placement of utility facilities overhead and in the subsurface of public roads and highways along the public right of way, but not including the addition of travel lanes, where no removal or displacement of buildings would occur, or no new land parcels result.
(j) Temporary public road and highway detours that will be abandoned and restored to original condition or use at such time as no longer needed.
(k) Minor betterment of existing public road and highway related facilities such as maintenance yards, weigh stations and rest areas, within right of way existing as of July 1, 1987, and contiguous public-owned property utilized to support the operation and maintenance of public roads and highways.

[2] OAR 660-012-0065 (Transportation Improvements on Rural Lands); *(1) This rule identifies transportation facilities, services and improvements which may be permitted on rural lands consistent with Goals 3, 4, 11, and 14 without a goal exception.*

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with 660-012-0050. To facilitate implementation of the TSP, each local government shall amend regulations to provide for consolidated review of land use decisions required to permit a transportation project.	WDO 4.01.14 (Public Notice) outlines City public notice requirements. The City is required to notify affected transportation facility and service providers (City, County, and State) at least 20 days before an initial public hearing (Type III & IV) or decision (Type II) when the application requires a Transportation Impact Analysis. Similarly, the City is required to send notice to the County and State at least 20 days before the initial public hearing for legislative decisions (Type V). **Recommendation:** Existing code provisions meet the TPR requirement. No further changes to the code are recommended.
(2) Local governments shall 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. Such regulations shall include:	
(a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;	WDO 3.01 (Streets) includes provisions and standards for streets. WDO 3.01.05 (Street Layout) requires blocks to be between 200 and 600 feet in length unless specific requirements are met. WDO 3.04 (Vehicular Access) provides procedures and standards for granting vehicular access to public streets. WDO 3.04.01 (Applicability and Permit) provides applicability standards, including how access permits are handled for City, County, and State facilities. WDO 3.04.03 (Driveway Guidelines and Standards) regulates the number, spacing, and type of driveways. Additional driveway standards for the Nodal Overlay District and Southwest Industrial Reserve are provided in WDO 2.05.04 (Nodal Overlay Districts) and WDO 2.05.06 (Southwest Industrial Reserve). WDO 2.05.04 prohibits direct access to public streets and requires access through alleys for anything other than single-family housing. WDO 2.05.06 requires access to be provided consistent with the TSP. **Recommendation:** Existing code provisions meet the TPR requirement. No further changes to the code are recommended.

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
(b) Standards to protect the future operations of roads, transitways and major transit corridors	WDO 2.05.02 (Interchange Management Overlay District) requires a Traffic Impact Analysis (TIA) for all land use applications within the overlay boundary. The TIA is required to meet City and ODOT requirements for approval. This Section also provides additional requirements that apply to Comprehensive Plan Map or Zoning Map amendments within the Interchange Management Area (IMA) that are intended to protect the nearby collectors and arterials as well as reserve the area for targeted employment opportunities. WDO 2.05.04 (Nodal Overlay Districts), WDO 2.05.05 (Riparian Corridor and Wetlands Overlay District), and WDO 2.05.06 (Southwest Industrial Reserve) requires amendments for the removal of the applicable overlay to demonstrate compliance with Goal 12 and Woodburn's Comprehensive Plan. WDO 3.04.05 (Traffic Impact Analysis) requires a TIA when required by the Director for approval of an access permit when 100 or more peak hour trips or 1,000 or more daily trips are estimated to occur within 10 years. WDO 5.04 (Type IV Quasi-Judicial Decisions) provides decision criteria for various types of land use decisions, including amendments to the Comprehensive Plan – and by extension the TSP, which is an element of the Plan. Amendments that significantly affect a transportation facility are required to ensure the allowed land uses are consistent with the function, capacity, and level of service of the facility as identified in the TSP. It goes on to include methods by which consistency can be accomplished. WDO 4.01.17 (Types of Decisions) includes a description for Type V Legislative Decisions. It states the Legislative decisions involve "actions where the City Council amends the City's land use regulations, comprehensive plan, Official Zoning Map or some other component of these documents." The description is similar Type IV Decisions, which also involves actions on comprehensive plan amendments and Official Zoning Map amendments. Decision criteria for Type IV Decisions are provided in WDO 5.04 (described above), however the WDO does not include similar decision criteria for Type V Decisions.

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
	Recommendation: The City may want to consider expanding when a TIA is applicable to include all developments that are expected to reach the trip generation threshold, not just for those where access permits are requested.
(c) Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation;	Woodburn does not currently have, nor has plans to construct, an airport within the City's UGB. Therefore, this requirement does not apply.
(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;	See response to -0045(1)(c).
(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;	WDO 4.01.06 (Conditions of Approval) gives all City decision-making bodies the authority to impose conditions of approval reasonably related to impacts caused by development for all Type II, III, and IV land use decisions. **Recommendation:** Existing code provisions meet the TPR requirement. However, the City should consider identifying transportation-related improvements as potential conditions of approval, including specifically improvements that facilitate pedestrian and bicycle travel (see -0045(3)(c)).
(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of: (A) Land use applications that require public hearings; (B) Subdivision and partition applications; (C)Other applications which affect private access to roads; and (D)Other applications within airport noise corridor and imaginary surfaces which affect airport operations.	See response to -0045(1)(c).
(g) Regulations assuring amendments to land use designations, densities, and design standards are consistent with the functions, capacities and performance standards of facilities identified in the TSP.	See response to -0045(1)(b) and -0060.
(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that	

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.	
(a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park-and-ride lots.	WDO 3.05.03 (Off-street Parking) requires all uses that are required to provide 10 or more off-street parking spaces and residential structures with four or more dwelling or living units to provide a bicycle rack within 50 feet of the main entrance. The required amount of bicycle parking is one space per ten vehicle spaces. **Recommendation:** Existing code provisions meet the TPR requirement. However, to encourage bicycle usage, the City should consider additional requirements for covered bicycle parking.
(b) On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Single-family residential developments shall generally include streets and accessways. Pedestrian circulation through parking lots should generally be provided in the form of accessways. (A) "Neighborhood activity centers" includes, but is not limited to, existing or planned schools, parks, shopping areas, transit stops or employment centers; (B) Bikeways shall be required along arterials and major collectors. sidewalks shall be required along arterials, collectors and most local streets in urban areas except that sidewalks are not required along controlled access roadways, such as freeways; (C) Cul-de-sacs and other dead-end streets may be used as part of a development plan, consistent with the purposes set forth in this section; (D) Local governments shall establish their own standards or criteria for providing streets and accessways consistent with the purposes of this section. Such measures may include but are not limited to: standards for	<u>On-site facilities</u> WDO 2.05.04 (Nodal Overlay Districts), WDO 2.05.06 (Southwest Industrial Reserve) requires new development to create master development plans that include provisions for pedestrian and bicycle connections. WDO 3.07.05 (Standards for Medium Density Residential Buildings) includes provisions for pedestrian circulation to connect to other areas of the site and to other building entrances and adjacent streets. The provisions may or may not be required depending on the type of review (Type I, II, or III) chosen by the applicant. WDO 3.07.08 (Mixed Use Village Zone) requires on-site pedestrian circulation to connect all building entrances with adjacent sidewalks, on-site parking areas, and adjacent uses. WDO 3.07.09 (Nodal Neighborhood Commercial Zone) requires walkway connections between building entrances and the public street WDO 3.09.04 (Conceptual Development Plan) requires planned unit developments to include conceptual drawings showing bicycle and pedestrian circulation. WDO 3.09.06 (Development Standards) encourages

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
spacing of streets or accessways; and standards for excessive out-of-direction travel; (E) Streets and accessways need not be required where one or more of the following conditions exist: (i) Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided; (ii) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or (iii) Where streets or accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.	planned unit developments to enhance pedestrian and bicycle networks consistent with the TSP. <u>Parking Lots</u> WDO 3.05.02 (General Provisions) requires off-street parking areas to construct bumper guards or wheel barriers to prevent vehicles from obstructing access ways and rights-of-way. Other specific requirements related to pedestrian facilities in parking lots are not found. <u>Bikeways and Sidewalks</u> WDO 3.01.04 (Street Cross-Sections) provides standards, shown in Figures 3.01B – 3.01Q, that indicate what street elements are required for arterials, collectors, and access/commercial streets. Bike lanes are required on arterials and are optional on collectors. Bike lanes are not required on arterials and collectors located within the Historic Settlemier Transportation Corridor. Specific segments of Highway 99E have specific design standards found in Figures 3.01O – 3.01Q, all of which require bike lanes. <u>Cul-de-sacs</u> WDO 3.01.05 (Street Layout) limits the maximum length of cul-de-sac streets to 250 feet. The Director may require bikeway and pedestrian facilities to connect from one cul-de-sac to an adjacent cul-de-sac or street. <u>Exceptions</u> WDO 3.01.05 (Street Layout) allows exceptions to the block standards when natural topography, wetlands, significant habitat, bodies of water, or pre-existing development. WDO 5.02.04 (Exceptions to Street Right of Way and Improvement Requirements) and WDO 5.03.03 (Exceptions to Street Right of Way and Improvement Requirements) provide criteria for granting street design standards for Type II and III reviews. **Recommendation:** • The City may want to include pedestrian circulation standards that are applicable to larger parking lots in the Off-street Parking and

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
	Loading requirements (WDO 3.05). The standards should be designed to enhance pedestrian safety and comfort. • Through the TSP update, the City will consider making bike lanes on collectors required, not optional.
(c) Off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle and pedestrian travel, including bicycle ways on arterials and major collectors. [Note: Subsection (d) defines safe and convenient.]	See response to -0045(2)(e).
(e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.	WDO 3.04.03 (Driveway Guidelines and Standards) requires all uses on a lot to have a common or interconnected off-street parking and circulation facility. WDO 3.07.08 (Mixed Use Village Zone) requires on-site pedestrian circulation for all buildings in the zone. Pedestrian circulation standards require walkway to connect all building entrances with sidewalk, on-site parking areas, and off-site adjacent uses. WDO 3.07.09 (Nodal Neighborhood Commercial Zone) site design guidelines require walkway connections between a building entrance the public street. **Recommendation:** On-site pedestrian circulation standards only apply to buildings in the Mixed Use Village Zone. The City should consider applying the same or similar standards to other zones that allow for office park and commercial uses such as the Downtown Development and Conservation Zone.
(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,	The WDO does not currently include standards that specifically support the provision of transit facilities or transit routes. Similarly, the City's current TSP does not identify major stops within the City and therefore does not have

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
on-road parking restrictions and similar facilities, as appropriate; (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. Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that 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; (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. (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;	related standards in the WDO. However, the City's Architectural Design standards provides general requirements or guidelines for building orientation and connectivity that support on-site circulation and connectivity in the following zones: • Non-residential buildings subject to WDO 3.07.06 (Standards for Non-residential Structures in Residential, Commercial, and Public/Semi-public Zones) • All buildings subject to WDO 3.07.08 (Mixed-Use Village Zone) • All buildings subject to WDO 3.07.09 (Nodal Neighborhood Commercial Zone) The design standards for development within the zones listed above promote pedestrian-friendly, human-scaled urban areas and the City does not intend to designate specific pedestrian districts through the TSP update. **Recommendation:** The City should add transit supportive standards that apply to all buildings within the specified distance of major transit stops, where major transit is identified in the updated TSP.
(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools;	The WDO does not currently include standards for providing carpool or vanpool designated parking. **Recommendation:** The City should add standards to WDO 3.05 that specify

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
	the applicability and design of carpool/vanpool parking.
(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;	The WDO does not currently include standards for converting existing parking areas to transit-oriented uses. **Recommendation:** The City may wish to add standards to WDO 3.05 that allow for existing parking areas to be converted to transit-oriented uses.
(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;	The TSP update will identify existing and planned transit routes; the location and design of planned new roadways will be consistent with existing and planned transit service.
(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.	When updating the transit element of the TSP, the City has the opportunity to review existing land uses and consider land use changes that would support the viability of transit on existing or planned routes.
(6) In developing a bicycle and pedestrian circulation plan as required by 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements should provide for more direct, convenient and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e., schools, shopping, transit stops). Specific measures include, for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.	The TSP update will identify improvements to facilitate bicycle and pedestrian trips. This code audit summarizes bicycle and pedestrian improvements that are required through development review and approval, including the following: Walkways between cul-de-sacs and adjacent roads – See response and recommendations related to cul-de-sacs, Section -0045(3)(b). Walkways between buildings – See response and recommendations related to accessways, Section -0045(3)(e). Access between adjacent uses – See response and recommendations related to accessways, Section -0045(3)(e). **Recommendation:** Existing code provisions address this requirement. No changes to the code are recommended.
(7) Local governments shall establish standards for local streets and accessways that minimize pavement width and total ROW consistent with the operational needs of	Local street standards for width and right-of-way are found in WDO 3.01.04 (Street Cross-Sections). Figures 3.01B – 3.01Q provide typical street cross-section standards for arterials, collectors, local streets, cul-de-sacs, and

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Notwithstanding section (1) or (3) of this rule, local street standards adopted to meet this requirement need not be adopted as land use regulations.	alleys. ROW standards for local streets and cul-de-sacs range between 50-60 feet, depending on if parking is provided on one or both sides. Parking is required on one side, or both side if there is multifamily residential housing. Lane width 20 feet for two-way traffic. Standards for local streets also require sidewalks (5 feet) and planter strips (5.5 feet). ROW standards for alleys range between 16-20 feet, depending on if emergency access is required. Standards for sidewalks and planter strips are not included for alleys. Exceptions may be granted for local streets when connecting to existing substandard local streets or when conforming to an approved site development plan which determines it's impractical to connect with existing streets because of a topographical or other existing land conditions. Such site development plans are required to be based on the volume of traffic, capacity for adjoining streets, and need for public convenience or safety. **Recommendation:** The TSP update process will evaluate the cross-sections established in the 2007 TSP to ensure that right-of-way and pavement dimensions are sufficient to serve the operational needs of each roadway functional classification without requiring excessive paved widths. The street standards should clarify pavement width for each cross-section. Standards should be made consistent between the updated TSP and development code.
OAR 660-12-0060	
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.	Amendments to the Comprehensive Plan or Zoning Map are reviewed through a Type IV (quasi-judicial) or a Type V (legislative) decision depending on the scope of the proposed amendment (WDO 4.01.17 – Type of Decisions). A Type IV decision is applicable when the amendments involve closely circumscribed factual circumstances or relatively small number of persons. A Type V decision is applicable when the amendment is "such a size, diversity of ownership or interest as to be legislative in nature under State law."

TPR Requirement	Woodburn Development Ordinance (WDO) Recommendations
	WDO 5.04.02 (Comprehensive Plan Map Change, Owner Initiated) and WDO 5.04.04 (Official Zoning Map Change, Owner Initiated) requires Type IV Comprehensive Plan and land use standard amendments that significantly affect a transportation facility to mitigate for the impacts through prescribed standards. Standards for a Type V amendment to the Comprehensive Plan or Zoning Map are not found in the WDO. Additional amendment standards that are applicable to specific Overlay zones are found in the respective sections. WDO 2.05.02 (Interchange Management Area Overlay District) provides additional standards for Comprehensive Plan and Zoning Map amendments in the Overlay zone. Comprehensive Plan amendments are prohibited from increasing the net commercial land or defined traffic thresholds within the Overlay zone. WDO 2.05.04 (Nodal Overlay Districts) and WDO 2.05.06 (Southwest Industrial Reserve) requires amendments to the Comprehensive Plan or Zoning maps that remove the Overlay must demonstrate consistency with local, regional, and state goals and policies. WDO 2.05.05 (Riparian Corridor and Wetlands Overlay) requires the Oregon Department of State Land be notified of plan and zone amendments that may affect any wetlands, creeks, or waterways. **Recommendation:** Existing code provisions address this requirement. No additional changes to the code are recommended.

TECHNICAL MEMORANDUM #2

Goals, Objectives, and Evaluation Criteria

WOODBURN
Transportation System Plan Update

Date:	February 23, 2018	Project #: 21071
To:	Chris Kerr and Eric Liljequist, City of Woodburn Dan Fricke, Oregon Department of Transportation Technical Advisory Committee (TAC) Citizens Advisory Committee (CAC)	
From:	Matt Hughart and Molly McCormick, Kittelson & Associates, Inc. Darci Rudzinski and CJ Doxsee, Angelo Planning Group	
Project:	Woodburn Transportation System Plan Update	
Subject:	Tech Memo #2: Goals, Objectives, and Evaluation Criteria	

This memorandum presents a draft set of goals and objectives that will be used to review and update Woodburn's Transportation System Plan (TSP). The goals and objectives included in the current Comprehensive Plan and 2005 TSP were used as a basis to develop the goals and objectives with updates that reflect changes in state and local planning requirements as well as changes in demand for active modes of transportation (i.e. walking, biking, and riding transit).

The goals and objectives will be used to guide the development and evaluation of potential solutions to address the needs, selection, and prioritization of preferred solutions for inclusion in the final plan. They will also inform recommendations for policy language that will serve as guidance for future land use decision making, such as approval criteria related zone change and comprehensive plan amendments.

WOODBURN GOALS AND POLICIES BACKGROUND

Woodburn's existing 2005 TSP includes five goals with several corresponding policies. A review of these goals and policies indicate that they were created to focus on the creation of a multimodal transportation network, ensuring the roadway network is adequately sized to meet future demand, improving the safety of the transportation network, and finding funding sources to support the development of projects.

Woodburn's current Comprehensive Plan includes a copy of the 2005 TSP goals and policies as well as an additional two transportation goals – for a total of seven transportation goals – with corresponding policies. These additional two goals and policies focus on coordinating the transportation network with Marion County and ODOT.

A more detailed review of several of the goals and policies indicates that many were created specifically for the development of the 2005 TSP and were ultimately accomplished when the TSP was adopted or are no longer relevant due to subsequent planning efforts or project implementation. As such, a fresh look at the goals and policies has been performed with suggested new language as summarized in Table 1 below.

Table 1 – Review of Existing 2005 TSP Goals and Policies and Suggestion Revisions/New Language

Existing 2005 TSP & Comprehensive Plan Goals and Policies	Proposed TSP Goals and Objectives
TSP Goal 1 Develop a multimodal transportation system that avoids or reduces a reliance on one form of transportation and minimizes energy consumption and air quality impacts.	**Goal 1 – Multimodal Mobility** *Provide a multimodal transportation system that avoids or reduces a reliance on one form of transportation and minimizes energy consumption and air quality impacts.*
Policies	Objectives
• Develop an expanded intracity bus transit system that provides added service and route coverage to improve the mobility and accessibility of the transportation disadvantaged and to attract traditional auto users to use the system.	****Keep as currently written for project objective****
• Develop a plan for providing travel options between Woodburn and Portland or Salem, including intercity bus service and potential bus/carpool park-and-ride facilities.	****Keep as currently written for project objective****
• Develop a bikeway system that provides routes and facilities that allow bicyclists to travel from residential areas to schools, parks, places of employment, and commercial areas. Identify off-street facilities in City greenway and park areas. Ensure all new collector and arterial streets are constructed with bicycle lanes.	• *Develop a comprehensive low stress network of bicycle lanes and routes that link major activity centers such as residential neighborhoods, schools, parks, commercial areas, and employment centers.*
• Identify sidewalk and off-street pathway improvements to improve pedestrian mobility within neighborhoods and between residential areas and schools, parks, places of employment, and commercial areas. Ensure all new collector and arterial streets are constructed with sidewalks.	• *Develop a comprehensive network of sidewalks and off-street pathways that improve pedestrian mobility within neighborhoods and link residential areas to schools, parks, commercial areas, and employment centers.*
	• *Maintain adequate intersection and roadway capacity on the key east-west and north-south arterials.*
TSP Goal 2 Develop a street system which will handle projected year 2020 traffic demands in the Woodburn area, and interconnects residential areas with employment centers, schools, parks, churches, and regional transportation facilities.	**Goal 2 - Connectivity** Provide an interconnected street system that is adequately sized to accommodate existing and projected traffic demands in the Woodburn area.
Policies	Objectives
• Develop an updated roadway functional classification plan for the Woodburn area that reflects the desired function of different roadways, and is consistent with current federal guidelines for the designation of major streets in an urban area.	****This is not necessary as a project objective as the 2005 TSP functional classification plan has essentially accomplished this.****
• Develop a strategy for improving Oregon 219/214, 211, and 99E through Woodburn, including added travel lanes, signalization, and access management.	*Verify and Incorporate the relevant strategies and infrastructure projects from the existing TSP, I-5/OR 214 IAMP, and 99E Refinement Plan.*
• Identify new east-west and north-south collector/minor arterial streets within the City to relieve traffic demands on Oregon 219/214, 211, and 99E, and coordinate with Marion County to construct the street connections needed outside of the urban growth boundary (UGB).	****Keep as currently written for project objective****
• Develop updated street design standards for arterials, collectors, and local streets.	****Keep as currently written for project objective****
• Identify a final strategy for paving currently unimproved streets in the City.	****Keep as currently written for project objective****

Existing 2005 TSP & Comprehensive Plan Goals and Policies	Proposed TSP Goals and Objectives
TSP Goal 3 Develop transportation improvements that address overall traffic safety in the Woodburn area.	**Goal 3 - Safety** *Provide a transportation system that enhances the safety and security of all transportation modes in the Woodburn area.*
Policies	Objectives
• Develop access management strategies for Oregon 219/214, 211, and 99E through Woodburn, particularly focusing on the section of Oregon 214 between Interstate 5 (I-5) and Cascade Drive, and Oregon 99E south of Lincoln Avenue.	****This is not necessary as a project objective as the recent I-5 IAMP and Highway 99E Corridor Plan developed access management improvements.****
• Develop a plan for improving pedestrian and bicycle safety for travel to and from local schools, commercial areas, and major activity centers.	• *Address existing and potential future safety issues by identifying high collision locations and locations near schools or with a history of fatal, severe injury, and/or pedestrian/bicycle-related crashes and developing strategies to address those issues.*
• Identify street and railroad crossings in need of improvement, as well as those that should be closed or relocated.	****Keep as currently written for project objective****
• Develop a plan for designated truck routes through the City, and a plan to handle truck and rail hazardous cargoes	****Keep as currently written for project objective****
TSP Goal 4 Develop a set of reliable funding sources that can be applied to fund future transportation improvements in the Woodburn area.	**Goal 4 – Strategic Investment** Provide a financially sustainable transportation system through responsible stewardship of assets and financial resources.
Polices	Objectives
• Evaluate the feasibility of the full range of funding mechanisms for transportation improvements.	• *Identify new and innovative funding sources for transportation improvements*
	• *Preserve and maintain the existing transportation system assets to extend their useful life.*
TSP Goal 5 Develop amendments to City land use standards and ordinances to reduce travel demand and promote use of modes of transportation other than the automobile.	**Goal 5 – Land Use and Transportation Integration** Review and update land use standards and ordinances to create a balanced built environment where existing and planned land uses are supported by an efficient multi-modal transportation system.
Polices	Objectives
• Identify a range of potential Transportation Demand Management (TDM) strategies that can be used to improve the efficiency of the transportation system by shifting single-occupant vehicle trips to other modes and reducing automobile reliance at times of peak traffic volumes.	****Keep as currently written for project objective****
• Identify revisions to the Woodburn Zoning Ordinance for compliance with the Transportation Planning Rule	****Keep as currently written for project objective****
Comprehensive Plan Goal H-6 Coordinate with Marion County in planning for a safe and efficient county-wide transportation system by: (a) Encouraging use of alternative modes of transportation including mass transit, bicycling, walking and carpooling; and (b) Addressing transportation needs appropriate to both urban and rural areas throughout the county.	**Goal 6** Develop a transportation system that is consistent with the City's adopted comprehensive plan and adopted plans of state, regional, and other local jurisdictions.
Polices	Objectives
H-6.2 Woodburn will implement plans as provided in the Woodburn TSP. (a) Except where topographical conditions or existing development make this standard impractical, new subdivisions and planned developments should have internal connectivity of at least 8 through streets per mile (roughly every 660 feet) for new development, and sufficient collector and arterial systems for local access. (b) The TSP shall include a map depicting future street connections for areas to be urbanized. This is especially important in Nodal Development Overlay and Southwest Industrial Reserve overlay areas. (c) When feasible, the County will utilize standards in the Woodburn TSP and Woodburn Development Ordinance for	Ensure consistency with State, regional, and local planning rules and regulations. Incorporate projects identified in other state, regional, or local plans Coordinate land use, financial, and environmental planning to prioritize strategic transportation investments

Existing 2005 TSP & Comprehensive Plan Goals and Policies	Proposed TSP Goals and Objectives
development that occurs on unincorporated lands within the Woodburn Urban Growth Boundary.	
H-6.3 Woodburn will support Marion County efforts to provide transit connections within and between cities. The Woodburn TSP shall include transportation plans for the Woodburn Transit System that is consistent with the population and employment projections in the Woodburn Comprehensive Plan and coordinated with the "preferred alternative" found in the County Framework Plan.	****Keep as currently written for project objective****
H-6.4 Woodburn should provide for a complementary mix of land uses and transportation systems by providing for mixed use development in the Downtown Development and Conservation (DDC) District, the Mixed Use Village (MUV), and the Nodal Development Overlay (NDO) districts.	****This is not necessary as a project objective as existing Woodburn planning documents have been updated to reflect this information.****
H-6.5 Woodburn shall consider traffic calming of through traffic in neighborhoods. Woodburn will coordinate with Marion County in making recommendations for methods and procedures for traffic calming that directly affects a county road, developing recommended best practices for methods, locations, and processes for traffic calming in both existing and new developments.	*** See objective under Goal 5.***
H-6.6 Woodburn will coordinate with Marion County in planning for freight movement by both rail and truck.	****Keep as currently written for project objective****
H-6.7 The Woodburn TSP shall include measures to improve the walking and biking environment by providing sidewalks in all new developments and by providing an interconnecting system of pedestrian connections. Designing for a comfortable and practical pedestrian environment is especially important in Downtown Woodburn and within the Nodal Development Overlay.	****This is not necessary as a project objective as existing Woodburn planning documents have been updated to reflect this information.****
Comprehensive Plan Goal H-7 Coordinate with the Oregon Department of Transportation (ODOT) to maintain highway and intersection capacity, safety and functionality by: (a) Developing and adopting performance standards; and (b) Prohibiting comprehensive plan amendments that do not meet adopted performance standards.	See Goal 6
H-7.1 The Woodburn TSP shall implement an interchange management plan within the UGB based on potential and substantial adverse impacts to the I-5 Interchange. (a) Peak hour trip generation estimates and numerical ceilings based on land uses permitted by the 2005 Woodburn Comprehensive Plan shall be determined for each designated sub-area. (b) The City will coordinate with ODOT in monitoring trip generation impacts for each designated sub-area, considering the cumulative impacts of existing and new development. (c) Transportation impact studies shall be required for subdivisions and planned developments, and for new commercial, industrial, public and multi-family residential development within designated sub-areas. (d) Comprehensive Plan amendments that exceed the trip generation ceiling for a designated sub-area shall be prohibited. (e) Comprehensive Plan amendments from Industrial to Commercial shall be prohibited, regardless of impact, within the SWIR Overlay. (f) Woodburn shall provide ODOT with copies of transportation impact studies upon request, and as part of the Periodic Review process. (g) Woodburn shall coordinate with ODOT, DLCD and Marion County to address potential service deficiencies affecting state highway facilities through the Periodic Review process.	****This is not necessary as a project objective as the recent I-5 IAMP and Highway 99E Corridor Plan developed access management improvements.****
H-7.2 The City shall implement medium-term conservation measures to limit access to Highways 214 and 219. Such measures shall include, but shall not be limited to:	

Existing 2005 TSP & Comprehensive Plan Goals and Policies	Proposed TSP Goals and Objectives
(a) Limitations or prohibition on private access within a quarter of mile east and west of interchange ramp terminals; (b) Access controls on, public road approaches; and (c) Raised medians from Woodland to Oregon Way along Highways 219 and 214.	
H-7.3 To ensure safety and long-range mobility on Highway 99E, the City shall be guided by the following access management objectives: (a) Ensure that all properties are provided reasonable access to the public street network, including consideration of the economic development needs of each property. (b) Driveways to commercial businesses on Highway 99E should be designed to allow for safe and comfortable passage, improving existing driveways to comply with ODOT design standards as opportunities arise. (c) Consider locating business signage immediately adjacent to the downstream side of driveways to improve the ability of drivers to locate them. (d) Provide convenient accessways for pedestrians and bicycles between the Highway 99E commercial corridor and neighboring residential areas. (e) Safe and convenient pedestrian walkways should be provided between business entrances and sidewalks along Highway 99E, minimizing conflicts between pedestrians and motor vehicles in parking lots. (f) Consider prohibiting driveways or restricting turning movements to driveways adjacent to turning pockets at intersections where necessary to maintain safe highway operations. (g) Seek opportunities to align driveways on opposite sides of roadways to avoid turning conflicts. (h) Driveways to Highway 99E should maintain adequate intersection sight distance and at a minimum shall maintain safe stopping sight distance along the highway. (i) Reduce access points over time to move in the direction of meeting ODOT's adopted access management spacing standards for regional highways. (j) Create shared access points to reduce the overall number of driveways along the Highway 99E corridor. Shared driveways must be supported through the establishment of easements allowing for travel between adjacent properties. (k) Provide inter-parcel circulation through cross-over easements, frontage or backage roads, or shared parking lots where feasible. (l) Utilize easements, frontage/backage roads, and lower classified city streets to allow for secondary access to facilitate large truck and emergency service vehicle circulation. (m) Seek opportunities to enhance the connectivity of the local street system surrounding Highway 99E.	
H-7.4 The City will actively participate in developing strategies and solutions to mitigate impacts to property owners that may result from implementing future highway design and planned built improvements.	

PROPOSED EVALUATION CRITERIA

The proposed evaluation criteria are based on the proposed goals and policies. A qualitative process using the evaluation criteria will be used to evaluate potential modal solutions and prioritize projects developed through the TSP update. The rating method used to evaluate the alternatives is described below.

- Most Desirable: The concept addresses the criterion and/or makes substantial improvements in the criteria category. (+1)
- No Effect: The criterion does not apply to the concept or the concept has no influence on the criteria. (0)
- Least Desirable: The concept does not support the intent of and/or negatively impacts the criteria category. (-1)

At this level of screening, the criteria will not be weighted; the ratings will be used to inform discussions about the benefits and tradeoffs of each alternative. Table 1 presents the evaluation criteria that will be used to qualitatively evaluate the solutions developed through the TSP update.

Objective	Evaluation Criteria	Evaluation Score
Goal 1 *Provide a multimodal transportation system that avoids or reduces a reliance on one form of transportation and minimizes energy consumption and air quality impacts.*		
Develop an expanded intracity bus transit system	Project will expand and improve the bus transit system	+1
	Project will have no impact to the bus transit system	0
	Project will negatively impact the bus transit system	-1
Develop a comprehensive system of bicycle facilities	Project will contribute to a comprehensive bicycle system	+1
	Project will not contribute to a comprehensive bicycle system	0
	Project will impede a comprehensive bicycle system	-1
Develop a comprehensive system of pedestrian facilities	Project will contribute to a comprehensive pedestrian system	+1
	Project will not contribute to a comprehensive pedestrian system	0
	Project will impede a comprehensive pedestrian system	-1
Goal 2 *Provide an interconnected street system that is adequately sized to accommodate existing and projected traffic demands in the Woodburn area.*		
Develop new east-west and/or north-south collector/minor arterial streets within the City	Project will result in new east-west and/or north-south connections	+1
	Project will have no impact on east-west and/or north-south connections	0
	Project will result in increased traffic demands on OR 219/214 and 99E	-1
Goal 3 Provide a transportation system that enhances the safety and security of all transportation modes in the Woodburn area.		
Address existing and potential future safety issues.	Project will address existing or potential future safety issue	+1
	Project will have no impact on an existing or potential future safety issue	0
	Project will worsen existing or potential future safety issue	-1
Identify street and railroad crossings in need of improvement, as well as those that should be closed or relocated.	Project will lead to the improvement, closure, or relocation of a rail crossing	+1
	Project will have no impact on rail crossings	0
	Project will not improve rail crossings or will result in a new rail crossing	-1
Develop a plan for designated truck routes through the City, and a plan to handle truck and rail hazardous cargoes	Project will enhance truck and freight movements	+1
	Project will have no impact on truck and freight movements	0
	Project will worsen truck and freight movements	-1

Goal 4 Provide a financially sustainable transportation system through responsible stewardship of assets and financial resources.		
Identify new and innovative funding sources for transportation improvements	Project is eligible for new and/or innovative funding	+1
	Project may not be eligible for new and/or innovative funding	0
	Project is not eligible for new and/or innovative funding	-1
Preserve and maintain the existing transportation system assets to extend their useful life	Project will preserve and maintain the existing transportation system	+1
	Project will not impact the existing transportation system	0
	Project will have a negative impact on the existing transportation system	-1
Goal 5 – Land Use and Transportation Integration Review and update land use standards and ordinances to create a balanced built environment where existing and planned land uses are supported by an efficient multi-modal transportation system.		

WOODBURN
Transportation System Plan Update

TECHNICAL MEMORANDUM #3

Existing Conditions Inventory and Analysis

Date:	March 29, 2019	Project #: 21071.3
To:	Chris Kerr & Eric Liljequist, City of Woodburn Dan Fricke, Oregon Department of Transportation, Region 2 Technical Advisory Committee and Community Advisory Committee	
From:	Matt Hughart and Molly McCormick, Kittleson & Associates, Inc. Darci Rudzinski and Clinton “CJ” Doxsee, Angelo Planning Group	
Subject:	Technical Memo #3: Existing Conditions Inventory and Analysis (Subtask 2.3)	

This memorandum documents the existing transportation network within the City of Woodburn and its urban growth boundary. Figure 1 illustrates the city boundary. The information presented in this memorandum will serve as a baseline for evaluating transportation system needs and identifying potential solutions for the Transportation System Plan (TSP) update. The information is based on an inventory of existing transportation facilities, discussions with City and Oregon Department of Transportation (ODOT) staff, and input from the project advisory committees and the general public.

Consistent with Oregon Administrative Rule (OAR) 660-012-0020, this inventory summarizes the characteristics, usage, performance, gaps, and deficiencies of the following transportation modes serving the City of Woodburn:

- Air System
- Bicycle System
- Marine System
- Pedestrian System
- Pipeline System
- Rail System
- Roadway System
- Transit System
- Truck Freight System
- Transportation System Management and Operations (TSMO)
- Transportation Demand Management (TDM)

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CITY BACKGROUND AND HISTORY

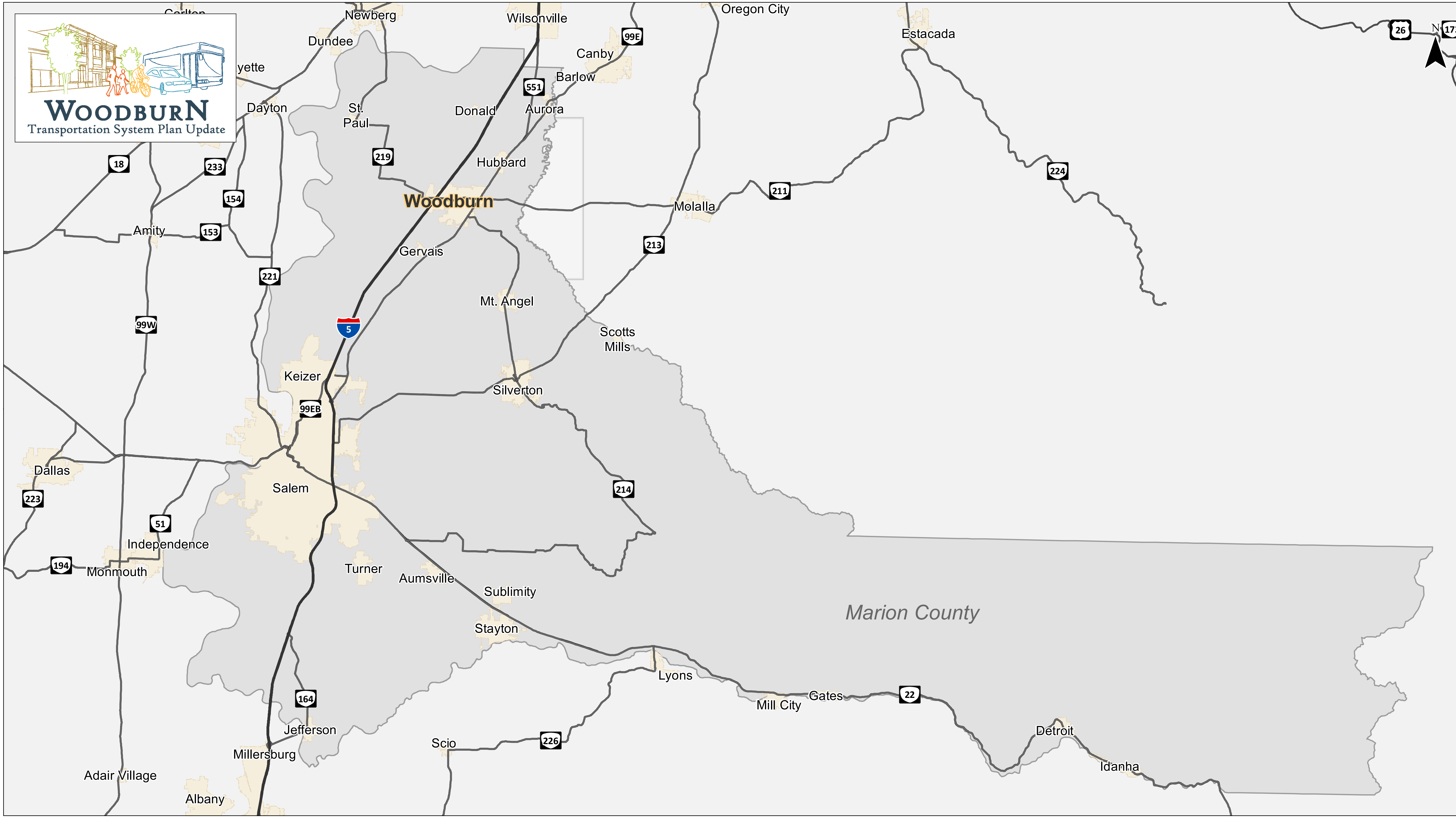
The City of Woodburn lies in the Willamette Valley in Marion County, approximately 30 miles south of Portland and approximately 20 miles north of Salem. As seen in Figure 1, several regional highways provide connections to other parts of the state, including Interstate-5, OR 211, OR 214, OR 219, and OR99E. Initially starting as land purchased for a tree nursery, construction of the railroad led to rapid development and incorporation as a city in 1889. Further growth occurred as additional tracks and I-5 were constructed. Based on information from the Portland State University Population Research Center (PRC), Woodburn has an estimated 2016 population of 24,795 people, comprising 7.4% of Marion County's 333,950 residents.

The community is known for its tourism, local events, and young and diverse population. Big attractions include the Woodburn Premium Outlets, several golf courses, Tulip Festival, Fiesta Mexicana, and the Woodburn Dragstrip with over 4.5 million visitors to the area each year.

LANDS AND POPULATION CHARACTERISTICS

Planning for a transportation system that meets the city's goals and objectives requires a comprehensive understanding of land uses, population characteristics, and activity centers/destinations (such as schools, the library, City Hall, Community Center, parks, shopping centers, and other attractions). Information about Woodburn's lands and population inventory has been included in *Attachment A* with a focus on the following specific information:

- Comprehensive Plan and Zoning summary
    - Comprehensive Plan Map
    - Zoning Map
    - Overlay Districts Map
- Vacant and Redevelopable Land summary
    - Vacant and Redevelopable Land Map
    - Opportunity Sites Map (Woodburn Target Industry Analysis, ECONorthwest, 2016)
- Natural Resource and Environmental Barriers summary
    - Riparian Corridor and Wetlands Map
- Activity Centers Summary
    - Activity Centers Map
- Historic and Projected Population Growth
- Environmental Justice summary



Regional Map
Woodburn, Oregon

Figure
1

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

WOODBURN'S EXISTING TRANSPORTATION INFRASTRUCTURE

Air System

There are no airports located within the city limits. The closest airports include the Aurora State Airport (classified as a Urban General Aviation Airport) located approximately 8 miles to the north via OR 99E and OR 551 and the Mulino Airport located approximately 14 miles to the northeast via OR 211 and OR 213.

Bicycle System

The bicycle system within Woodburn consists of on-street bike lanes and shared roadways as well as a select number of multi-use pathways. These facilities provide local residents with the ability to access transit as well as local retail, commercial, recreational, and other land uses within Woodburn and neighboring cities by bike.

In order to assess the adequacy of bicycle facilities in Woodburn, a Geographic Information System (GIS) data inventory was created to reflect recent aerial imagery of bike lanes and other bicycle facilities along the city's major arterial, minor arterial, service collector, and access streets. Essential destinations and activity centers were identified in *Attachment A* to determine possible bicycle trip generators and to help prioritize potential improvements to the bicycle system. Figure 2 shows the existing bicycle facilities within Woodburn.

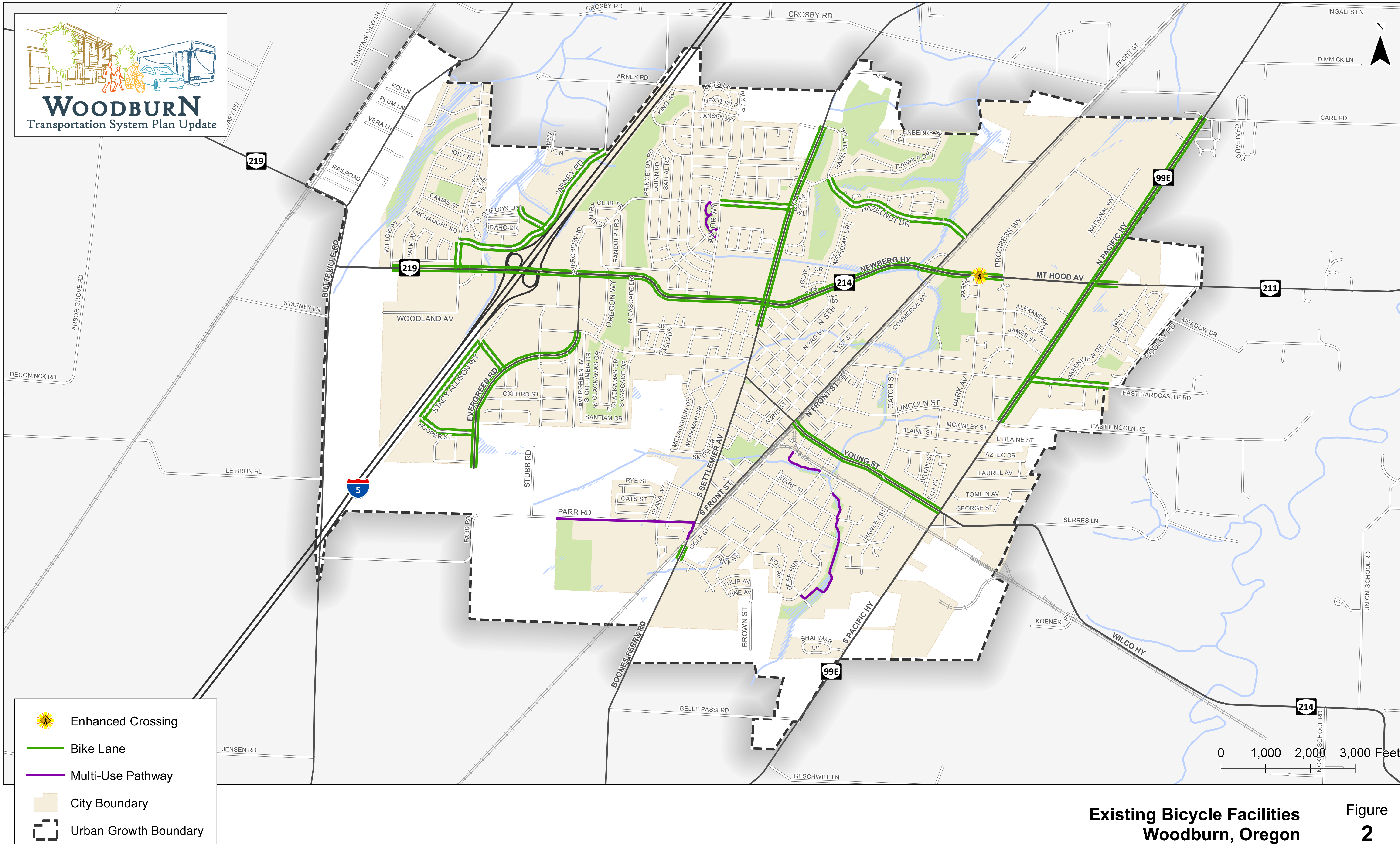
Bicycle Facilities

Bike lanes

Bike lanes are dedicated portions of the roadway that are striped and allocated for bicycle travel. On-street bike lanes are currently provided along several major arterial, minor arterial, service collector, and access streets within the city including segments of OR 219/OR 214, Evergreen Road, Stacy Allison Way, Center Street, Country Club Road, Boones Ferry Road/Settlemier Avenue, Young Street, OR 99E, and Hardcastle Avenue.

Separated Bike Path

Separated bike lanes are bike lanes that have a buffer between the travel lane and the bike lane, which can include treatments such as planters, landscape strips, and striping. An off-street separated bike lane is provided along the south side of Parr Road, connecting Settlemier Avenue to Heritage Elementary School and Valor Middle School.



Existing Bicycle Facilities
Woodburn, Oregon

Figure 2

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

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Bicycle Activity

Bicycle counts were conducted at the study intersections in September and October 2017. 16-hour counts were conducted on a typical mid-week day when school was in session. All of the counts include the total number of bicyclists that entered the intersections in 15-minute intervals. The bicycle counts show a relatively low level of bicycle activity at the study intersections in general. It should be noted that while the peak hour for vehicular traffic typically occurs between 4:00 to 6:00 p.m., the peak hour for bicycle activity near schools and other activity centers typically occurs earlier in the day. The bicycle count data is shown in Table 1.

Table 1: Bicycle Crossing Volumes at Study Intersections

Map ID	Intersection	North/South Bicycle Volume	East/West Bicycle Volume	Bicycle Peak Hour
1	Butteville Road/OR 219	2	0	1:00 to 2:00 p.m.
2	OR 219/Woodland Avenue	0	1	6:00 to 7:00 p.m.
3	OR 214/I-5 Southbound Ramp	0	1	4:30 to 5:30 p.m.
4	OR 214/I-5 Northbound Ramp	0	1	4:30 to 5:30 p.m.
5	OR 214/Evergreen Road	0	4	5:00 to 6:00 p.m.
6	OR 214/Oregon Way/Country Club Road	0	2	10:30 to 11:30 a.m.
7	Cascade Drive/OR 214	1	1	10:00 to 11:00 a.m.
8	OR 214/Boones Ferry Road NE	3	1	3:15 to 4:15 p.m.
9	OR 214/Meridian Drive/5th Street	3	1	12:45 to 1:45 p.m.
10	Front Street/OR 214	1	1	5:15 to 6:15 p.m.
11	Park Avenue/OR 214	1	5	2:15 to 3:15 p.m.
12	OR 214/OR 211/OR 99E	1	0	4:00 to 5:00 p.m.
13	Boones Ferry Road NE/Crosby Road	2	0	10:15 to 11:15 a.m.
14	Hardcastle Avenue/Front Street	4	3	12:30 to 1:30 p.m.
15	Lincoln Street/Front Street	2	5	2:00 to 3:00 p.m.
16	Garfield Street/Young Street/Front Street	5	0	4:30 to 5:30 p.m.
17	Cleveland Street/Front Street	5	1	12:15 to 1:15 p.m.
18	Parr Road/Settlemier Avenue	4	2	11:45 a.m. to 12:45 p.m.
19	OR 99E/Hardcastle Avenue	3	1	2:00 to 3:00 p.m.
20	OR 99E/Lincoln Street	3	1	2:30 to 3:30 p.m.
21	OR 99E/Young Street	0	5	11:45 a.m. to 12:45 p.m.
22	OR 99E/Cleveland Street	4	0	1:45 to 2:45 p.m.

As shown in Table 1, the highest bicycle crossing volumes were observed at intersections located along Front Street near retail and commercial land uses.

Bicycle Level of Traffic Stress Analysis

The bicycle facilities located along the city's major arterial, minor arterial, service collector, and access streets were evaluated in an effort to identify potential issues that could be addressed as part of the TSP update. The Oregon Department of Transportation (ODOT) Analysis Procedures Manual (APM) provides a methodology for evaluating bicycle facilities within urban and rural environments called

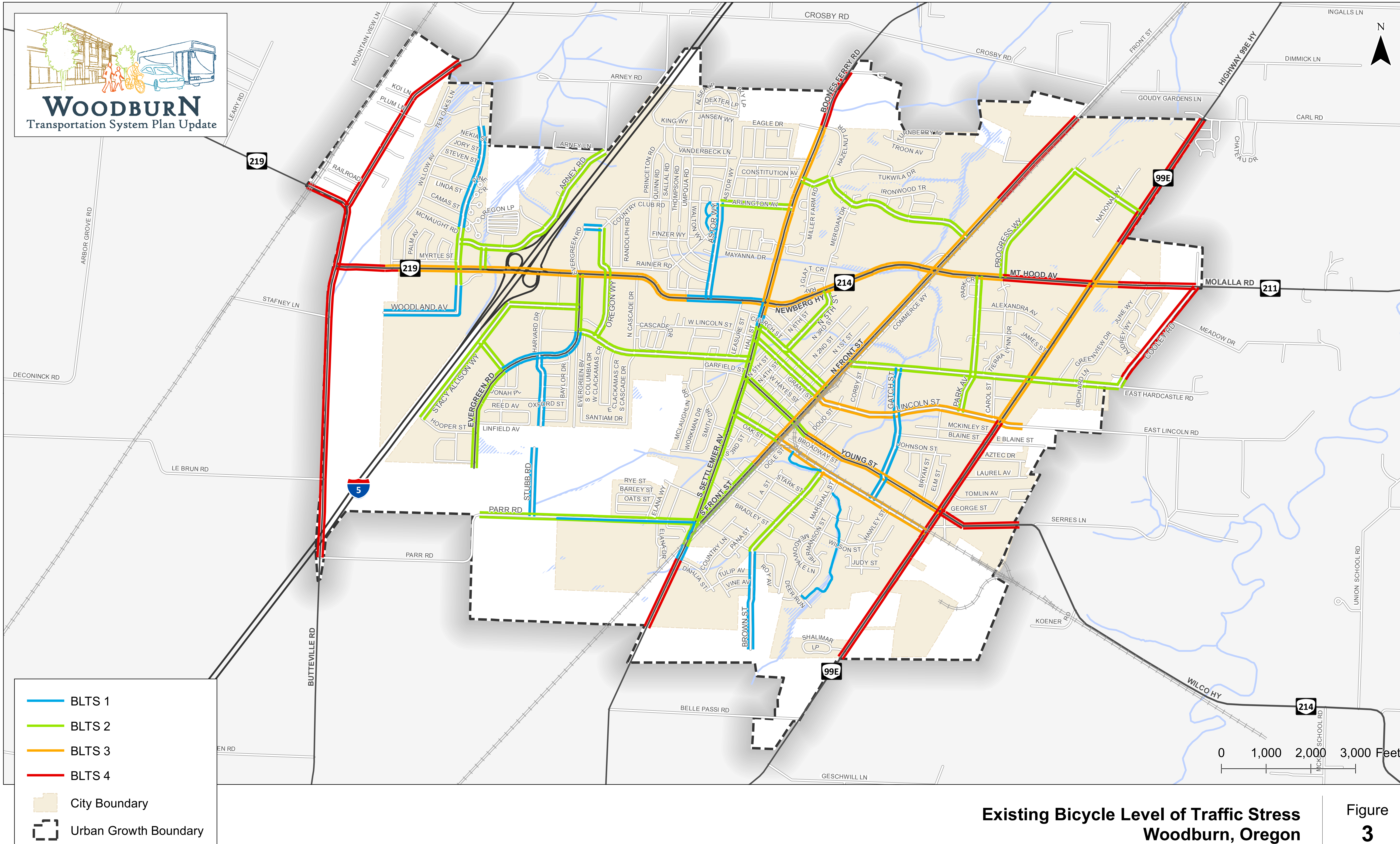
Bicycle Level of Traffic Stress (BLTS). As applied by ODOT, this methodology classifies four levels of traffic stress that a bicyclist can experience on the roadway, ranging from BLTS 1 (little traffic stress) to BLTS 4 (high traffic stress). A road segment that is rated BLTS 1 generally has low traffic volumes and travel speeds and is suitable for all cyclists, including children. A road segment that is rated BLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most cyclists. Per the APM, BLTS 2 is considered a reasonable target for bicycle facilities due to its acceptability with the majority of cyclists.

The BLTS score is determined based on the speed of the roadway, the number of travel lanes per direction, the presence and width of an on-street bicycle lane and/or adjacent parking lane, and several other factors. Figure 3 illustrates the results of the BLTS analysis for Woodburn's major arterial, minor arterial, service collector, and access streets. The BLTS calculations are summarized in *Attachment B*.

A majority of the segments rated BLTS 3 have striped bicycle lanes; however, the bike lanes are too narrow for roadways conditions. In order for these segments to be rated BLTS 2, the striped bicycle lanes would need to be widened/buffered to 7 feet and/or the posted speed limits would need to be as low as 30 mph. Other segments rated BLTS 3 were evaluated as shared roadways. In order for these segments to be rated BLTS 2, the speed would need to be as low as 25 mph.

A majority of the segments rated BLTS 4 occur on segments without bike lanes and which were analyzed as shared roadways. In order for these segments to be rated BLTS 2, the speed would need to be as low as 25 mph. Several segments with striped bike lanes were rated BLTS 4; all of which are located on OR 99E. In order for these segments to be rated BLTS 2, the striped bicycle lanes would need to be widened/buffered to 7 feet and/or the posted speed limits would need to be as low as 30 mph. Enhanced facilities, such as separated bike facilities or multi-use paths, may also be needed in some areas where traffic volumes and/or travel speeds are high.

It should also be noted that a majority of the shared roadway segments that were rated BLTS 2 could include signage and potentially striping to remind motorists to share the road. The signing and striping can also provide important wayfinding for cyclists to inform them of the preferred bicycle routes.



Existing Bicycle Level of Traffic Stress
Woodburn, Oregon

Figure
3

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn

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Existing Gaps and Deficiencies

Streets with no bike lanes or intermittent bike lanes force bicyclists to share the travel lane with motor vehicles or use the shoulder if available. In many cases, this is not a desirable option for bicyclists due to narrow lane widths or uneven pavement conditions. Adequate bicycle facilities should be provided to allow for safe travel between neighborhoods and essential destinations. The following provides a summary of the existing gaps and deficiencies on the City's major arterial, minor arterial, and service collector streets:

- OR 219 from Butteville Road to Willow Avenue
- OR 214 from Progress Way to OR 99E
- OR 211 from east of OR 99E to east UGB limits
- Butteville Road from south UGB limits to north UGB limits
- Stacy Allison Way from Center Street to Evergreen Road
- Evergreen Road from Hayes Street to OR 214
- Hayes Street from Evergreen Road to Settlemier Avenue
- Parr Road from east UGB limits to Settlemier Avenue
- Boones Ferry Road from Hazelnut Drive to north UGB limits
- Settlemier Avenue from south UGB limits Harrison Street (with an exception with a short segment of striped bike lanes just south of the railroad crossing)
- Harrison Street from Settlemier Avenue to Front Street
- Lincoln Street from Settlemier Avenue to east UGB limits
- Cleveland Street from Settlemier Avenue to OR 99E
- Front Street from Settlemier Avenue to north UGB limits
- Progress Way from OR 214 to Industrial Avenue
- Industrial Avenue from Progress way to OR 99E
- Cooley Road from Hardcastle Avenue to OR 211
- Hardcastle Avenue from Front Street to Cooley Road
- Young Street from OR 99E to east UGB limits
- Brown Street from end of road to Cleveland Street
- OR 99E from south UGB limits to Lincoln Road

ROADWAY SYSTEM

The roadway system within Woodburn includes private streets, city streets, state highways, and an interstate freeway. These types of facilities provide residents with the ability to access retail, commercial, recreational, and other land uses within Woodburn and neighboring cities by vehicle. This section describes how the system has been developed to date and provides a more detailed review of how it is used and operated.

Jurisdiction

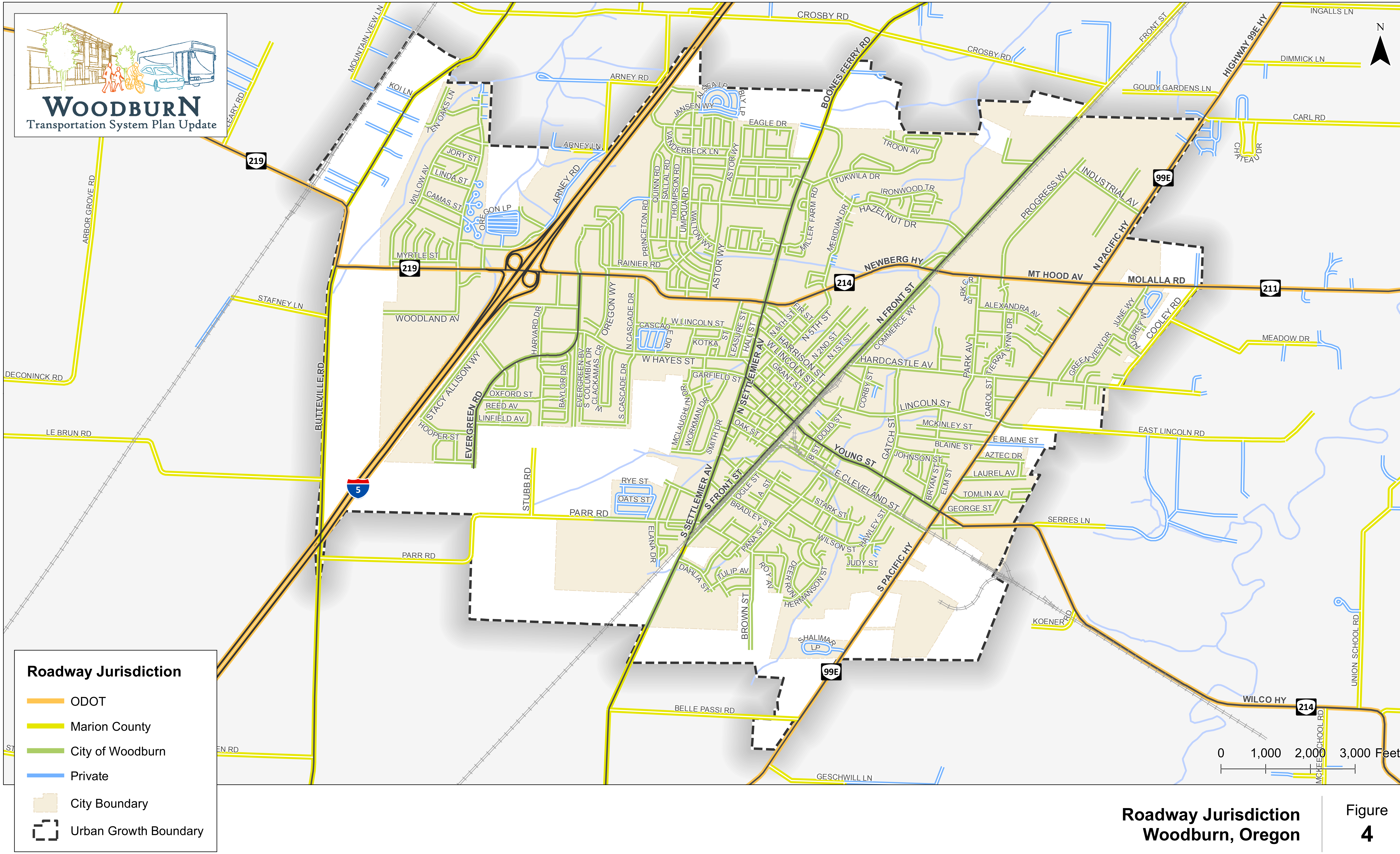
Streets within Woodburn are owned and operated by the City of Woodburn, Marion County, and ODOT. Each jurisdiction is responsible for determining the functional classification of the streets, defining major design and multimodal features, and approving construction and access permits. Coordination is required among the jurisdictions to ensure that the streets are planned, operated, maintained, and improved to safely meet public needs. Figure 4 illustrates the jurisdiction (ownership and maintenance responsibilities) of streets within Woodburn. As shown, I-5, OR 219, OR 214, OR 211, and OR 99E are under the jurisdiction of ODOT along with the I-5 on- and off-ramps. All remaining streets within the city limits are under the jurisdiction of the City of Woodburn. With the exception of those streets that are under ODOT jurisdiction, Marion County has jurisdiction over streets that are outside the city limits but within the UGB.

Functional Classification

A street’s functional classification defines its role in the transportation system and reflects desired operational and design characteristics such as right-of-way requirements, pavement widths, pedestrian and bicycle features, and driveway (access) spacing standards.

Figure 5 illustrates the functional classification of streets within Woodburn, which includes the following designations as defined by the current Woodburn TSP:

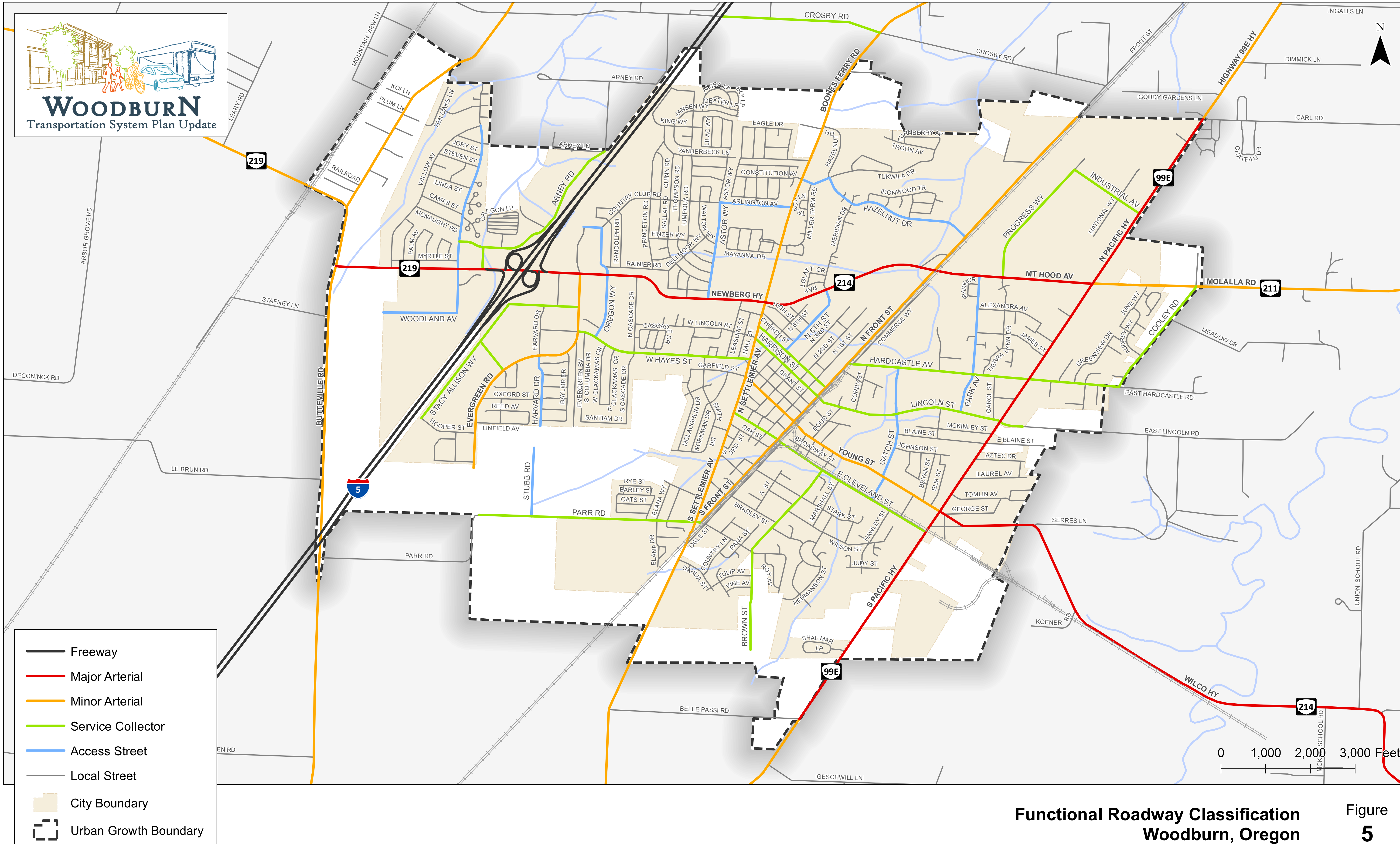
- Freeways – The primary function of the interstate is mobility, because freeways connect major cities, regions within Oregon, and other states, and serve as major freight routes. The freeway should provide “safe and efficient high-speed continuous flow.” The freeway has full access control with access limited to the interchange. Only motorized vehicle traffic is served.
- Major Arterials – Primary functions are to serve local and through traffic as it enters and leaves the urban area, connect Woodburn with other urban centers and regions, and provide connections to major activity centers within eh UGB. Emphasis should be on traffic flow, pedestrian and bicycle movements. On-street bicycle lanes and sidewalks should be provided.



Roadway Jurisdiction
Woodburn, Oregon

Figure
4

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation



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Functional Roadway Classification
Woodburn, Oregon

Figure
5

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

- Minor Arterials – Primary functions are to connection major activity centers and neighborhoods within the UGB and to support the major arterial system. Minor arterials should have a higher degree of access, shorter trip lengths, lesser traffic volumes, and lower travel speeds than major arterials. Like major arterials, emphasis should be on traffic flow, pedestrian and bicycle movements. On-street bicycle lanes and sidewalks should be provided.
- Service Collector - Primary function is to provide connections between neighborhoods and major activity centers and the arterial street system. Some degree of access is provided to adjacent properties, while maintaining circulation and mobility for all users. Service collectors carry lower traffic volumes at slower speeds than major and minor arterials. On-street bicycle lanes and sidewalks should be provided.
- Access Streets – Primary function is to connect residential neighborhoods with service collectors or arterials. On-street parking and access to adjacent properties is prevalent. Slower speeds should be provided to ensure community livability and safety for pedestrians and cyclists. In many cases, cyclists can “Share the road” with motor vehicles because of low traffic volumes and speeds. Sidewalks or pathways should be provided for pedestrians.
- Local Streets – Primary function is to provide direct access to adjacent land uses. Short roadway distances, slow speeds, and low traffic volumes characterize local streets. Cyclists can share the road with motor vehicles. Sidewalks or pathways should be provided for pedestrians.

Table 2 summarizes the functional classifications of the major arterial, minor arterial, and service collector streets within Woodburn and identifies the overlapping ownership/maintenance and jurisdictional relationships that exist.

The functional classifications used in local TSPs should be consistent with other regional planning efforts. As shown in Table 2, there are several streets that currently have conflicting classifications.

National Highway System (NHS)

The National Highway System (NHS)is designated by the US Department of Transportation Federal Highway Administration and includes roadways that are “important to the nation’s economy, defense, and mobility.”[1] Within Woodburn, I-5 is part of the Eisenhower Interstate System and OR 219, OR 214, and OR 99E are classified as MAP-21 NHS Principal Arterials.

[1] https://www.fhwa.dot.gov/planning/national_highway_system/

Table 2: Functional Classification Comparison by Jurisdiction

Roadway	Jurisdiction	Functional Classification			Consistent between Jurisdictions?
		Woodburn	Marion County	Federal	
Butteville Road (north of OR 219 and south of OR 219)	County	Minor Arterial	Major Collector	Major Collector	No
Butteville Road (segment where aligned with OR 219)	ODOT	Minor Arterial		Minor Arterial	Yes
OR 219 (Butteville Road to Woodland Avenue)	ODOT	Major Arterial		Minor Arterial	No
OR 219 (Woodland Avenue to I-5)	ODOT	Major Arterial		Principal Arterial	No
Woodland Avenue	City	Access Street		Major Collector	No
Arney Road	City/Private	Service Collector		Major Collector	No
I-5	ODOT	Freeway		Interstate	Yes
OR 214 (I-5 to OR 99E)	ODOT	Major Arterial		Principal Arterial	Yes
OR 214 (OR 99E to UGB east limits)	ODOT	Major Arterial		Minor Arterial	No
Stacy Allison Way	City	Service Collector		Local	No
Center Street	City	Service Collector		Local	No
Evergreen Road (OR 219 to Boean Lane)	City	Minor Arterial		Major Collector	No
Evergreen Road (Boean Lane to end of road)	City	Minor Arterial		Local	No
Harvard Drive	City	Access Street		Local	No
Stubb Road	County	Access Street	No Designation	Local	No
Parr Road	County/City	Service Collector	Major Collector	Major Collector	No
Hayes Street	City	Service Collector		Major Collector	No
Oregon Way	City	Access Street		Major Collector	No
Astor Way	City	Access Street		Major Collector	No
Country Club Road	City	Access Street		Major Collector	No
Boones Ferry Road/Settlemier Avenue (north of Parr Road)	County/City	Minor Arterial	Arterial	Minor Arterial	Yes
Boones Ferry Road/Settlemier Avenue (south of Parr Road)	County/City	Minor Arterial	Major Collector	Minor Arterial	Yes
Tukwila Drive	City	Access Street		Major Collector	No
Hazelnut Drive	City	Access Street		Major Collector	No
5th Street	City	Access Street		Major Collector	No
Harrison Street	City	Service Collector		Major Collector	No
Lincoln Street	County/City	Service Collector	Local	Major Collector	No
Garfield Street	City	Minor Arterial		Minor Arterial	Yes
Young Street	City	Minor Arterial		Minor Arterial	Yes
Cleveland Street	City	Service Collector		Major Collector	No
Front Street	City	Minor Arterial		Minor Arterial	Yes
Industrial Avenue	City	Service Collector		Major Collector	No
Progress Way	City	Service Collector		Major Collector	No
OR 211	ODOT	Minor Arterial		Minor Arterial	Yes
Park Avenue	City	Access Street		Major Collector	No
Hardcastle Avenue	County/City	Service Collector	No Designation	Major Collector	No
Gatch Street	City	Access Street		Major Collector	No
Brown Street	City	Service Collector		Major Collector	No
OR 99E (north of OR 214 and south of Young Street)	ODOT	Major Arterial		Minor Arterial	No
OR 99E (segment where aligned with OR 214)	ODOT	Major Arterial		Principal Arterial	No
Cooley Road	County	Service Collector	Local	Major Collector	No

Roadway Characteristics

The characteristics of arterial and collector streets are summarized in Table 3. The data includes posted speed limits, number of lanes, on-street bike lanes, and on-street parking. These characteristics define roadway capacity and operating speeds through the street system, which affects travel path choices for drivers in Woodburn. Subsequent sections provide additional information on traffic volumes at select study intersections.

Table 3: Existing Study Area Roadway Characteristics by Functional Classification

Corridor	Posted Speed [MPH]	Number of Lanes	On-street Bike Lanes	On-street Parking
Major Arterial				
OR 219/OR 214 (west UGB limits to OR 99E)	35/55	2-5	Partial	No
OR 211 (east of OR 99E)	35	2	No	No
OR 99E	35/45/55	2/5	Partial	No
OR 214 (east of OR 99E)	35	2	No	No
Minor Arterial				
Butteville Road	45/55	2	No	No
Evergreen Road	25	2	Partial	Partial
Boones Ferry Road/Settlemier Avenue	25/35/45	2/3	Partial	No
Front Street	25/30	2	No	Partial
Garfield Street	25	2	No	Partial
Young Street	35	2	Yes	No
Service Collector				
Arney Road	25/30	2	Yes	No
Stacy Allison Way	25	2	Partial	No
Center Street	25	2	Yes	No
Hayes Street	25	2	No	No
Parr Road	25	2	No	No
Harrison Street	25	2	No	Partial
Lincoln Street	25/30	2	No	Partial
Cleveland Street	25/30	2	No	Partial
Progress Way	25	2	No	Yes
Industrial Avenue	25	2	No	Yes
Hardcastle Avenue	25	2	Partial	No
Brown Street	25	2	No	No
Cooley Road	40	2	No	No
Access Street				
Woodland Avenue	25	2/Unmarked	No	Partial
Harvard Drive	25	2	No	Yes
Stubb Road	25	Unmarked	No	No
Oregon Way	25	2	No	Partial
Country Club Road	25	2	Partial	Partial
Astor Way	25	Unmarked	No	Yes
Tukwila Drive	25	2	No	No

Corridor	Posted Speed [MPH]	Number of Lanes	On-street Bike Lanes	On-street Parking
Hazelnut Drive	25	2	Yes	No
5th Street	25	2	No	Partial
Gatch Street	25	2	No	Partial
Park Avenue	25	2	No	Yes

Pavement Condition

Woodburn evaluates the pavement condition of all City maintained streets on a rolling basis. A total of 62.20 miles were evaluated in between March 2009 and August 2015 and assigned a Pavement Conditions Index (PCI) value of 0 to 100 based on the pavement condition. A higher PCI value allows for more cost-effective treatments, such as slurry seals and thin overlays while a lower PCI (<50) may require more expensive treatments, such as thick overlays and full reconstruction. *Attachment C* contains historical PCI data and statistics that were provided by City staff.

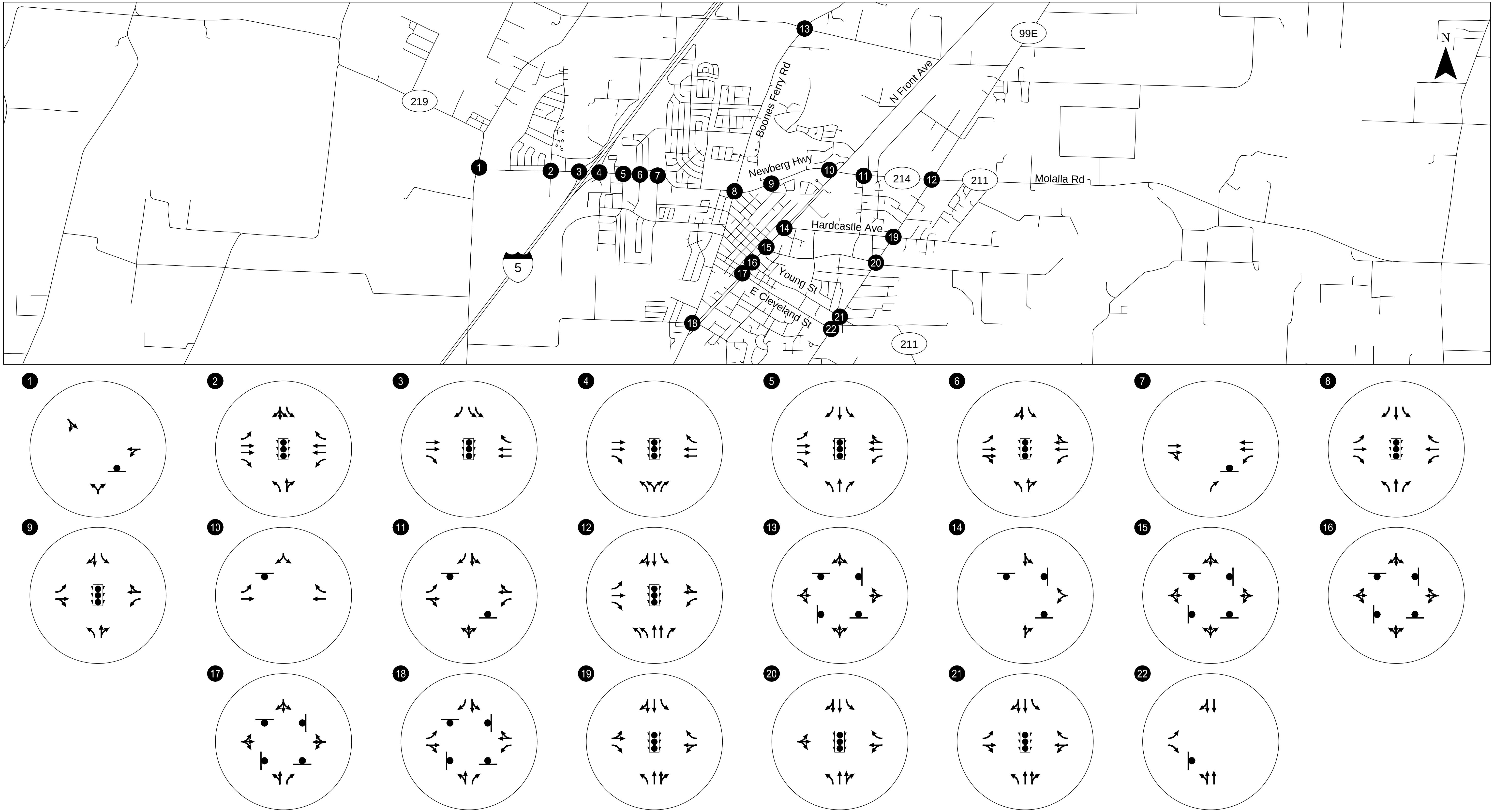
Traffic Operations

Traffic operations were evaluated at 22 study intersections in accordance with the assumptions and methodologies identified in the methodology memo provided in *Attachment D*. Figure 6illustrates the location of the study intersections and the existing lane configurations.

Traffic Volumes and Peak Hour Operations

Manual turning movement counts were conducted at the study intersections in September and October 2017 by ODOT. The counts were conducted on a typical mid-week day during the evening (4:00 to 6:00 p.m.) peak time period. The system-wide peak hour for the study intersections was identified as 4:30 to 5:30 p.m. Figure 6 provides a summary off the turning movement counts at the study intersections.

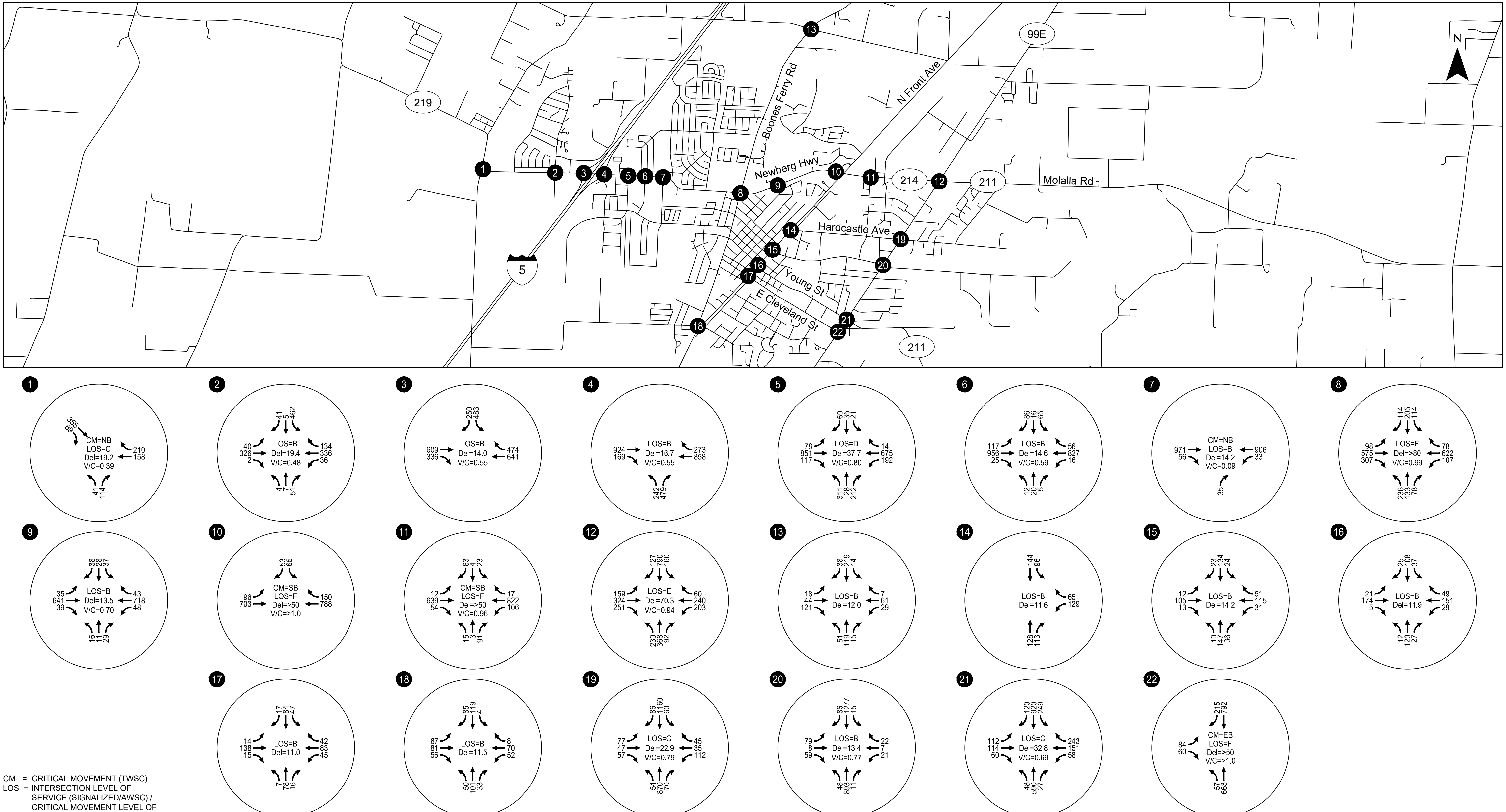
The turning movement counts on ODOT facilities were seasonally adjusted to 30th highest hour volumes (30HV) in accordance with the methodology memo. Figure 7 and Table 4 summarizes the results of the traffic operations analysis at the study intersection under existing traffic conditions. *Attachment E* contains the year 2017 existing traffic conditions worksheets.



- STUDY INTERSECTIONS
- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations and Traffic Control Devices
Woodburn, Oregon

Figure
6



CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWC = TWO-WAY STOP CONTROL
AWSC= ALL-WAY STOP CONTROL

Existing Traffic Operations
Woodburn, Oregon

Figure 7

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WOODBURN Transportation System Plan Update

Table 4: Weekday PM Peak Hour Intersection Operations

Map ID	Intersection	Level of Service (LOS)	Delay (Sec)	Volume/ Capacity (V/C)	Mobility Target/ Operations Standard		MOE Met?
					Agency	Maximum	
Signalized Intersections							
2	OR 219/Woodland Avenue	B	19.4	0.48	ODOT	v/c 0.95	Yes
3	OR 214/I-5 Southbound Ramp	B	14.0	0.55	ODOT	v/c 0.85	Yes
4	OR 214/I-5 Northbound Ramp	B	16.7	0.55	ODOT	v/c 0.85	Yes
5	OR 214/Evergreen Road	D	37.7	0.80	ODOT	v/c 0.95	Yes
6	OR 214/Oregon Way/Country Club Road	B	14.6	0.59	ODOT	v/c 0.95	Yes
8	OR 214/Boones Ferry Road NE	F	>80	0.99	ODOT	v/c 0.95	*No*
9	OR 214/Meridian Drive/5th Street	B	13.5	0.70	ODOT	v/c 0.95	Yes
12	OR 214/OR 211/OR 99E	E	70.3	0.94	ODOT	v/c 0.95	Yes
19	OR 99E/Hardcastle Avenue	C	22.9	0.79	ODOT	v/c 0.90	Yes
20	OR 99E/Lincoln Street	B	13.4	0.77	ODOT	v/c 0.90	Yes
21	OR 99E/Young Street	C	32.8	0.69	ODOT	v/c 0.90	Yes
Unsignalized Intersections							
1	Butteville Road/OR 219	C	19.2	0.39	ODOT	v/c 0.90	Yes
7	Cascade Drive/OR 214	B	14.2	0.09	ODOT	v/c 0.95	Yes
10	Front Street/OR 214	F	>50	>1.0	ODOT	v/c 0.95	*No*
11	Park Avenue/OR 214	F	>50	0.96	ODOT	v/c 0.95	*No*
13	Boones Ferry Road NE/Crosby Road	B	12.0	-	County	LOS D and v/c 0.85	Yes
14	Hardcastle Avenue/Front Street	B	11.6	-	City	v/c 0.90	Yes
15	Lincoln Street/Front Street	B	14.2	-	City	v/c 0.90	Yes
16	Garfield Street/Young Street/Front Street	B	11.9	-	City	v/c 0.90	Yes
17	Cleveland Street/Front Street	B	11.0	-	City	v/c 0.90	Yes
18	Parr Road/Settlemier Avenue	B	11.5	-	City	v/c 0.90	Yes
22	OR 99E/Cleveland Street	F	>50	>1.0	ODOT	v/c 0.90	*No*

Notes:
LOS = Intersection Level of Service (Signal), Critical Movement Level of Service (TWSC).
Delay = Intersection Average vehicle delay (Signal), critical movement vehicle delay (TWSC).
V/C = Intersection V/C (Signal) critical movement V/C (TWSC).
MOE = Measure of Effectiveness

As shown in Table 4, four of the study intersections currently do not operate acceptably per their respective mobility targets/operations standards. Additional information about the operations issues identified at these intersections is provided below.

OR 214/Boones Ferry Road NE

OR 214/Boones Ferry Road NE currently operates at LOS F with a v/c ratio of 0.99, which exceeds the ODOT mobility target for the intersection. This is primarily due to high through volumes on OR 214 and high northbound and southbound left-turn volumes.

Front Street/OR 214

Front Street/OR 214 currently operates at LOS F with a v/c ratio of 1.27 for the critical southbound movements, which exceeds the ODOT mobility target for the intersection. This is primarily due to high through volumes on OR 214 that limit the gaps where the left-turn and right-turn volumes can turn from a shared lane.

Park Avenue/OR 214

Park Avenue/OR 214 currently operates at LOS F with a v/c ratio of 0.95 for the critical southbound movement, which exceeds the ODOT mobility target for the intersection. This is primarily due to high through volumes on OR 214 that limit the gaps where southbound vehicles may enter the intersection.

OR 99E/Cleveland Street

OR 99E/Cleveland Street currently operates at LOS F with a v/c ratio of 1.16 for the critical eastbound movement, which exceeds the ODOT mobility target for the intersection. This primarily due to high through volumes on OR 99E that limit the gaps where the left-turn from Cleveland may enter the intersection.

Queueing

A queuing analysis was conducted at the signalized study intersections. Table 5 summarizes the 95th percentile queues during the weekday p.m. peak hour under existing traffic conditions. The vehicle queue and storage lengths were rounded to the nearest 25-feet. The storage lengths reflect the striped storage for each movement at the intersections.

Table 5: Weekday PM Peak Hour Queuing

Map ID	Intersection	Movement	95th Percentile Queue	Storage Length (feet)	Adequate?
2	OR 219/Woodland Avenue	EBL	50	225	Yes
		EBR	<25	150	Yes
		WBL	50	225	Yes
		WBR	<25	100	Yes
		NBL	<25	100	Yes
		SBL	225	350	Yes
3	OR 214/I-5 Southbound Ramp	EBR	<25	275	Yes
		WBR	<25	525	Yes
		SBL	200	650	Yes
		SBR	125	425	Yes
4	OR 214/I-5 Northbound Ramp	EBR	<25	575	Yes
		WBR	m<25	400	Yes
		NBL	200	600	Yes
		NBR	175	275	Yes
5	OR 214/Evergreen Road	EBL	m75	175	Yes

Map ID	Intersection	Movement	95th Percentile Queue	Storage Length (feet)	Adequate?
		EBR	50	300	Yes
		WBL	#200	375	Yes
		NBL	#350	325	*No*
		NBR	50	325	Yes
		SBL	25	75	Yes
		SBR	<25	75	Yes
6	OR 214/Oregon Way/Country Club Road	EBL	m<25	300	Yes
		WBL	<25	175	Yes
		NBL	25	150	Yes
		SBL	75	50	*No*
8	OR 214/Boones Ferry Road NE	EBL	150	250	Yes
		EBR	100	200	Yes
		WBL	175	225	Yes
		WBR	50	150	Yes
		NBL	#450	275	*No*
		NBR	50	100	Yes
		SBL	175	175	*No*
		SBR	75	775	Yes
9	OR 214/Meridian Drive/5th Street	EBL	<25	100	Yes
		WBL	<25	150	Yes
		NBL	50	150	Yes
		SBL	50	50	Yes
12	OR 214/OR 211/OR 99E	EBL	200	250	Yes
		WBL	#300	225	*No*
		NBL	125	250	Yes
		NBR	m<25	200	Yes
		SBL	#300	225	*No*
19	OR 99E/Hardcastle Avenue	EBR	<25	50	Yes
		WBR	<25	75	Yes
		NBL	m<25	75	Yes
		SBL	m<25	75	Yes
20	OR 99E/Lincoln Street	WBR	<25	50	Yes
		NBL	m<25	75	Yes
		SBL	m<25	100	Yes
21	OR 99E/Young Street	EBL	#200	25	*No*
		WBR	175	50	*No*
		NBL	25	50	Yes
		SBL	m150	50	*No*

Where WB = Westbound, SB = Southbound, EB = Eastbound, NB = Northbound, L = Left, R = Right
#: 95th percentile volume exceeds capacity, queue may be longer.
m: Volume for 95th percentile queue is metered by upstream signal.

As shown in Table 5, five study intersections currently have 95th percentile queues that exceed the stripped storage for the movements.

Traffic Safety

Intersection Crashes

The crash history of the study intersections was reviewed in an effort to identify any potential safety issues that could be addressed as part of the TSP update. ODOT provided crash records for the five-year period from January 1, 2011 through December 31, 2015 for the 22 study intersections. The data provided by ODOT is summarized in Table 6.

Table 6: Intersection Crash Summary (January 1, 2011 to December 31, 2015)

Map ID	Intersection	Crash Severity			Crash Type					Total Crashes
		Fatal	Injury	PDO[1]	Rear-end	Turning	Angle	Ped	Other[2]	
1	Butteville Road/OR 219	0	1	7	4	1	0	0	3	8
2	OR 219/Woodland Avenue	0	0	2	0	1	1	0	0	2
3	OR 214/I-5 Southbound Ramp	0	10	11	18	0	0	0	3	21
4	OR 214/I-5 Northbound Ramp	0	6	3	3	4	0	0	2	9
5	OR 214/Evergreen Road	0	22	20	16	20	3	1	2	42
6	OR 214/Oregon Way/Country Club Road	0	10	5	8	5	1	1	0	15
7	Cascade Drive/OR 214	0	3	1	1	2	0	0	1	4
8	OR 214/Boones Ferry Road NE	0	4	3	2	3	1	0	1	7
9	OR 214/Meridian Drive/5th Street	0	5	4	7	2	0	0	0	9
10	Front Street/OR 214	0	2	5	2	3	0	0	2	7
11	Park Avenue/OR 214	0	7	9	9	2	4	0	0	16
12	OR 214/OR 211/OR 99E	0	16	19	25	5	1	2	2	35
13	Boones Ferry Road NE/Crosby Road	0	0	0	0	0	0	0	0	0
14	Hardcastle Avenue/Front Street	0	2	2	0	3	1	0	0	4
15	Lincoln Street/Front Street	0	3	2	1	0	4	0	0	5
16	Garfield Street/Young Street/Front Street	0	3	4	0	4	3	0	0	7
17	Cleveland Street/Front Street	0	2	0	0	0	2	0	0	2
18	Parr Road/Settlemier Avenue	0	2	0	0	1	1	0	0	2
19	OR 99E/Hardcastle Avenue	0	8	6	4	6	2	1	1	14
20	OR 99E/Lincoln Street	0	5	5	5	4	0	1	0	10
21	OR 99E/Young Street	0	18	18	5	16	11	1	3	36
22	OR 99E/Cleveland Street	0	12	9	4	13	3	0	1	21

[1]Property Damage Only
[2]Other includes head-on, sideswipe, no collision, and fixed object
[3]From ODOT Critical Crash Rate Calculator

Critical crash rates were calculated for each of the study intersections following the analysis methodology presented in ODOT's *SPR 667 Assessment of Statewide Intersection Safety Performance.* SPR 667 provides average crash rates at a variety of intersection configurations in Oregon based on number of approaches and traffic control types. The average crash rate represents the approximate number of crashes that are "expected" at a study intersection. The intersection critical crash rate assessment for the study intersections is summarized in Table 7. *Attachment C* contains the crash data provided by ODOT and the critical crash rate worksheet.

Table 7: Intersection Critical Crash Rate Assessment

Map ID	Intersection	Total Crashes	Critical Crash Rate by Intersection	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
1	Butteville Road/OR 219	8	0.30	0.41	0.46	*Yes*
2	OR 219/Woodland Avenue	2	0.72	0.37	0.08	No
3	OR 214/I-5 Southbound Ramp	21	0.65	0.56	0.41	No
4	OR 214/I-5 Northbound Ramp	9	0.64	0.55	0.17	No
5	OR 214/Evergreen Road	42	0.65	0.56	0.88	*Yes*
6	OR 214/Oregon Way/Country Club Road	15	0.67	0.43	0.37	No
7	Cascade Drive/OR 214	4	0.24	0.44	0.11	No
8	OR 214/Boones Ferry Road NE	7	0.65	0.56	0.14	No
9	OR 214/Meridian Drive/5th Street	9	0.70	0.45	0.29	No
10	Front Street/OR 214	7	0.25	0.45	0.21	No
11	Park Avenue/OR 214	1	0.34	0.45	0.47	*Yes*
12	OR 214/OR 211/99E	35	0.64	0.55	0.64	*Yes*
13	Boones Ferry Road NE/Crosby Road	0	0.43	0.35	0.00	No
14	Hardcastle Avenue/Front Street	4	0.34	0.36	0.32	No
15	Lincoln Street/Front Street	5	0.44	0.35	0.39	*Yes*
16	Garfield Street/Young Street/Front Street	7	0.43	0.44	0.51	*Yes*
17	Cleveland Street/Front Street	2	0.47	0.38	0.19	No
18	Parr Road/Settlemier Avenue	2	0.44	0.35	0.15	No
19	OR 99E/Hardcastle Avenue	14	0.65	0.56	0.29	No
20	OR 99E/Lincoln Street	10	0.66	0.56	0.22	No
21	OR 99E/Young Street	36	0.65	0.56	0.73	*Yes*
22	OR 99E/Cleveland Street	21	0.25	0.44	0.62	*Yes*

As shown in Table 7, the observed crash rate at eight of the study intersections exceeds the critical crash rate by intersection type, by volume, or by both.

Butteville Road/OR 219

The crash data summarized in Table 6 shows a high percentage of rear-end crashes at the intersection. Of the four rear-end crashes observed in the five years of data, all four occurred on the south leg of the intersection as vehicles were exiting Butteville Road. Three of the crashes were caused by a driver following too closely.

OR 214/Evergreen Road

While there are a high number of reported crashes at the OR 214/Evergreen Road intersection, it should be noted that this intersection was upgraded as part of the I-5/OR 214 interchange reconstruction project which was completed in 2016. All of the reported crash data precedes these improvements.

Park Avenue/OR 214

The crash data summarized in Table 6 shows a higher percentage of rear-end crashes at the intersection. Of the nine rear-end crashes observed in the five years of data, five occurred on the west leg of the intersection and four occurred on the east leg. Seven of the rear-end crashes were caused by a driver following too closely.

OR 214/OR 211/OR 99E

The crash data summarized in Table 6 shows a higher percentage of rear-end crashes at the intersection. Of the 25 rear-end crashes observed in the five years of data, seven occurred on both the east and west legs of the intersection, and 18 of the crashes were caused by a driver following too closely.

Lincoln Street/Front Street

The crash data summarized in Table 6 shows a higher percentage of angle crashes at the intersection. Of the four angle crashes observed in the five years of data, three of the crashes were caused by a driver not yielding the right-of-way.

Garfield Street/Young Street/Front Street

The crash data summarized in Table 6 shows a higher percentage of turning movement crashes at the intersection. Of the four turning movement crashes observed in the five years of data, all four involved vehicles traveling westbound from Young Street.

OR 99E/Young Street

The crash data summarized in Table 6 shows a higher percentage of turning movement crashes at the intersection. Of the 16 rear-end crashes observed in the five years of data, six of the crashes involved eastbound through movements and six involved southbound left-turn movements. 12 of the crashes were caused by a driver not yielding the right-of-way.

OR 99E/Cleveland Street

The crash data summarized in Table 6 shows a higher percentage of turning movement crashes at the intersection. Of the 13 turning movement crashes observed in the five years of data, all 13 involved southbound through movements on OR 99E. All 13 turning movement crashes were caused by a driver failing to yield the right-of-way.

Study Area Crashes

The crash history of the overall study area was also reviewed in an effort to identify any potential systemic safety issues or issues with pedestrian and bicycle safety that could be addressed as part of the TSP update. Crash records were obtained from ODOT for the five-year period from January 1, 2011 through December 31, 2015 for the overall study area. Figure 8 illustrates the location, severity, and type of crashes that occurred within the study area over the five-year period. Based on the data, a total of 1,096 crashes occurred within Woodburn, of which one resulted in a fatality, 529 resulted in injuries, and 566 resulted in property-damage-only. The fatal, severe injury, pedestrian, and bicycle crashes are described below.

Fatal Injury Crashes

One fatal injury crash occurred within the city over the last five-year period. The crash involved a pedestrian and is described below under the pedestrian crashes section.

Severe Injury Crashes

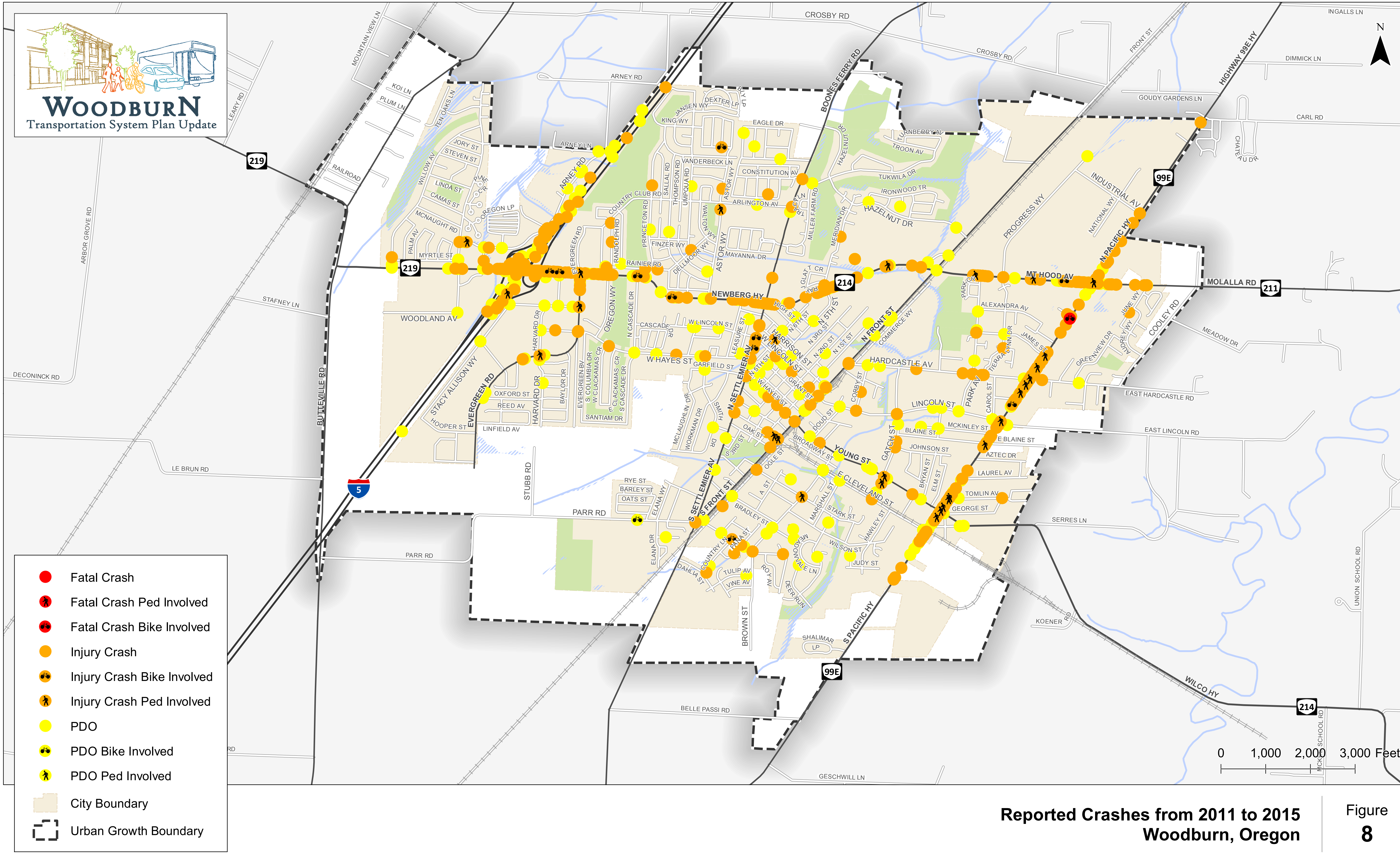
A total of 18 severe injury crashes (identified as crashes with type A injuries) occurred within the city over the last five-year period. Of the 18 severe injury crashes, seven involved a pedestrian. The pedestrian crashes are described below. The remaining 11 crashes occurred along I-5, OR 99E, Evergreen Road, Front Street, and Vanderbeck Lane. Five of the remaining crashes were caused by motorists not yielding right-of-way, two by motorists that passed a stop sign or flasher, two by motorists following too closely, one by driving faster than conditions allowed, and one made an improper turn.

Pedestrian Crashes

A total of 32 pedestrian-involved crashes occurred within Woodburn over the last five-year period. 15 of the crashes occurred along OR 99E, five along Evergreen Road, three along OR 214, two along Gatch Street, two along Cleveland Street, and one each on I-205, Arney Road, Astor Way, Harrison Street, and Brown Street. Of the five on Evergreen Road, three crashes occurred at the intersection with Stacy Allison Way. 22 crashes were caused by the motorist failing to yield the right-of-way, eight were caused by the non-motorist illegally present in the roadway, one motorist disregarded a traffic signal, and one non-motorist wore clothing that was not visible. All 32 pedestrian crashes involved at least one injury or fatality.

Bicycle Crashes

A total of 12 bicycle-related crashes occurred within the city of the last five-year period. Five of the crashed occurred along OR 214, three along Settlemier Avenue, two along OR 99E, and one each on Parr Road, Vanderbeck Lane, and Bridglewood Lane. Eight of the crashes were caused by the motorist not yielding the right-of-way, three by the non-motorist present illegally in the roadway, and one by the motorist driving too fast for the conditions.



Reported Crashes from 2011 to 2015
Woodburn, Oregon

Figure
8

C:\Users\jsommerville\Desktop\Local Project Folder\21071 - Woodburn TSP Update\gis\08 Reported Crashes (2011 through 2015).mxd - jsommerville - 3:02 PM 2/19/2018

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

11 of the bicycle crashes involved at least one injury. The one fatal crash involved a cyclist near the intersection of OR 99E/Mount Jefferson Avenue. Conditions were reported as dark and rainy. The motorist did not yield the right-of-way and the non-motorist was also illegally in the roadway and wearing non-visible clothing.

Safety Priority Index System

The ODOT Statewide Priority Index System (SPIS) identifies sites along state highways where safety issues warrant further investigation. The SPIS is a method developed by ODOT for identifying hazardous locations on state highways through consideration of crash frequency, crash rate, and crash severity. Sites identified within the top 5 percent are investigated by ODOT staff and reported to the Federal Highway Administration (FHWA). Per the most recent SPIS list, the OR 214/Evergreen Road intersection is identified by ODOT as within the top five percent of crash sites over the last five-year period. Several other locations within Woodburn are identified as within the top 10 percent of crash sites over the last five-year period including:

- I-5 from milepost 271.63 to milepost 271.76, including the interchange with OR 214
- OR 99E/Tomlin Avenue
- OR 214 from milepost 36.77 to 36.95, including the I-5 interchange
- OR 214/Oregon Way
- OR 214 from milepost 39.15 to 39.26, close to OR 99E

PEDESTRIAN SYSTEM

The pedestrian system within Woodburn consists of sidewalks and trails as well as marked and unmarked, signalized and unsignalized pedestrian crossings. These facilities provide local residents with the ability to access transit as well as local retail, commercial, recreational, and other land uses by foot. Safe and convenient pedestrian facilities are essential to a vibrant community and economy within the city.

Pedestrian Facilities

In order to assess the adequacy of bicycle facilities in Woodburn, a GIS data inventory was created to reflect of the presence of sidewalks and other pedestrian facilities along the city's major arterial, minor arterial, service collector, access streets, and local streets. Figure 9 shows the existing pedestrian facilities within Woodburn. The following provides a summary of the facilities, including existing gaps and deficiencies.

Sidewalks

Sidewalks are currently provided along a majority of arterial and collector streets within the city as well as many local streets. However, there are gaps on some roadways such as the southern sections of 99E, a small segment of Evergreen Road (between Hayes Street and Stacy Allison Way), Hardcastle Avenue, Hayes Street, Settlemier Avenue (south of Front Street), and undeveloped portions of Boones Ferry Road. Sidewalks are provided in newer commercial and residential areas, while some older neighborhoods were developed without sidewalks.

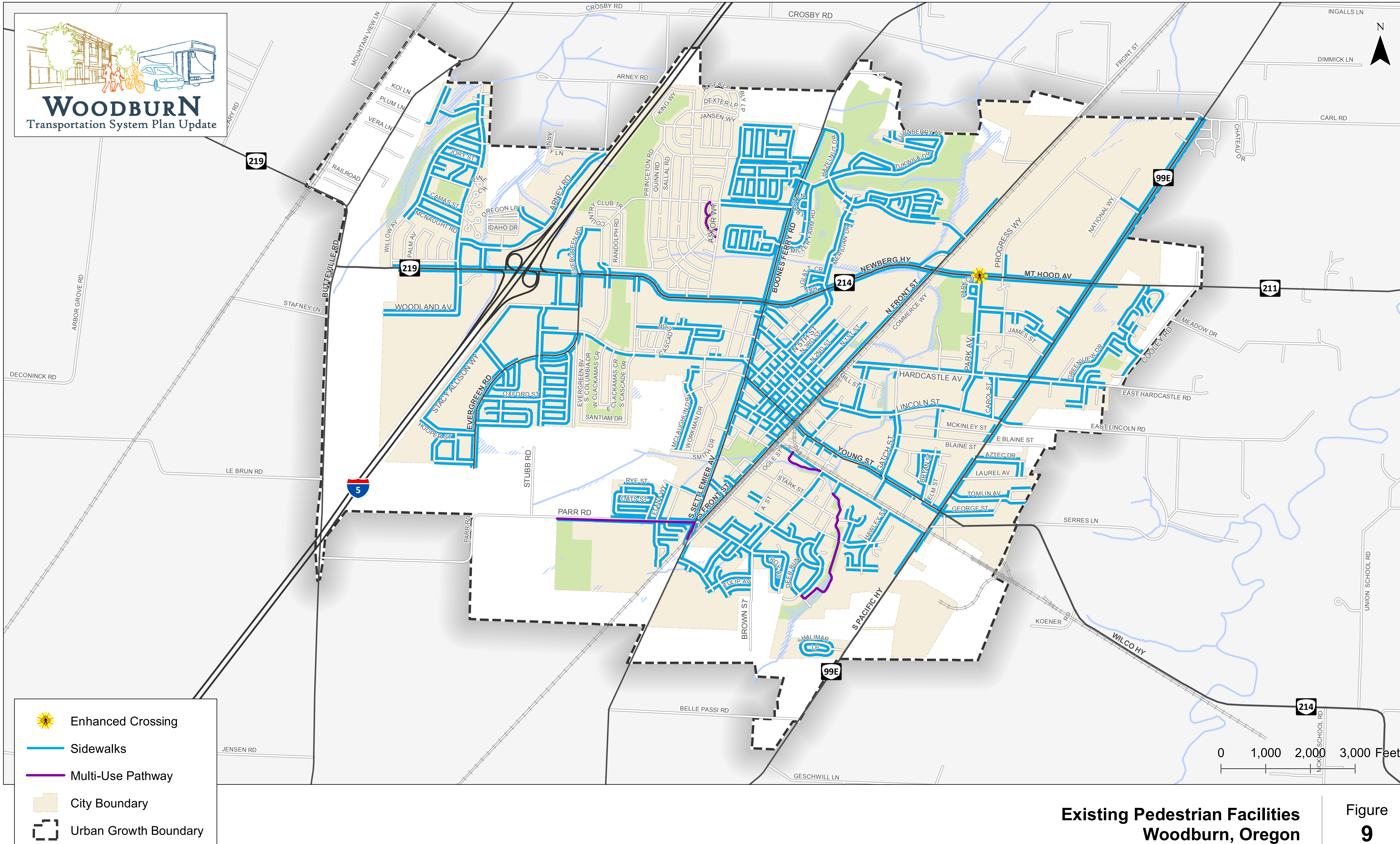
Crosswalks

The majority of crosswalks throughout the city are located at intersections. At improved intersections, the crosswalks generally provide ADA-compliant curb ramps and are in acceptable conditions. Some crosswalk locations throughout the city need new striping.

Shared-use Paths and Trails

There are several shared-use paths and trails located in Woodburn as noted below.

- Mill Creek Greenway Trail – A portion of the Mill Creek Greenway trail has been constructed in the southern part of Woodburn as shown in Figure 9. This completed segment of trail currently connects Hermanson Street and the adjacent residential neighborhood to Cleveland Street along the Mill Creek. Future extensions of this trail are envisioned as part of the Mill Creek Greenway Master Plan.



Existing Pedestrian Facilities
Woodburn, Oregon

Figure
9

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

- Senior Estates Park – A gravel trail exists within Senior Estates Park that is primarily used for recreation. However, it was included in this inventory as the trail has multiple connections to the adjacent residential neighborhood.
- Parr Road – A segment of Parr Road between Settlemier Avenue and Heritage Elementary School currently has a separated multi-use travelway. The travelway is located on the south side of Parr Road and is essentially a wide sidewalk that is set back from the older adjacent Parr Road sidewalk. It has been included in this inventory as a shared-use pathway given the number of students who use it to access Heritage Elementary School.

Safe Routes to School

Woodburn does not have a city-wide Safe Routes to School (SRTS) program, which is a program designed to encourage students to walk to school by improving infrastructure along streets that provide access to local schools as well as providing education programs, driver enforcement programs, and more. This TSP update will serve as a catalyst to begin discussions and implementation of a SRTS program in the city and identify infrastructure projects that will provide better access to local schools.

Pedestrian Activity

Pedestrian counts were conducted at the study intersections in September and October 2017. 16-hour counts were conducted on a typical mid-week day when school was in session. All of the counts include the total number of pedestrians that entered the intersections in 15-minute intervals. The pedestrian counts show a relatively low level of pedestrian activity at the study intersections in general. It should be noted that while the peak hour for vehicular traffic typically occurs between 4:00 to 6:00 p.m., the peak hour for pedestrian activity near schools and other activity centers typically occurs earlier in the day. The pedestrian count data is shown in Table 8.

Table 8: PM Peak Hour Pedestrian Crossing Volumes at Study Intersections

Map ID	Intersection	North/South Pedestrian Volume	East/West Pedestrian Volume	Pedestrian Peak Hour
1	Butteville Road/OR 219	2	0	1:00 to 2:00 p.m.
2	OR 219/Woodland Avenue	0	1	6:00 to 7:00 p.m.
3	OR 214/I-5 Southbound Ramp	0	1	4:30 to 5:30 p.m.
4	OR 214/I-5 Northbound Ramp	0	1	4:30 to 5:30 p.m.
5	OR 214/Evergreen Road	0	4	5:00 to 6:00 p.m.
6	OR 214/Oregon Way/Country Club Road	0	2	10:30 to 11:30 a.m.
7	Cascade Drive/OR 214	1	1	10:00 to 11:00 a.m.
8	OR 214/Boones Ferry Road NE	3	1	3:15 to 4:15 p.m.
9	OR 214/Meridian Drive/5th Street	3	1	12:45 to 1:45 p.m.
10	Front Street/OR 214	1	1	5:15 to 6:15 p.m.
11	Park Avenue/OR 214	1	5	2:15 to 3:15 p.m.
12	OR 214/OR 211/OR 99E	1	0	4:00 to 5:00 p.m.
13	Boones Ferry Road NE/Crosby Road	2	0	10:15 to 11:15 a.m.
14	Hardcastle Avenue/Front Street	4	3	12:30 to 1:30 p.m.
15	Lincoln Street/Front Street	2	5	2:00 to 3:00 p.m.
16	Garfield Street/Young Street/Front Street	5	0	4:30 to 5:30 p.m.
17	Cleveland Street/Front Street	5	1	12:15 to 1:15 p.m.
18	Parr Road/Settlemier Avenue	4	2	11:45 a.m. to 12:45 p.m.
19	OR 99E/Hardcastle Avenue	3	1	2:00 to 3:00 p.m.
20	OR 99E/Lincoln Street	3	1	2:30 to 3:30 p.m.
21	OR 99E/Young Street	0	5	11:45 a.m. to 12:45 p.m.
22	OR 99E/Cleveland Street	4	0	1:45 to 2:45 p.m.

Pedestrian Level of Traffic Stress Analysis

The pedestrian facilities located along the city's major arterial, minor arterial, service collector, and access streets were evaluated in an effort to identify potential issues that could be addressed as part of the TSP update. The APM provides a methodology for evaluating pedestrian facilities within urban and rural environments called Pedestrian Level of Traffic Stress (PLTS). As applied by ODOT, this methodology classifies four levels of traffic stress that a pedestrian can experience on the roadway, ranging from PLTS 1 (little traffic stress) to PLTS 4 (high traffic stress). A road segment that is rated PLTS 1 generally has low traffic volumes and travel speeds and has a sidewalk that is separated from vehicular traffic. These segments are generally suitable for all users, including children. A road segment that is rated PLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most adults. Road segments rated PLTS 4 also include those with no sidewalks or other pedestrian facilities. Per the APM, PLTS 2 is considered a reasonable target for most pedestrian facilities due to its acceptability with the majority of people.

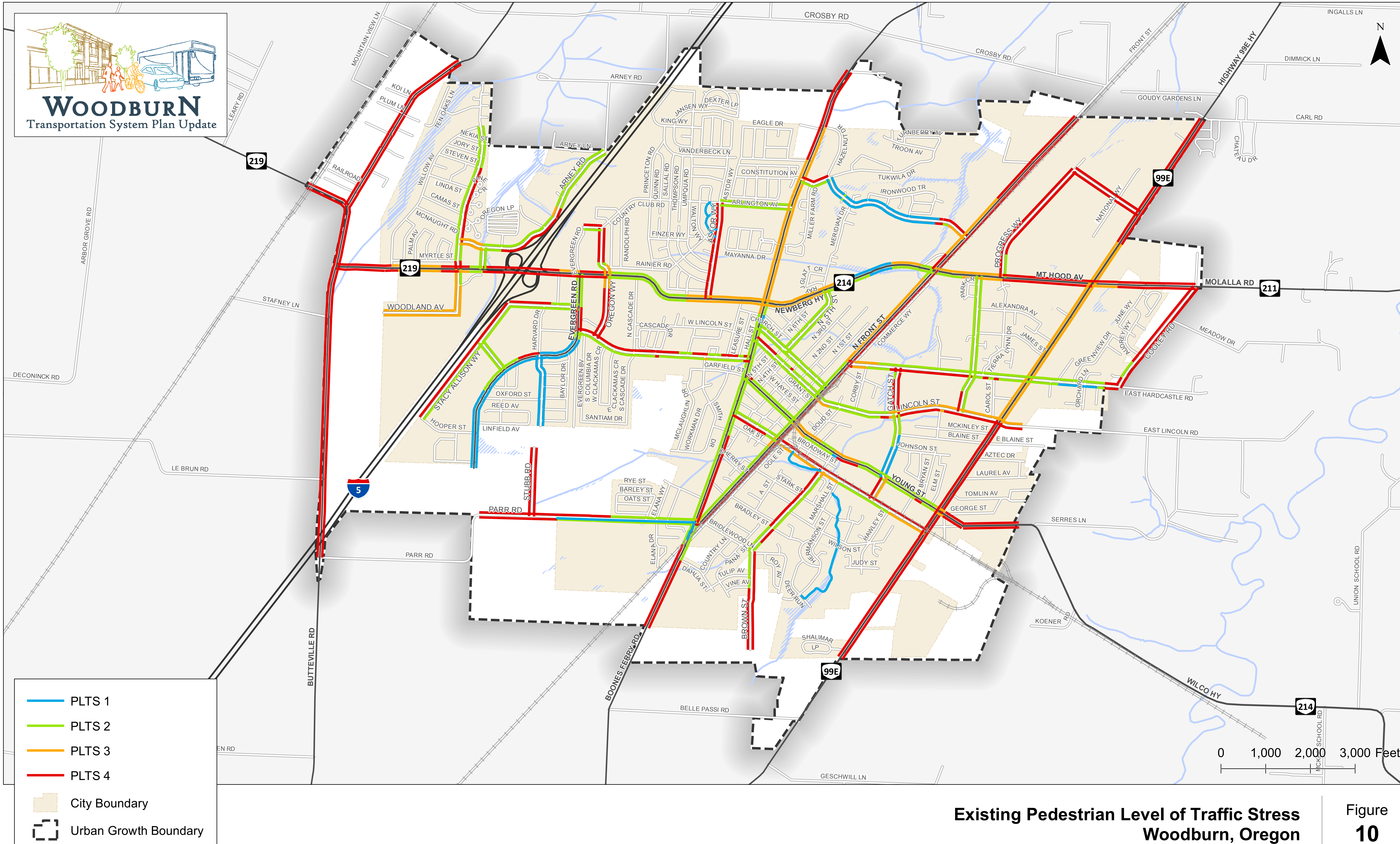
The PLTS score is based on four criteria, including sidewalk condition, physical buffer type, total buffering width, and general land use. All four criteria are scored from 1 to 4 and the highest score determines the overall score for the road segment. Figure 10 illustrates the results of the PLTS analysis for Woodburn's major arterial, minor arterial, service collector, and access streets.

Several road segments are rated PLTS 3 due to having curb-tight sidewalks on roadways with speeds of 30 mph or higher. In order for these segments to be rated LTS 2, the speeds would need to be reduced to 25 mph or a buffer would need to be installed between the sidewalk and vehicle travel lane. A majority of the segments rated PLTS 4 have no sidewalks or other pedestrian facilities to accommodate pedestrians. In order for these segments to be rated PLTS 2, sidewalks with appropriate sidewalk and buffer widths would need to be installed along the full length of the roadway. The PLTS calculations are summarized in *Attachment B*.

Existing Gaps and Deficiencies

Streets with no sidewalks or intermittent sidewalks force pedestrians to walk along the edge of the travel lane or use the shoulder if available. In many cases, this is not a desirable option for pedestrians due to narrow lane widths or uneven pavement conditions. Similarly, streets with no crosswalks or limited crosswalks force pedestrians to make unsafe or illegal crossings. Adequate pedestrian facilities should be provided to allow for safe travel between neighborhoods and essential destinations. The following provides a summary of the existing gaps and deficiencies in the existing pedestrian system:

- There are several major and minor arterial streets that currently do not have sidewalks along one or two sides of the roadway. These streets include:
    - OR 99E – intermittent gaps between Hardcastle Avenue and Young Street
    - OR 211 – east of June Way to east city limits
    - OR 214 – east of 993 to east city limits
    - OR 219 – west of Willow Street to west city limits
    - Butteville Road – south of OR 219 to south city limits
    - Evergreen Road – Stacy Allison Way to Hayes Street
    - Settlemier Avenue – Parr Road to Oak Street (east side)
    - Young Street – intermittent gaps between Front Street and 99E (south side)
    - Front Street – just north of Hazelnut Drive to north city limits (west side)
    - Boones Ferry Road – Hazelnut Drive to north city limits
- There are multiple gaps in the sidewalk network along the Service Collector facilities. Significant gaps include:
    - Hayes Street – Evergreen Road to Settlemier Avenue (north side)
    - Parr Road – Centennial Park to west city limits (north and south side)
    - Lincoln Street – Gatch Street to 99E (south side)



Existing Pedestrian Level of Traffic Stress
Woodburn, Oregon

Figure
10

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn

- Hardcastle Avenue – Gatch Street to Park Street (south side)
- Progress Way
- Industrial Avenue

- There are also multiple local streets that currently do not have sidewalks along one or two sides of the roadway. These are primarily in the residential neighborhood located north of OR 214 and west of Astor Way. Other neighborhoods with intermittent sidewalks are located south of Cleveland Street and east of Ogle Street.

PIPELINE SYSTEM

There are no major pipeline transport facilities within the Woodburn UGB.

RAIL SYSTEM

Freight Rail

Union Pacific Railroad operates a Class I rail line through Woodburn. These tracks parallel the east side of Front Street. A total of five at-grade crossings and one grade separated crossing exist along the rail line. Willamette Valley Railway operates a Shortline Railroad track that parallels the north side of Cleveland Street in the south side of town. A total of five public at-grade crossings exist along this rail line. In addition to these crossings, the rail line serves multiple local businesses along the corridor.

Passenger Rail

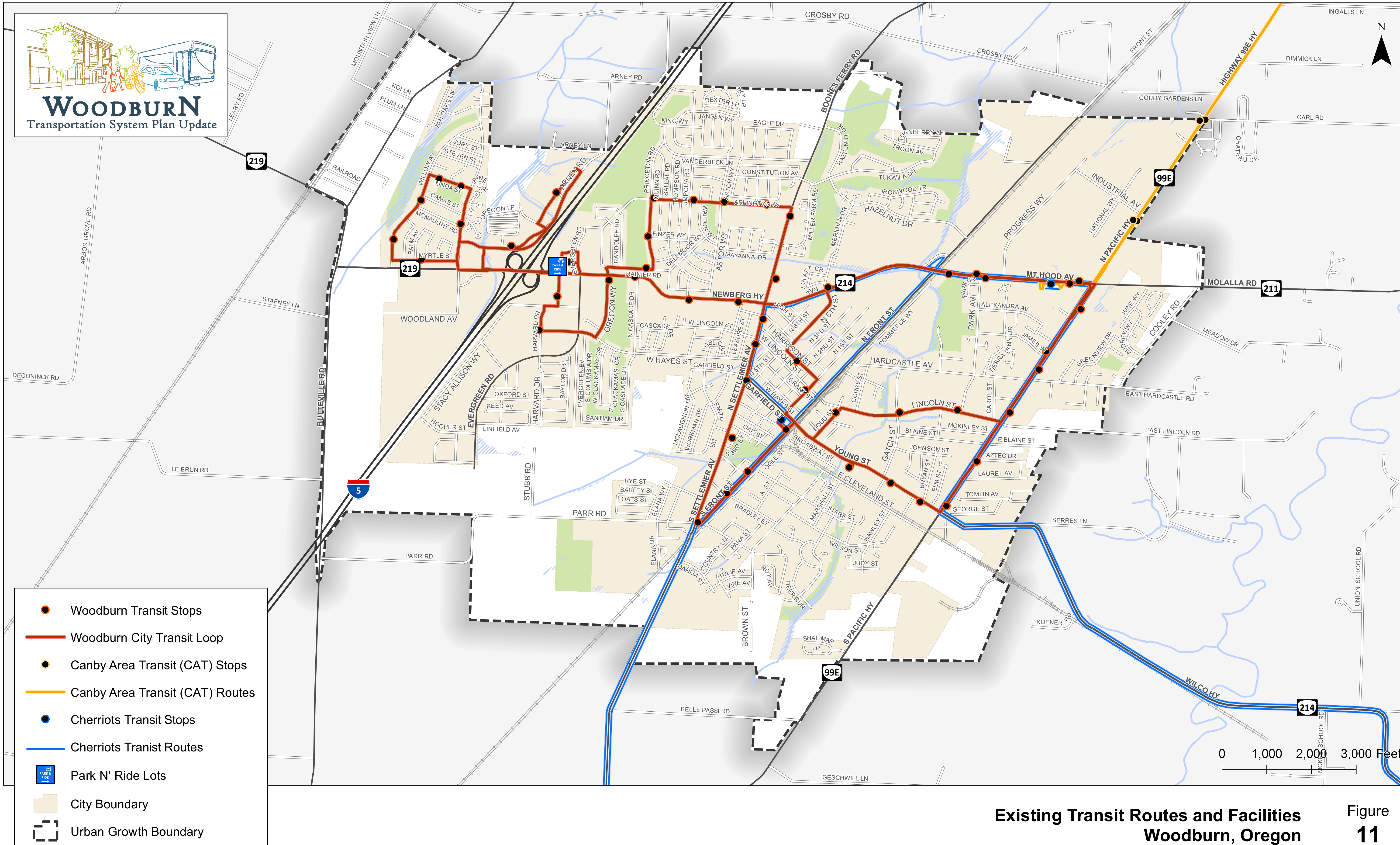
There are currently no passenger rail terminals in Woodburn. The closest passenger rail terminal is located in Salem, approximately 20 miles to the south. The Amtrak station in Salem operates from 6:30 AM to 4:30 PM.

TRANSIT SYSTEM

The public transit system within Woodburn consists of fixed-route and paratransit services as well as school and shuttle bus service.

Woodburn Transit Service - Fixed-Route Service

Woodburn Transit Service operates a fixed-route bus line in Woodburn, providing connections throughout town as shown in Figure 11. As shown, fixed-route transit service is provided along the major east-west corridors linking neighborhoods to all major retail and commercial areas. The route also connects to the Woodburn Memorial Transit Facility located off of OR 214. Service is provided from 7:00 AM to 7:00 PM at approximately 1-hour headways.



Existing Transit Routes and Facilities
Woodburn, Oregon

Figure 11

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

Dial-A-Ride Service

Woodburn provides Dial-A-Ride service for people with disabilities and the elderly living within Woodburn who are not able to utilize the fixed route bus. The service operates Monday - Friday from 7:00 AM - 7:00 PM and utilizes a fully accessible van. The van provides door to door service for any purpose to any location within the Woodburn City limits.

The Dial-A-Ride program also arranges for volunteer drivers to take elderly Woodburn residents and those with disabilities to medical appointments in all areas between Portland and Salem. Requests for service must be made at least one day in advance.

Cherriots Regional

Cherriots Regional operates the *10X Woodburn/Salem Express* bus line that provides weekday service between Salem and Woodburn along the 99E corridor. Stops are located along Front Street, OR 214, Settlemier Avenue and Downtown Woodburn. Cherriots Regional also operates the 20X *N. Marion Co./Salem Express* bus line that provides weekday services between Salem, Silverton, and Woodburn. Stops are located along OR 214 and 99E. The service operates Monday – Friday from 7:30 AM – 7:00 PM with 2 to 2.5 hour headways.

Canby Area Transit

Canby Area Transit (CAT) operates the *Route 99* bus line which provides daily bus service between Woodburn and Canby along the 99E corridor. The Woodburn stop is located near the 99E/OR 214 intersection. The service operates Monday – Friday from 6:30 AM – 8:00 PM with headways that range from 1 to 2.5 hours.

Greyhound

The Greyhound bus service provides a regional transportation option, with buses to Portland from Woodburn three times per day. The station is located on Front Street and is open from 9 a.m. to 8 p.m. everyday.

Park-and-Rides

The Woodburn Memorial Transit Facility (Park& Ride) is located off of Evergreen Road north of OR 214. Woodburn Transit Service regularly stops at the park & ride facility. The Cascades POINT bus service, operated by MTR Western in partnership with ODOT, makes 2 daily northbound stops and 2 daily southbound stops at the new transit facility. Riders can buy tickets to go as far as Eugene to the south, and Portland to the north. Schedule and ticket information is available at the website and the Amtrak Cascades site.

Qualitative (Multimodal) Assessment for Transit Modes

A transit qualitative multimodal assessment was conducted in accordance with the methodology described in ODOT's APM. Transit factors that should be considered are frequency and on-time reliability, schedule speed/travel times, transit stop amenities, and connecting pedestrian/bicycle network. This methodology applies a rating system similar to that used for pavement conditions; excellent, good, fair, poor.

Frequency and On-time Reliability

From the user's perspective, *frequency* determines how many times an hour a user has access to transit service, assuming that service is provided within acceptable walking distance and at the times the user wishes to travel. Frequency also helps determine the convenience of transit service to riders and is one component of overall transit trip time (helping to determine the wait time at a stop). Table 9 summarizes the ratings for frequency and on-time reliability for the three transit routes serving Woodburn.

Table 9: Frequency and On-time Reliability Rating

Provider	Routes	Service Frequency	Rating
Woodburn Transit Service	City Loop	60 minutes[1]	Fair
Cherriots Regional	10X Woodburn/Salem Express	120 to 150 minutes[1]	Poor
Canby Area Transit	99	60 to 150 minutes[1]	Poor

1. No service is provided on Saturday or Sunday.

All three routes that provide service to Woodburn operate on long headways that can create extended wait times at stops if users do not accurately time their travel.

Schedule Speed/Travel Times

Schedule speed and travel time refer to the time it takes to complete a transit route in full and the length of time between stops. Table 10 summarizes the ratings for schedule speed and travel time.

Table 10: Schedule Speed/Travel Times Rating

Provider	Routes	Number of Stops	Route Travel Time	Rating
Woodburn Transit Service	City Loop	53 (loop)	60 minutes	Fair
Cherriots Regional	10X Woodburn/Salem Express	7 (there and back)	50 minutes	Fair
Canby Area Transit	99	9 (there and back)	45 minutes	Fair

Woodburn Transit Service provides a loop route that goes to 53 stops in approximately 60 minutes. Cherriots Regional provides a bus route that goes out to Salem and back to Woodburn. In one direction, the route goes to 7 stops in approximately 50 minutes. Canby Area Transit provides a bus route that goes out to Oregon City Transit Center and back to Woodburn. In one direction, the route goes to 9 stops in approximately 45 minutes.

Transit Stop Amenities

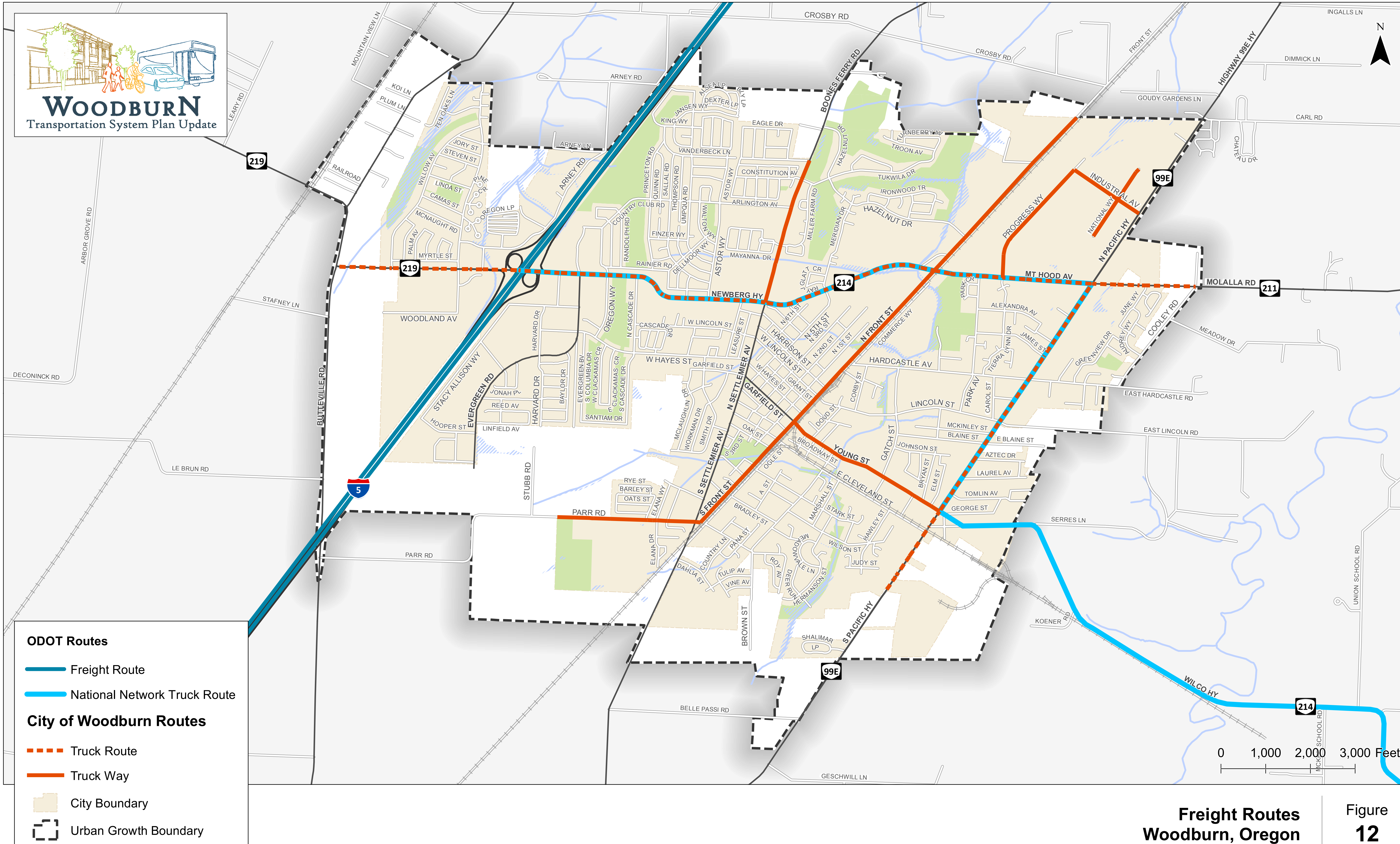
Amenities at transit stops, such as bus benches and bus shelters enhance a transit system and make it more user-friendly. Steps that can make this mode as comfortable and accommodating as possible may help encourage ridership. The Woodburn system as a whole has a mix of bus shelters and bus stops signs used to mark stops. Shelters are provided at locations such as the intersection of OR 214/OR 99E, Country Club Road near Astor Way, and at the Woodburn Premium Outlets. The rating for the system is fair.

Connecting Pedestrian/Bicycle Network

Pedestrian facilities are provided along all transit routes in Woodburn with the exception of Willow Avenue, a portion of County Club Road, and Princeton Road. There is a stop with a shelter near to the enhanced pedestrian crossing at the OR 214/Park Avenue intersection. Less of the transit route network is coordinated with the bike lane network, with the best connections provided along OR 214, Arney Road, and portions of Boones Ferry Road and OR 99E. Filling gaps existing bicycle networks would help create more of a network to support the transit system as well. The overall rating of the connection of the transit system to the pedestrian and bicycle network is fair.

TRUCK FREIGHT SYSTEM

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The designation of freight routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. Per the Oregon Highway Plan (OHP), the only designated freight route in Woodburn is I-5. In addition, OR 214 is designated a National Network Truck Route per ODOT TransGIS information online. Lastly, the current TSP identifies several freight routes and freight ways throughout Woodburn to facilitate the movement of freight in the city. Freight routes are shown on Figure 12.



Freight Routes
Woodburn, Oregon

Figure
12

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS

Transportation System Management and Operations (TSMO) measures are designed to increase the efficiency and safety of the transportation system without physically increasing roadway capacity. Typical TSMO measures include Intelligent Transportation System (ITS) solutions, real-time traveler information, and services that respond quickly to traffic incidents. Based on discussions with City staff, there are no TSMO measures currently being employed in Woodburn.

TRANSPORTATION DEMAND MANAGEMENT

The TPR requires all cities with populations greater than 25,000 people to develop a Transportation Demand Management (TDM) plan. TDM measures are designed to change travel behavior in order to reduce the need for more road capacity and improve performance of the road system. The TDM programs and strategies in Woodburn are primarily implemented though Woodburn Development Ordinance and include designating overlay districts that have vehicle trip budgets are specific areas in the city.

REVIEW OF EXISTING FUNDING

This section summarizes the existing transportation revenue sources and expenditure history for the City of Woodburn.

Revenue

The City of Woodburn has historically relied upon multiple revenue sources to fund the maintenance of its transportation network and make capital improvements. These local gas tax revenue, inter-governmental (primarily state gas tax revenue), franchise fees, and other miscellaneous revenue. Table 11 displays the total revenue by source used to fund transportation projects within Woodburn over the most recent seven years that comprehensive data was available.

Table 11: City of Woodburn Revenue History

Revenue Source	FY 2016-2017	FY 2015-2016	FY 2014-2015	FY 2013-2014	FY 2012-2013	FY 2011-2012	FY 2010-2011	Average
Taxes	$129,412	$115,692	$102,517	$101,761	$106,537	$182,109	$121,196	$122,746
Inter-Government	$1,480,082	$1,454,076	$1,409,311	$1,384,277	$1,597,518	$1,312,024	$1,116,011	$1,393,328
Franchise	$359,820	$357,983	$336,707	$360,046	$353,381	$326,713	$347,621	$348,896
Transportation SDC Fees	$33,396	$183,698	$440,595	$521,933	$411,527	$400,172	$153,268	$306,370
Other	$69,856	$59,518	$49,532	$319,086	$49,457	$88,767	$27,147	$94,766
Revenue Total	$2,072,566	$2,170,967	$2,338,662	$2,687,103	$2,518,420	$2,309,785	$1,765,243	$2,266,107

Taxes = Local Gas Tax revenue
Inter-Government = State Gas Tax, State Fund Exchange
Other = Misc. revenue, interest income

Based on the information shown in Table 11, the City of Woodburn has generated an average of approximately $2,266,107 per year in total revenue for transportation-related maintenance/projects.

Expenditures

Table 12 displays the total expenditures on transportation related projects within the City of Woodburn over the last seven years.

Table 12: City of Woodburn Expenditure History

Revenue Source	FY 2016-2017	FY 2015-2016	FY 2014-2015	FY 2013-2014	FY 2012-2013	FY 2011-2012	FY 2010-2011	Average
Personnel Services	$540,373	$415,289	$394,646	$410,316	$424,937	$455,991	$447,503	$441,294
Materials & Services	$509,435	$561,004	$641,713	$524,962	$501,421	$738,200	$649,795	$589,504
Debt Service	$33,770	$35,020	$36,268	$37,520	$33,519	$34,278	$35,520	$35,128
Maintenance	$42,839	$38,282	$56,387	$57,485	$64,336	$75,613	$62,051	$56,713
Street Construction/ Repair	$397,429	$602,933	$5,089,965	$1,215,767	$1,210,247	$950,375	$1,048,338	$1,502,151
Expenditure Total	$1,523,846	$1,652,528	$6,218,979	$2,246,050	$2,234,460	$2,254,457	$2,243,207	$2,624,790

Maintenance = road materials, signs, striping
Street Construction/Repair = major repairs and construction
Debt Service = Woodland Avenue/OR 219 Improvements

Based on the information shown in Table 12, the City of Woodburn has spent an average of $2,624,790 per year on roadway related personnel/materials/debt service/maintenance/street construction/repair. The information shown in Table 11 and Table 12 were used to project the availability of future funding for transportation improvement projects as described below.

Projected Transportation Funding

Table 13 provides a summary of the potential future project funding (in year 2017 dollars) over the next five, ten, and twenty years based on historical average funding levels.

Table 13: Future Transportation Funding Projections

Average Annual	5-Year Forecast	10—Year Forecast	20-Year Forecast
$2,624,790	$13,123,950	$26,247,900	$52,495,800

As shown in Table 13, it is anticipated that approximately $52,495,800 will be available for transportation roadway funding over the next 20 years using historical funding trends. It is anticipated that approximately half of this amount will be allocated for personnel costs, materials, debt service and maintenance of the system.

Potential Funding Sources

The projected transportation funding analysis shows that the City of Woodburn will have a limited source of funds that can solely dedicated to transportation-related capital improvement projects over the next twenty years. As such, Woodburn will likely need to seek additional funds via transportation improvement grants, partnerships with regional and state agencies, and other funding sources to help implement future transportation-related improvements.

Table 14 identifies a list of potential Grant sources and Partnering Opportunities to consider during the course of the 20-year planning horizon. Following Table 14, Table 15 identifies a list of potential new funding sources for Woodburn to consider in an effort to bolster funds for additional capital improvement projects.

Table 14: Potential Grant Sources and Partnering Opportunities

Funding Source	Description	Potential Facility Benefit	Opportunities
Statewide Transportation Improvement Program (STIP)	The Statewide Transportation Improvement Program (STIP) is Oregon's 4-year capital improvement program for major state and regional transportation facilities. This scheduling and funding document is updated every two years. Projects included on the STIP are allocated into the five different ODOT regions.	- Streets - Sidewalks - Bike lanes - Trails	The next STIP (2018-2021) will be organized into two different categories that focus on projects that will fix/preserve the existing transportation network and enhance/improve the transportation network.
Federal Funding	Large trails or trail networks with a transportation purpose can compete for TIGER grant awards. Additional significant federal funding sources include TAP, STP and CMAQ. Depending upon the location and purpose, trails can also be funded by HUD CDBG funds, USDA rural development programs, or EPA funding.	- Multi-Use Trails	Projects in urban areas have traditionally been funded at a minimum of $10,000,000 and rural trails of lower project costs are considered for TIGER funding.
Oregon Bicycle and Pedestrian Program	The Oregon Pedestrian and Bicycle Grant program ended as a standalone solicitation process in 2012. Grant monies are now distributed through the "Enhance" process in the STIP program noted above.	See STIP above	See STIP above.
ATV Grant Program	Operation and maintenance, law enforcement, emergency medical services, land acquisition, leases, planning, development and safety education in Oregon's OHV (off-highway vehicle recreation areas).	- Multi-Use Trails	http://www.oregon.gov/oprd/ATV/pages/grants.aspx

Table 15: Potential New Funding Sources for Consideration by the City of Woodburn

Funding Source	Description	Potential Facility Benefit	Opportunities
User Fees	Fees tacked onto a monthly utility bill or tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance to the street system. This may be a more equitable assessment given the varying fuel efficiency of vehicles. Regardless of fuel efficiency, passenger vehicles do equal damage to the street system.	Primarily Street Improvements	The cost of implementing such a system could be prohibitive given the need to track the number of vehicle miles traveled in every vehicle. Additionally, a user fee specific to a single jurisdiction does not account for the street use from vehicles registered in other jurisdictions.
Street Utility Fees/Road Maintenance Fee	The fee is based on the number of trips a particular land use generates and is usually collected through a regular utility bill. For the communities in Oregon that have adopted this approach, it provides a stable source of revenue to pay for street maintenance allowing for safe and efficient movement of people, goods, and services.	Preservation, restoration, and reconstruction of existing paved residential streets. Includes sidewalks, ramps, curbs and gutters, and utility relocation.	Other cities have adopted street maintenance utility fees at varying amounts charged to residential meters. Woodburn could consider a similar program.
Optional Tax	A tax that is paid at the option of the taxpayer to fund improvements. Usually not a legislative requirement to pay the tax and paid at the time other taxes are collected, optional taxes are usually less controversial and easily collected since they require the taxpayer to decide whether or not to pay the additional tax.	- Streets - Sidewalks - Bike lanes - Multi-Use Trails - Transit	The voluntary nature of the tax limits the reliability and stableness of the funding source.
Sponsorship	Financial backing of a project by a private corporation or public interest group, as a means of enhancing its corporate image.	- Multi-Use Trails	Sponsorship has primarily been used by transit providers to help offset the cost of providing transit services and maintaining transit related improvements.
Federal Funding	Trails with a transportation purpose can compete for TIGER grant awards. Depending upon the location and purpose, trails can also be funded by HUD, CDBG funds, USDA rural development programs, or EPA funding.	- Trails	Projects in urban areas have traditionally been funded at a minimum of $10,000,000 and rural trails of lower project costs are considered for TIGER funding.

Attachment A

Land & Population Inventory to Support Tech Memo #3

MEMORANDUM

Lands & Population Inventory to Support Tech Memo #3 (DRAFT)
Woodburn TSP

DATE	February 15, 2018
TO	Woodburn TSP Advisory Committee
FROM	Darci Rudzinski, Clinton "CJ" Doxsee, Angelo Planning Group
CC	Matt Hughart, Molly McCormick - Kittelson & Associates, Inc.

INTRODUCTION

This memorandum provides lands and population inventory information to be included in Technical Memorandum #3: Existing Conditions for the 2017 Woodburn Transportation System Plan (TSP) update. This following information for the City of Woodburn is included:

- Comprehensive Plan and Zoning
- Vacant Land
- Natural Resource and Environmental Barriers
- Activity Centers
- Historic and Project Population Growth

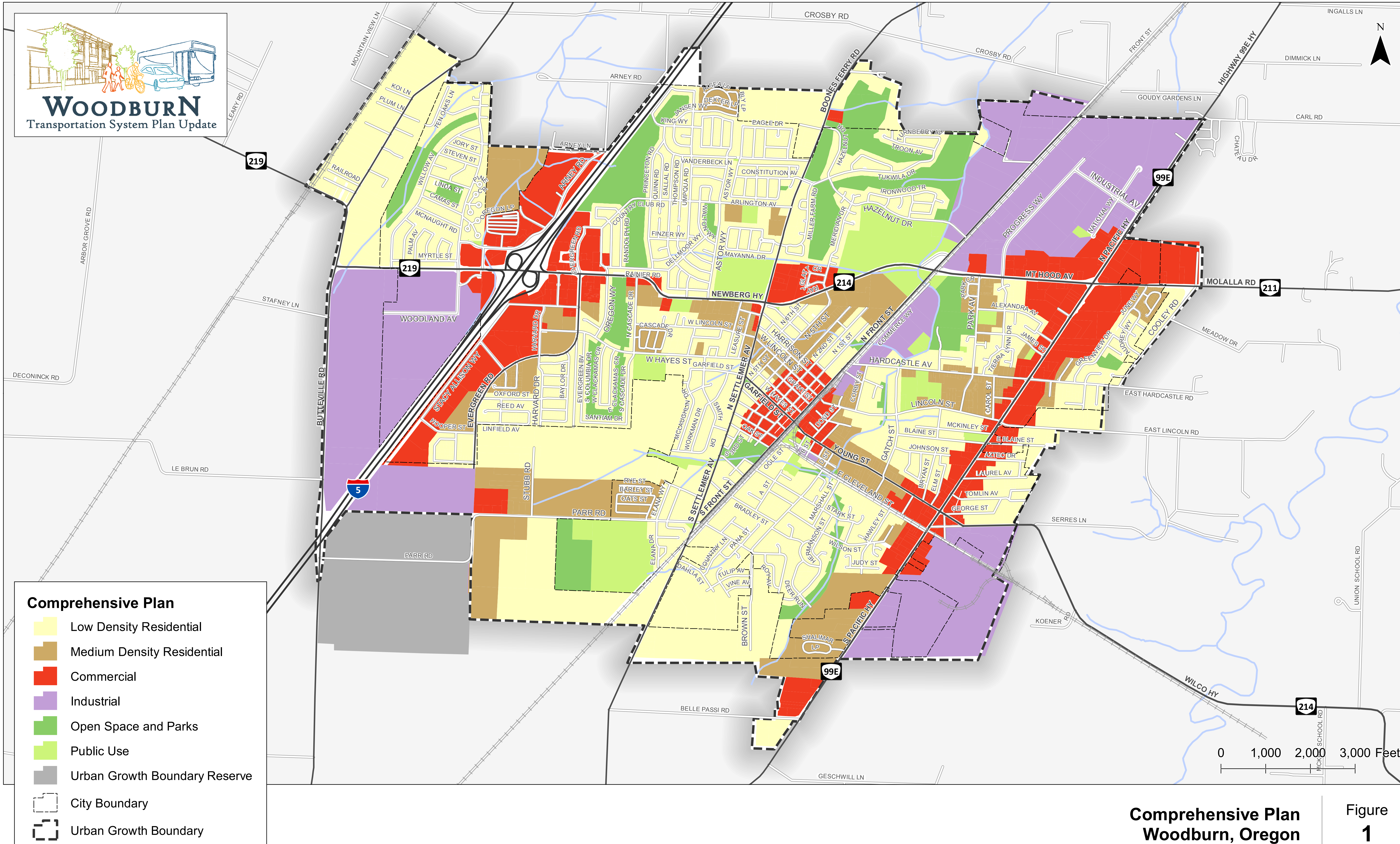
COMPREHENSIVE PLAN AND ZONING

Land within the City of Woodburn Urban Growth Boundary (UGB) and within city limits is subject to the City's land use and development regulations. Land use regulations are implemented through the Woodburn Development Ordinance (WDO). The following is a summary of the permitted land uses in the city and the associated requirements that govern development and redevelopment. This overview is intended to provide an indication of the type and intensity of land uses that can be expected within the planning horizon, which in turn will have an impact on future traffic generation. The number of trips specific uses generate, and where those uses are located within the community, will have a bearing on planning for appropriate types of transportation solutions.

Comprehensive Plan

The Comprehensive Plan provides a long-term guide for where and how future development will occur. Figure 1 shows the Comprehensive Plan land use designations. The Comprehensive Plan designations inform which zoning districts can be applied to an area. There are six principal Comprehensive Plan map designations within the existing UGB; Low Density Residential, Medium Density Residential, Industrial, Commercial, Open Space and Parks, and Public Use (see Figure 1).

The City's UGB is larger than the city limits; there are large areas on the periphery of the current city limits that have Comprehensive Plan land use designations that will allow for future urban expansion. The designated Urban Growth Boundary Reserve located outside the UGB near Interstate 5. The UGB reserve area will be considered a high priority area for when expansion of the UGB is necessary.



Comprehensive Plan
Woodburn, Oregon

Figure
1

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

Zoning

Figure 2 shows the location of zoning districts within the city limits. The City has 12 zones, including several commercial, industrial, and residential zoning districts. The City's zoning requirements provide the allowed uses and associated development regulations. Allowed uses and development regulations for each of the City's zones are provided for in the WDO and are summarized in Table 1.

The City's zoning is informed by the Comprehensive Plan designations; in the case of residential, commercial and industrial, multiple zones implement a single land use designation. Within the existing city limits, zoning is consistent with the Comprehensive Plan designations. As with the Comprehensive Plan map, commercial uses are focused around major and minor arterials, industrial uses are separated on the edges of city limits and residential uses are dispersed throughout the city.

Areas outside of the city limits but within the UGB will not be zoned for urban uses until they are annexed.

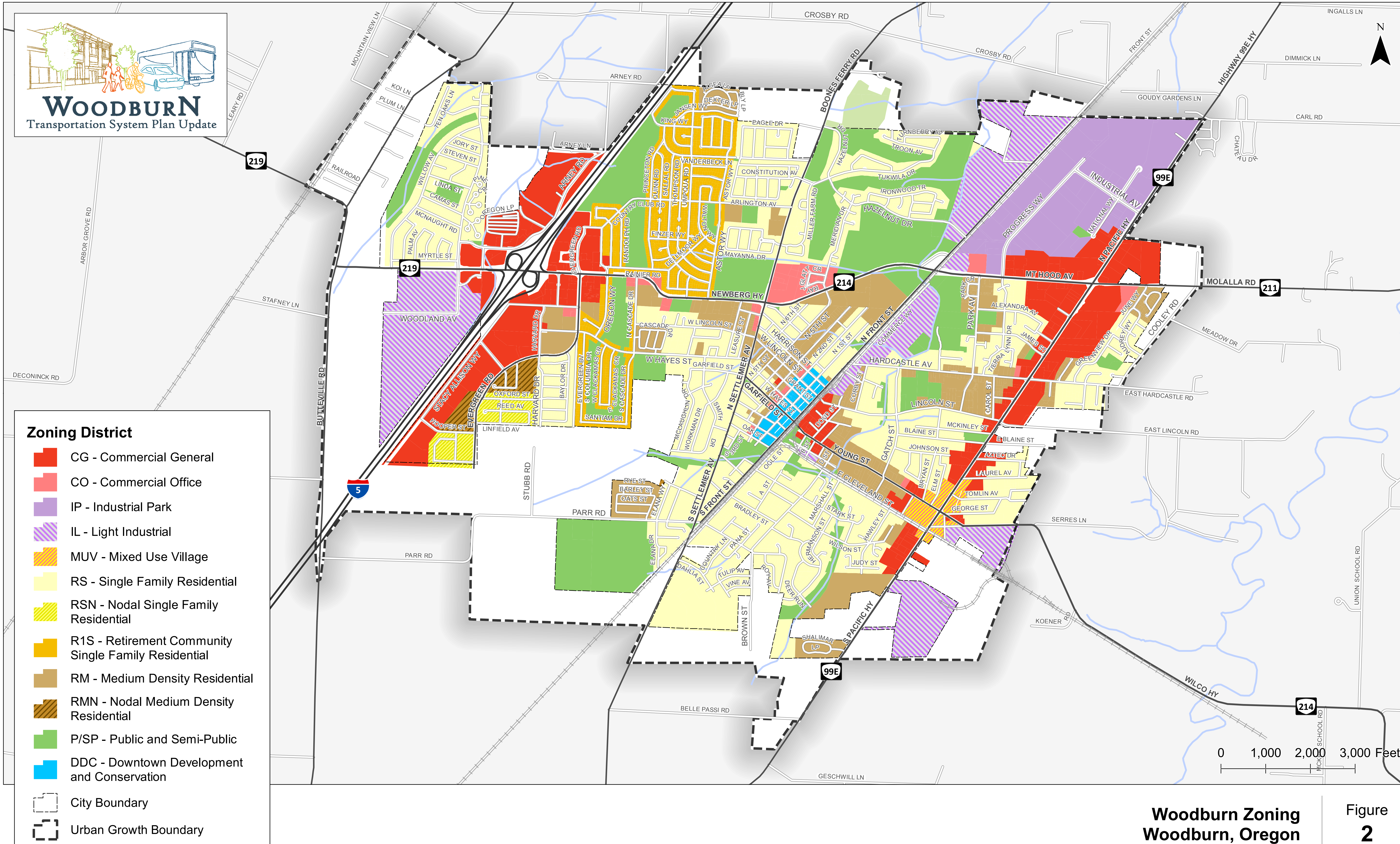
Table 1: Zoning Summary

ZONE		DESCRIPTION
RS	Single Family Residential	Standard density single-family residential development (typically 6,000 square foot lots).
RSN	Nodal Single Family Residential	Row houses (attached single-family homes) and detached single-family homes on smaller lots (typically 4,000 square foot lots).
R1S	Retirement Community Single Family Residential	Small lot residential development for seniors, allowing single-family homes on lots as small as 3,600 square feet.
RM	Medium Density Residential	Multi-family dwellings and care facilities up to 16 units per net acre.
RMN	Nodal Multi-Family Residential	Row houses, multi-family dwellings, and care facilities at higher densities than non-nodal zones.
DDC	Downtown Development Conservation	The community's retail core, providing for unique retail and convenient shopping.
CG	Commercial General	Primary commercial area, providing for businesses required extensive land intensive outdoor storage and display of merchandise, equipment, or inventory.
CO	Commercial Office	Office type development with limited retail activity.
MUV	Mixed Use Village	Provides efficient use of land that promotes employment and housing through pedestrian-oriented development.

ZONE		DESCRIPTION
NNC	Neighborhood Nodal Commercial	Provides areas to meet shopping needs of nearby residents in compact commercial setting.*
IL	Light Industrial	Industrial activities that include land-intensive activities.
IP	Industrial Park	Light industrial activities in a park-like setting.
P/SP	Public and Semi-Public	Public uses, parks, schools, and cemeteries.
SWIR	Southwest Industrial Reserve	High technology and research development activities.**

** Standards for Neighborhood Nodal Commercial (NNC) can be found in the WDO, however, there are currently no parcels within City limits that are zoned NNC.*

*** Standards for Southwest Industrial Reserve can be found in the WDO. However, the zoning designation will be applied to parcels identified as Southwest Industrial Reserve as shown in Figure 3 below once the area is within City limits.*



Woodburn Zoning
Woodburn, Oregon

Figure **2**

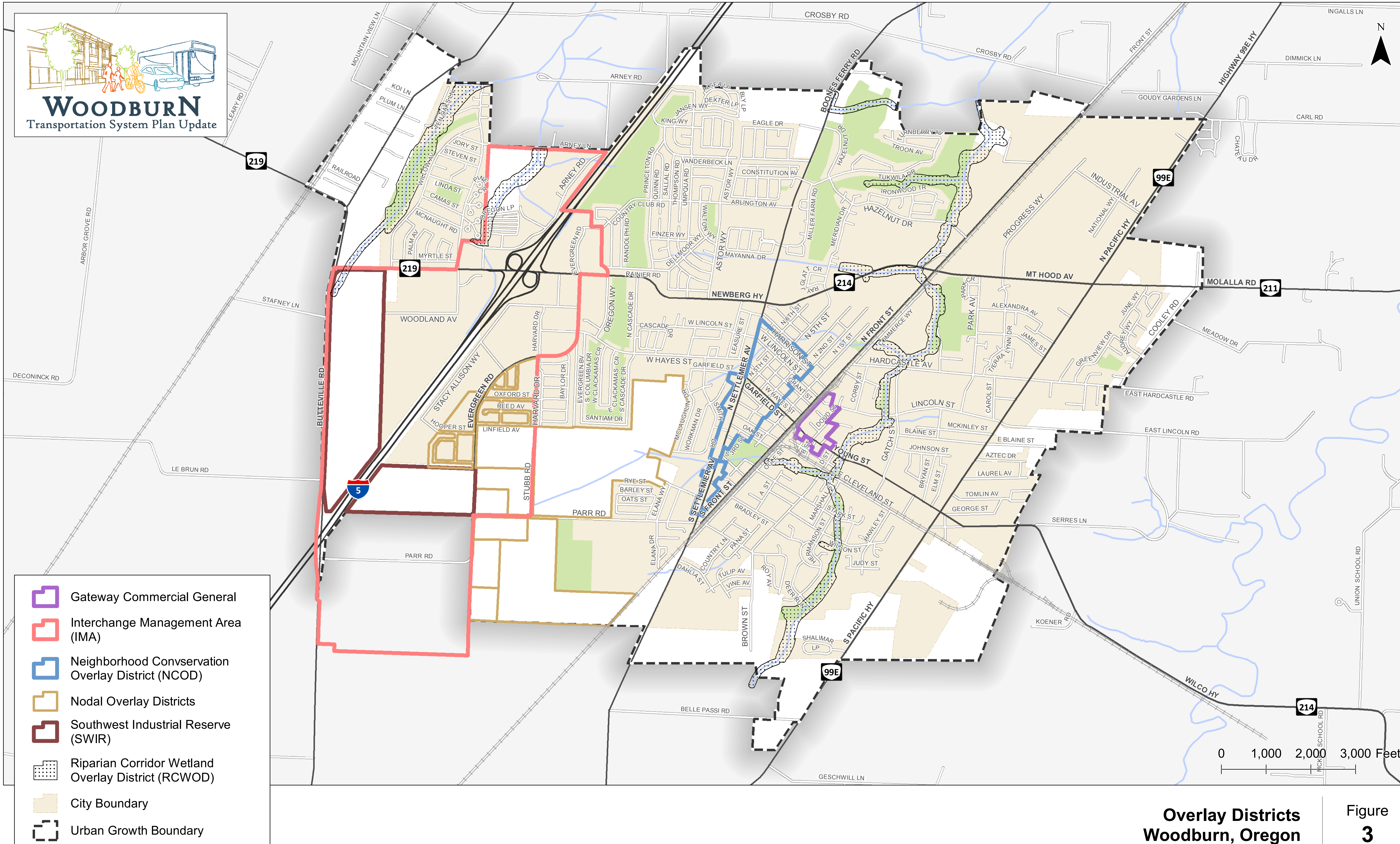
Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

Overlays

The WDO includes provisions for six different overlay districts that may apply to any portion of an existing underlying zoning district. Overlay districts provide regulations that are in addition to, or that modify existing zoning. Similar to how the zoning districts are organized, development regulations for each of the City's overlay districts are provided in the WDO. The six overlay districts are summarized in Table 2.

Table 2: Overlay Summary

OVERLAY	DESCRIPTION
Gateway Commercial General Overlay District	Allows for multi-family residential development in the CG zone. Prohibits specific uses and limits others.
Interchange Management Overlay District	Intended to preserve the long-term capacity of the I-5/Highway 214 Interchange. Complements provisions of the SWIR zone. Vehicle trip budget identifies the maximums amount of peak hour trips for each parcel within the IMA.
Neighborhood Conservation Overlay District	Intended to conserve the visual character and heritage of Woodburn's oldest and most central neighborhood.
Nodal Overlay District	Allows for a mix of residential developments with limited commercial development and accessible parks with a pedestrian focus.
Riparian Corridor and Wetlands Overlay District	Intended to conserve, protect, and enhance significant riparian corridors, wetlands, and undeveloped floodplains. More information is provided in the Natural Resources and Environmental Barriers section below.
Southwest Industrial Reserve	Intended to protect suitable industrial sites in Southwest Woodburn, near I-5, for the exclusive use of targeted industries.



Overlay Districts
Woodburn, Oregon

Figure
3

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

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VACANT AND REDEVLOPABLE LAND

Figure 4 shows vacant and redevelopable land within the UGB and City limits, by Comprehensive Plan Designation. All the land within the UGB and outside of City limits, except for areas subject to the City's RCWOD overlay, is considered vacant or redevelopable over the planning horizon. Land within City limits is considered vacant as determined by Marion County's tax assessment records. Figure 4 does not show redevelopable parcels within City limits.

As shown, most of the vacant commercial areas are concentrated near I-5; the largest parcels of which are located on Stacy Allison Way. Other vacant commercial areas found adjacent to or near Highway 99E in the eastern portion of the city. There are large areas outside of City Limits, within the UGB, that are designated for Industrial uses. The redevelopable Industrial areas near I-5 are subject to the Southwest Industrial Reserve (SWIR) Overlay which regulate the amount and type of development that can occur. Within City limits, most of the vacant areas designated for industrial uses are located adjacent to Front Street or Highway 99E. As described in more detail below, vacant commercial and industrial parcels tend to be relatively large in size – generally larger than one acre – and have been studied in detail as part of the City's *Woodburn Target Industry Analysis*.[1]

Vacant land designated Low Density Residential (LDR) or Medium Density Residential (HDR) vary greatly in size and are distributed throughout the UGB. Most of the vacant or redevelopable LDR and HDR areas are located outside of City limits in the southern portion of the UGB near Settlemier Avenue and in southwestern portion of the UGB near Evergreen Road and Parr Road. The majority of these areas are subject to the City's Nodal Overlay Districts, which requires a master planning effort prior to annexation into City limits. Similarly, there is a large vacant LDR area near Settlemier Avenue and a vacant HDR area adjacent to Highway 99E, both in the southern part Woodburn's City boundary.

Table 3 provides a gross estimate of vacant or redevelopable land within the UGB and City limits. The amount of vacant land is potentially overestimated as deductions for public rights-of-way, private streets, and public utility easements have not been factored.[2] As shown, the majority of vacant or redevelopable land within the UGB and City limits is designated for residential uses (641.6 acres of LDR areas and 180.2 acres for HDR areas). There is also a large amount of vacant or redevelopable areas designated for Industrial use; approximately 193 of the 307.6 acres is subject to the SWIR, which, as noted above, regulates the amount and type of development that can occur.

[1] ECONorthwest, 2016

[2] Portions of vacant or redevelopable parcels with the RCWOD Overlay were removed from the totals and were, overall, fairly minimal in size.

Table 3: Vacant Land by Comprehensive Plan Designation

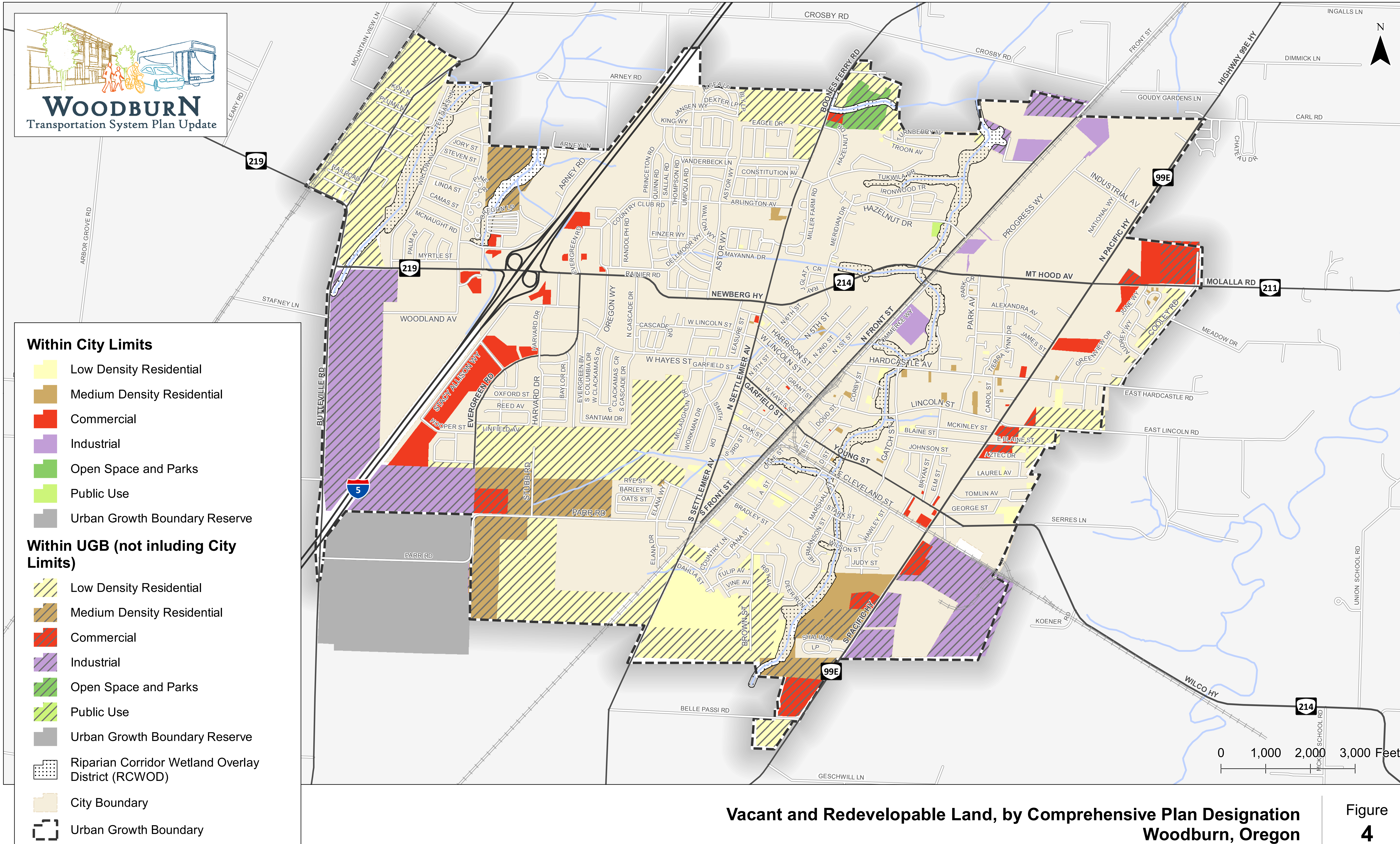
COMPREHENSIVE PLAN DESIGNATION	VACANT LAND (ACRES)		
	City Limits	UGB	Total
Low Density Residential	70.0	571.6*	641.6
Medium Density Residential	30.7	149.5*	180.2
Commercial	84.2	65.4	149.6
Industrial	28.6	307.7	336.3
TOTAL	**213.5**	**1,094.2**	**1,307.7**

** Vacant land includes Nodal and non-Nodal Designations combined.*

The *Woodburn Target Industry Analysis* confirms that there are four Opportunity Sites – two commercial areas and two industrial areas – that are targeted for future development: Southwest Industrial Reserve Area, Stacy Allison Way, Commerce Way/Front Street Area, and Highway 99 and Young Street Commercial. Table 4 includes a summary description of these areas; Figure 5 illustrates their location.

Table 4: Opportunity Sites

OPPORTUNITY SITES	SUMMARY
Southwest Industrial Reserve Area	The area is a 188-acre site in five parcels. It is currently outside of the city limits. The site is highly visible from I-5 and is within one-quarter mile of the I-5 interchange. It will be zoned Industrial once it is brought into City limits.
Stacy Allison Way Area	The area is a 47-acre site in eight parcels. The site is near I-5, being within one-quarter mile of the I-5 interchange. It is currently within City limits and zoned for Commercial General (CG).
Commerce Way/Front Street Industrial Area	The area is a 20-acre site in four parcels. The site adjacent to Highway 214 and approximately 1.7 miles from I-5. It is within City limits and zoned for Light Industrial (IL).
Hwy 99 and Young Street Commercial Area	The area is a 10-acre site in nine parcels. The site is visible from Highway 99. It is within City limits and zoned as Mixed-Use Village (MUV).



Vacant and Redevelopable Land, by Comprehensive Plan Designation
Woodburn, Oregon

Figure 4

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

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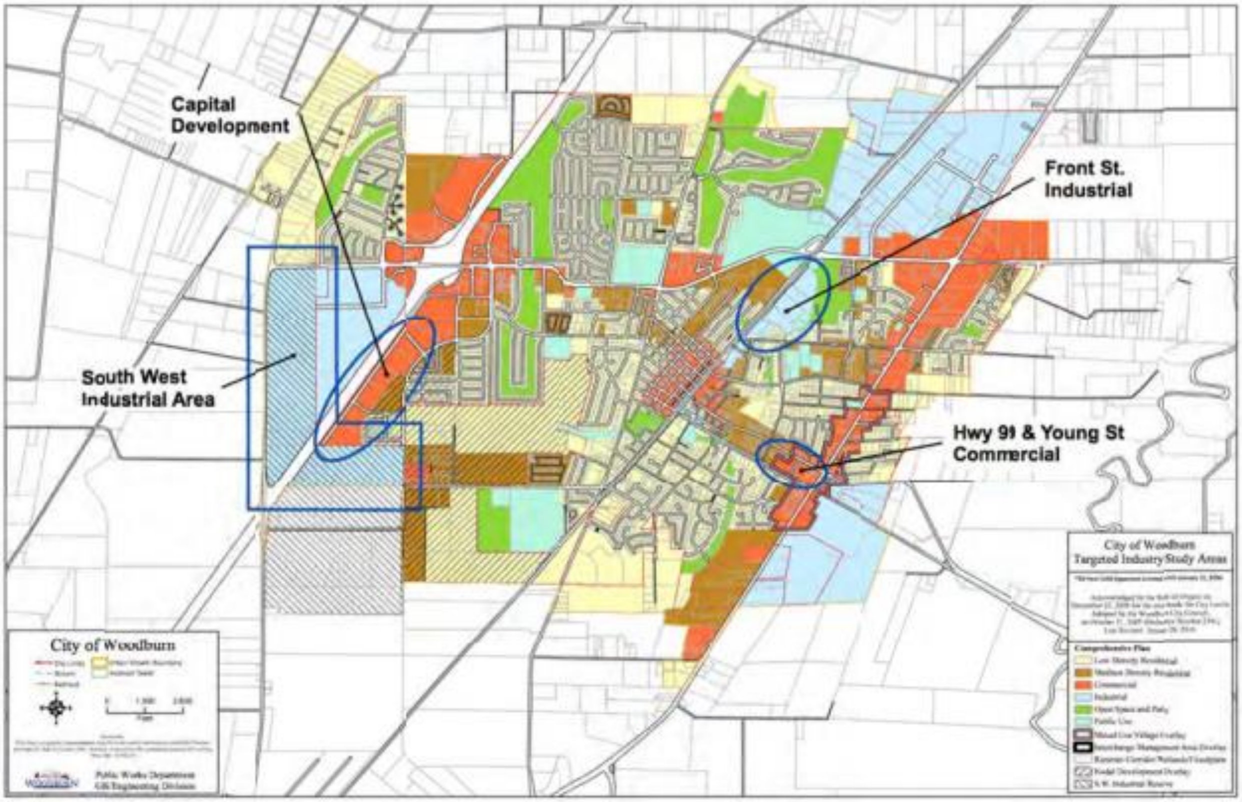


Figure 5: Opportunity Sites (Woodburn Target Industry Analysis, ECONorthwest, 2016)

NATURAL RESOURCES AND ENVIRONMENTAL BARRIERS

Existing natural resources and environmental features influence the siting, construction, and cost of transportation improvements. The following sections illustrate and describe areas within Woodburn that may pose barriers to providing transportation access or improvements. The inventory is based on available Geographic Information System (GIS) maps, previous reports, and known resource sites.

Riparian Corridor and Wetlands Overlay

Riparian Corridors and Wetlands in Woodburn are regulated by the Riparian Corridor and Wetlands Overlay District (RCWOD), as shown in Figure 6. The purpose of the RCWOD is to conserve, protect, and enhance significant riparian corridors, wetlands, and undeveloped floodplains, as well as protect and enhance water quality, prevent property damage, and limit activity.

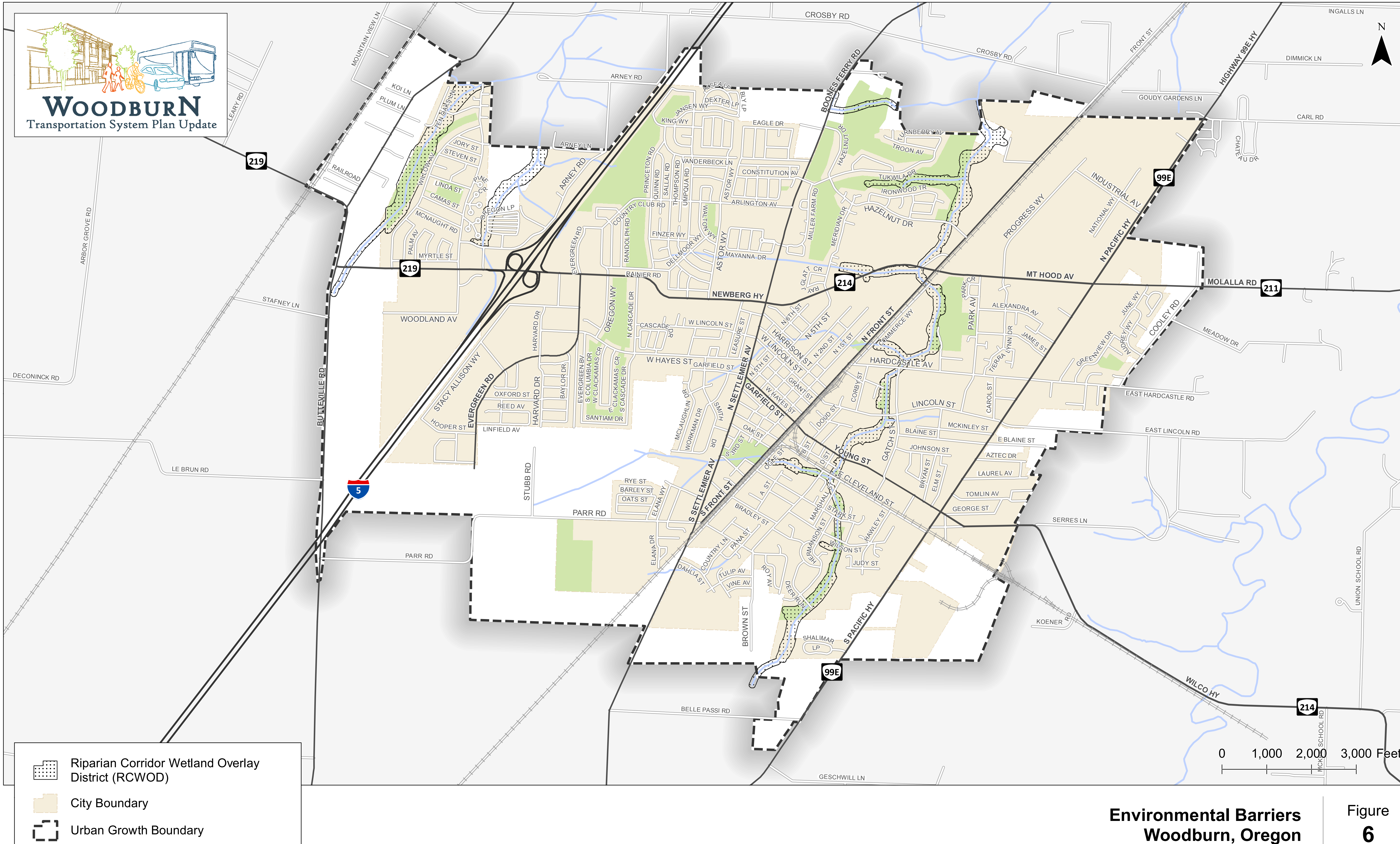
The RCWOD is a combination of three different environmental constraints: riparian corridors, significant wetlands, and the 100-year floodplain. These are described as follows:

- Riparian corridors extend approximately 50 feet from the top of the bank of the main stem of Senecal Creek and Mill Creek and those reaches of their tributaries identified as fish-bearing perennial streams on the Woodburn Wetlands Inventory Map.
- Significant wetlands are those that have been identified on the Woodburn Wetlands Inventory Map.
- The 100-year floodplain on properties identified as vacant or partly vacant on the 2005 Woodburn Buildable Land Inventory

ACTIVITY CENTERS

Within Woodburn city limits, land uses adjacent to Arterials and Collectors are generally automobile-oriented in nature, and include mostly industrial and commercial uses. Beyond the commercial areas, the designated land uses change to residential. Since the residential areas are segregated from the commercial areas, walking and bicycling to these locations becomes less convenient.

Connecting residents and workers to services they use on a daily basis can be accomplished by well-considered land use planning. Activity centers where the transportation network should support multi-modal and accessible public transportation are shown in Figure 7. Key civic institutions such as Woodburn City Hall, the public library, and the U.S. Post Office, as well as the Woodburn Aquatic Center, are centrally located one block away from Front Street, a critical city arterial. Shopping centers, medical services, and schools and parks are generally dispersed throughout the city.



Environmental Barriers
Woodburn, Oregon

Figure
6

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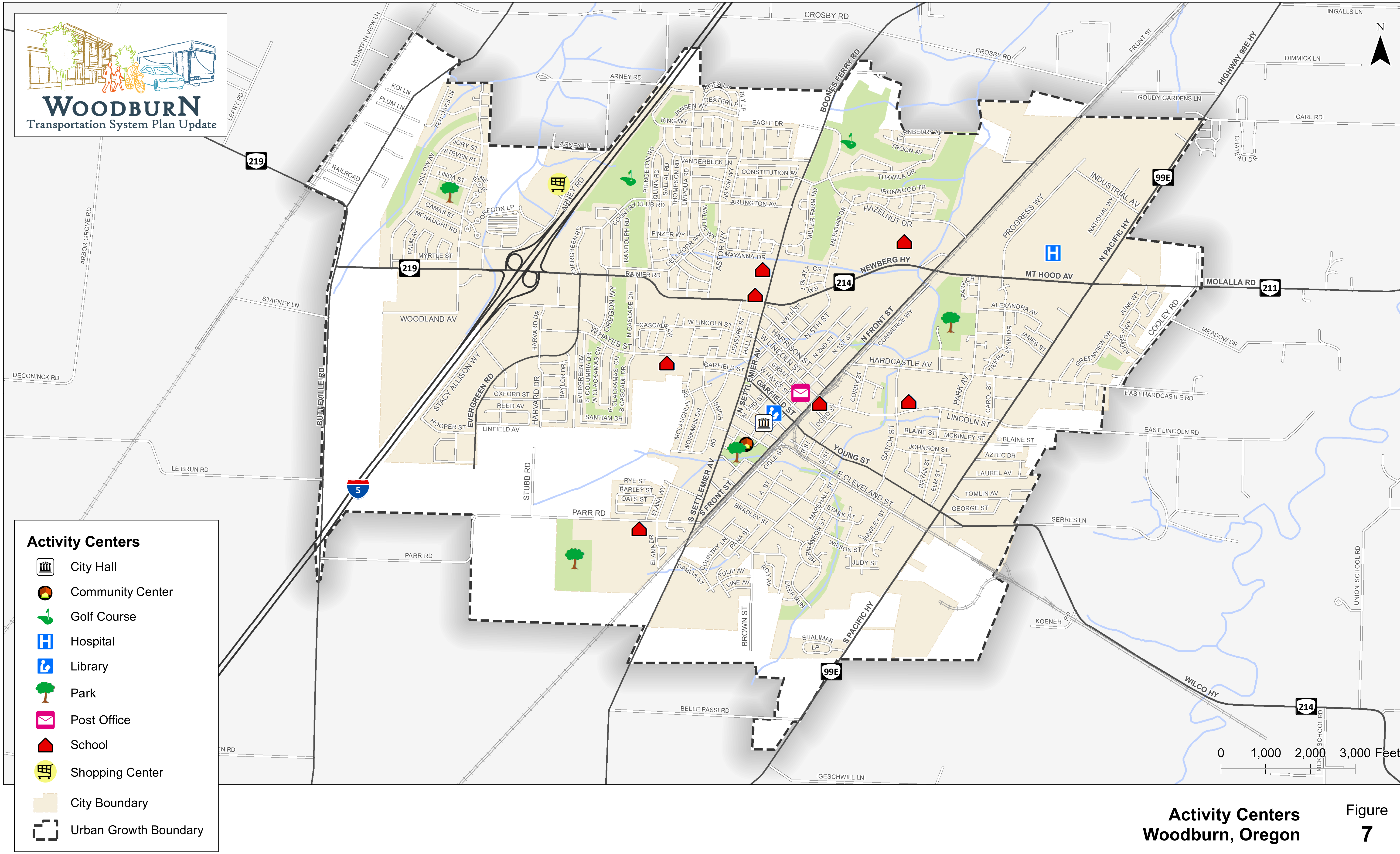
Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn



Activity Centers
Woodburn, Oregon

Figure
7

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn

HISTORIC AND PROJECTED POPULATION GROWTH

Historic and projected population information is from the Portland State University Population Research Center (PRC).[3] The PRC publishes an annual Oregon Population Report that presents the population estimates for Oregon and its counties and incorporated cities. The most recent report provides population estimates up to the year 2016.[4]

Historic Population

As shown in Table 5, the population in Woodburn has grown by approximately 710 people between 2010 and 2016 – approximately 3% growth over that time. By comparison, Marion County and Oregon have grown at a faster pace during the same period - approximately 4.7% and 6.2% growth respectively.

Table 5: Population Research Center Annual Population Estimates

	2016	2015	2014	2013	2012	2011	2010 (REV)
Oregon	4,076,350	4,013,845	3,962,710	3,919,020	3,883,735	3,857,625	3,837,300
Marion County	333,950	329,770	326,150	322,880	320,495	318,150	315,900
Woodburn	24,795	24,670	24,455	24,330	24,090	24,090	24,085

Older historical data is available through U.S. Census Population counts.[5] As shown in Table 6, the population of Woodburn has grown by 10,676 people between 1990 and 2010 – approximately 80% growth. By comparison, Woodburn growth outpaced Marion County (38%) and Oregon (35%) by a wide margin over the same period of time.

Table 6: U.S. Census Population

	2010	2000	1990
Oregon	3,831,074	3,421,436	2,842,321
Marion	315,335	284,838	228,483
Woodburn	24,080	20,100	13,404

3 https://www.pdx.edu/prc/home

4 https://www.pdx.edu/prc/sites/www.pdx.edu.prc/files/Marion_Report_2017_Final.pdf

5 Ibid.

Projected Population

Projected population is one of the primary tools for developing planning policies as well as determining future urban growth boundary expansions. PRC develops projected population forecasts based on historic and current trends, as well as assuming the likelihood of future events. Historically, Oregon law required counties to prepare coordinated population forecasts. In recent years, responsibility for coordinated population forecasting has been assigned to the PRC at Portland State University.[6]

Total population in Marion County and in Woodburn will likely grow at a slightly faster pace in the near-term (2017 to 2035) compared to the long term. An aging population largely drives the tapering growth rates – a demographic trend which is expected to contribute to diminishing natural increase (more births than deaths). Even so, Woodburn's total population is projected to increase by more than 7,976 over the next 18 years (2017-2035) and by more than 20,051 over the entire 50-year forecast period (2017-2067).

Table 7: Projected Population and Average Annual Growth Rate (AAGR)

	2017	2035	2040	2067	SHARE OF COUNTY 2017	SHARE OF COUNTY 2035	SHARE OF COUNTY 2040	SHARE OF COUNTY 2067
Marion County	337,773	405,352	421,508	513,142	100%	100%	100%	100%
Woodburn (UGB)	26,211	34,187	36,322	46,262	7.7%	8.2%	8.6%	8.0%

ODOT's Transportation Planning Analysis Unit (TPAU) also develops forecast models which project population by transportation analysis zone (TAZ). The previous transportation model – base year 2000 and future year of 2035 – is in the process of being updated with an interim year scenario for 2015 and a future year 2040 scenario to support the TSP update effort. Updates to the model are informed by PRC's population forecasts; however, areas analyzed for purposes of trip generation analysis are not coterminous with the City's UGB.

[6] Oregon House of Representatives and Senate approved HB 2253, requiring the PRC to issue population forecasts for land use planning.

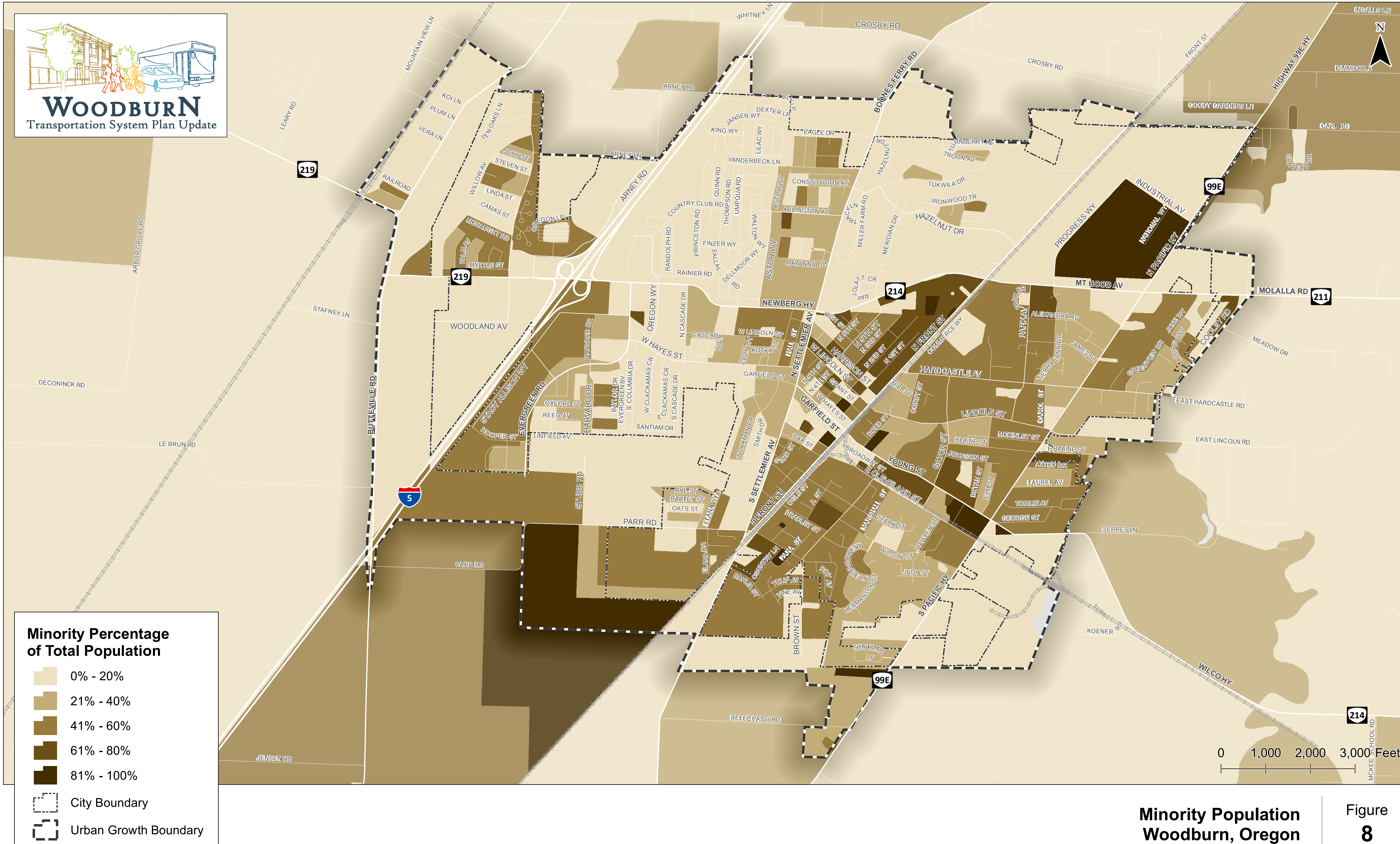
Table 8: TPAU Forecast: Total of TAZ's

TPAU FORECAST	2035	2040
Population	46,309	XX
Households	16,014	15,416

Environmental Justice Analysis

The socio-economically sensitive populations within Woodburn consist of minorities, elderly people (people 65 years of age or older), people with low-income (people who earn 0 to 1.99 times the federal poverty level), and people with disabilities. 2010 census data for minorities and elderly people was collected at the census block level and shows the concentrations of these populations on an individual basis. Data for people with low income and people with disabilities was collected at the census block group level and shows the concentration of these populations as a percentage of the overall population. The data was combined with a general understanding of local conditions to ensure that the existing transportation system meets the needs of these individuals. Figure 8 through Figure 11 illustrate the populations within Woodburn.

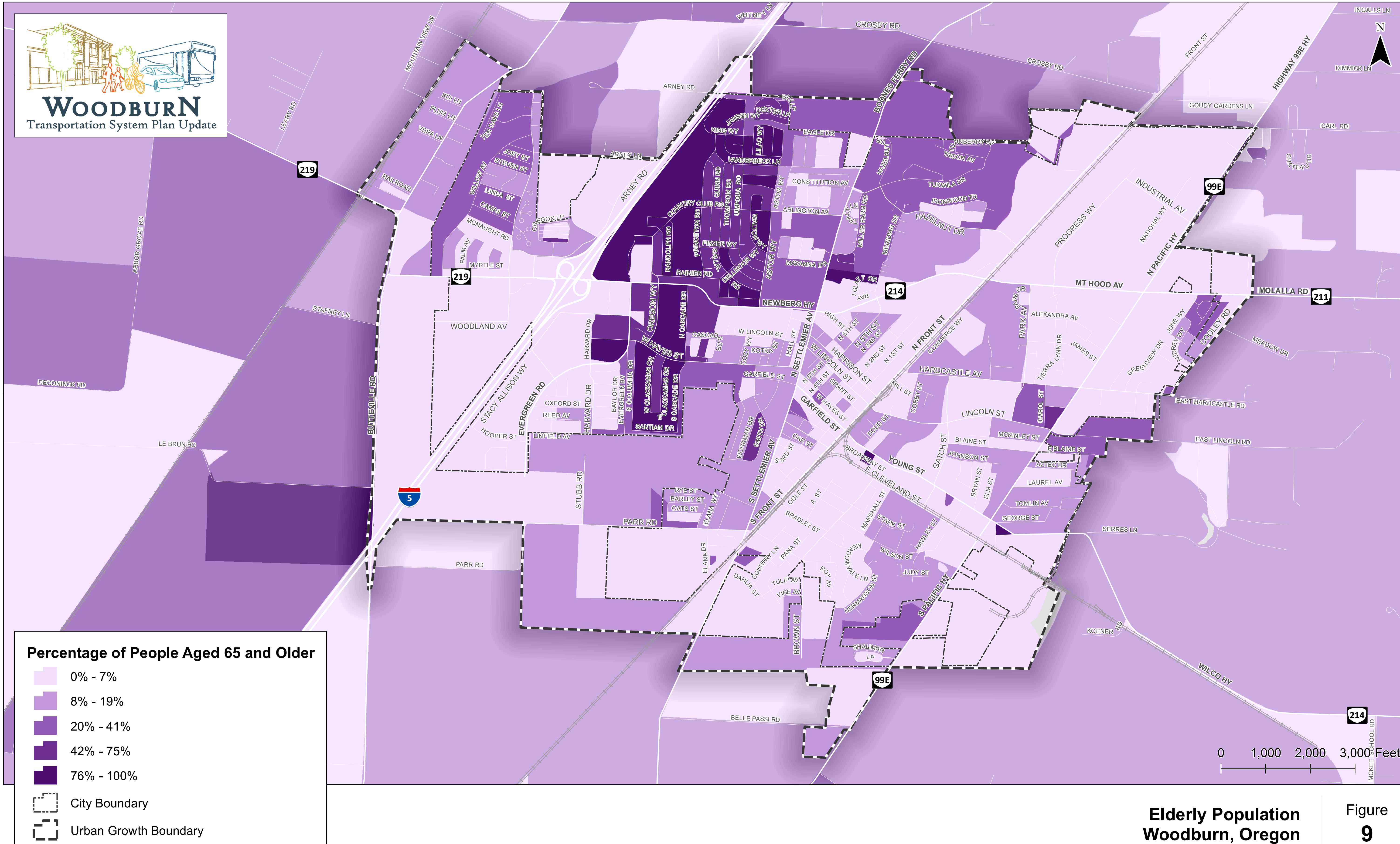
The socioeconomic conditions within the city will be considered in the development of the TSP update to ensure that the future transportation system meets the needs of the entire city while not creating adverse conditions for select population segments.



Minority Population
Woodburn, Oregon

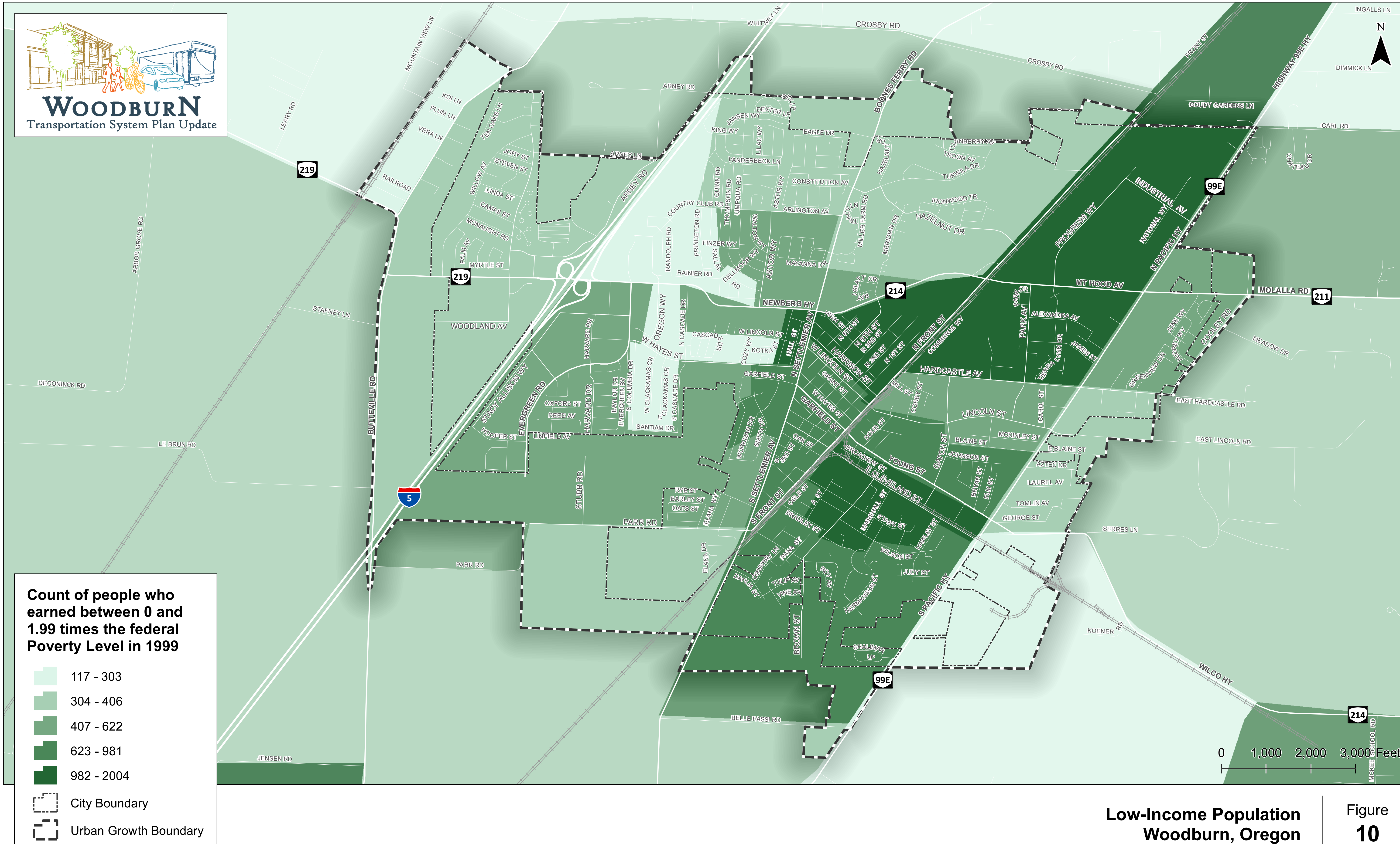
Figure
8

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: Census Table DEC_10_PL_P1



Elderly Population
Woodburn, Oregon

Figure
9



Low-Income Population
Woodburn, Oregon

Figure
10

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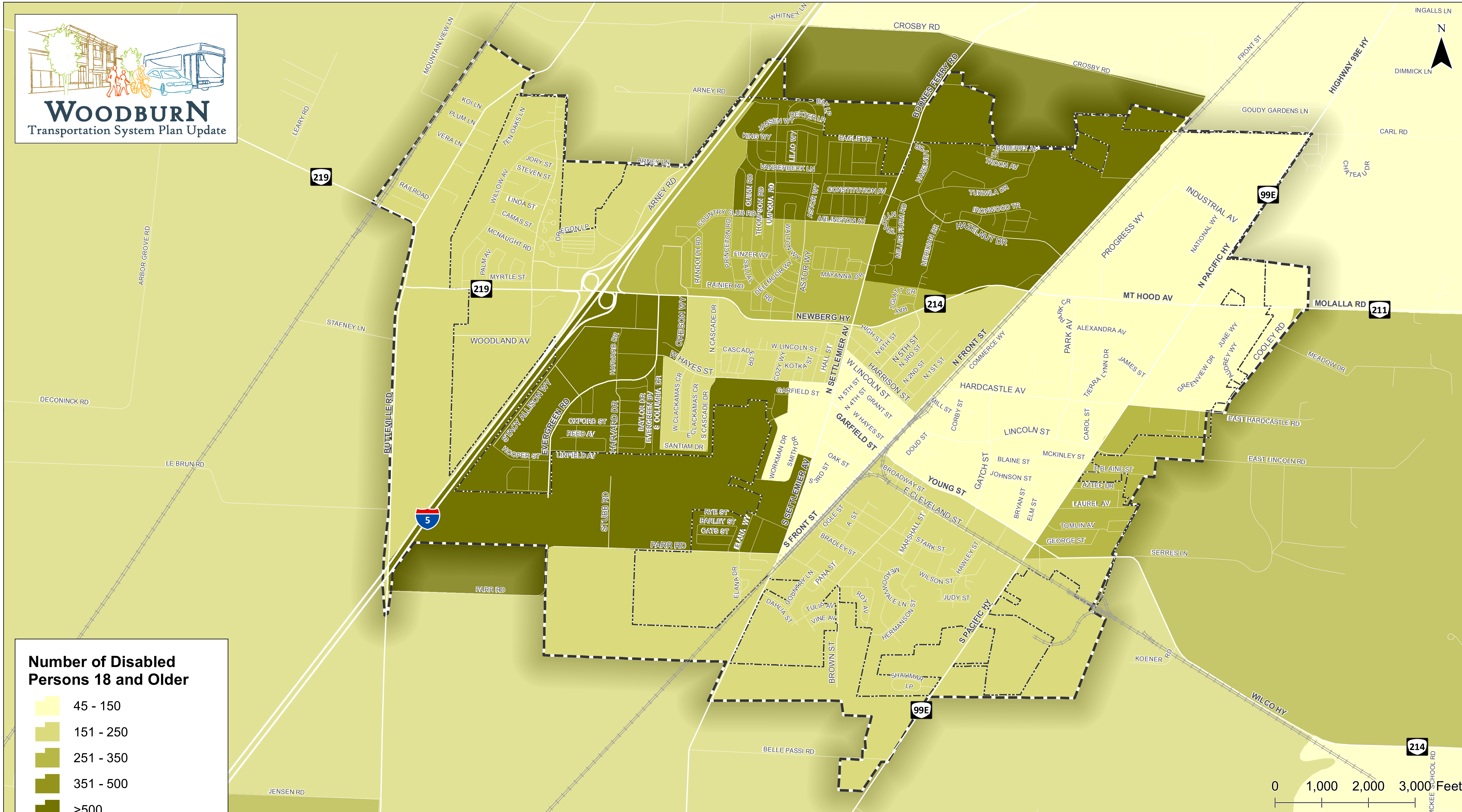
Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: Census Table DEC_00_SF3_P088



Number of Disabled Persons 18 and Older

- 45 - 150
- 151 - 250
- 251 - 350
- 351 - 500
- >500
- City Boundary
- Urban Growth Boundary

Population with Disabilities
Woodburn, Oregon

Figure 11

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: Census Table ACS_15_5YR_C21007

Attachment B

Bicycle and Pedestrian Level of Traffic Stress Methodology

BICYCLE LEVEL OF TRAFFIC STRESS

The Oregon Department of Transportation (ODOT) Analysis Procedures Manual (APM) provides a methodology for evaluating bicycle facilities within urban and rural environments called Bicycle Level of Traffic Stress (BLTS). As applied by ODOT, this methodology classifies four levels of traffic stress that a bicyclist can experience on the roadway, ranging from BLTS 1 (little traffic stress) to BLTS 4 (high traffic stress). A road segment that is rated BLTS 1 generally has low traffic volumes and travel speeds and is suitable for all cyclists, including children. A road segment that is rated BLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most cyclists. Per the APM, BLTS 2 is considered a reasonable target for bicycle facilities due to its acceptability with the majority of cyclists.

The BLTS score is determined based on the speed of the roadway, the number of travel lanes per direction, the presence and width of an on-street bicycle lane and/or adjacent parking lane, and several other factors. For the analysis conducted in Woodburn, an initial inventory was supplemented with base assumptions to determine the BLTS values for roadways segments throughout the city.

- Bike lanes on major and minor arterials assumed to be six-feet-wide
- Bike lanes on arterials assumed to be five-feet-wide
- Parking lanes assumed to be five-feet-wide

With the above widths defined and the presence of bike lanes and parking lanes noted via an inventory of the city’s roadways, BLTS values were determined for all major arterial, minor arterial, service collector, and access street in Woodburn.

PEDESTRIAN LEVEL OF TRAFFIC STRESS

The APM provides a methodology for evaluating pedestrian facilities within urban and rural environments called Pedestrian Level of Traffic Stress (PLTS). As applied by ODOT, this methodology classifies four levels of traffic stress that a pedestrian can experience on the roadway, ranging from PLTS 1 (little traffic stress) to PLTS 4 (high traffic stress). A road segment that is rated PLTS 1 generally has low traffic volumes and travel speeds and has a sidewalk that is separated from vehicular traffic. These segments are generally suitable for all users, including children. A road segment that is rated PLTS 4 generally has high traffic volumes and travel speeds and is perceived as unsafe by most adults. Road segments rated PLTS 4 also include those with no sidewalks or other pedestrian facilities. Per the APM, PLTS 2 is considered a reasonable target for most pedestrian facilities due to its acceptability with the majority of people.

The PLTS score is based on four criteria, including sidewalk condition, physical buffer type, total buffering width, and general land use. All four criteria are scored from 1 to 4 and the highest score determines the overall score for the road segment. For the analysis conducted in Woodburn, an initial inventory was supplemented with base assumptions to determine the PLTS values for roadways segments throughout the city.

- Sidewalk condition was assumed to be fair unless a different condition was clearly visible via aerial imagery
- Sidewalks assumed to be six-feet-wide
- Landscape strips assumed to be six-feet-wide
- Striped shoulders assumed to be four-feet-wide
- Non-striped shoulders assumed to be zero-feet-wide

With the above widths defined and an inventory of the city's existing pedestrian facilities, PLTS values were determined for all major arterial, minor arterial, service collector, and access street in Woodburn.

Attachment C
Historical PCI Data and Statistics

City of Woodburn
190 Garfield Street
Woodburn, OR 97071
(503) 980-2408

Network Summary Statistics

Printed: 02/09/2018

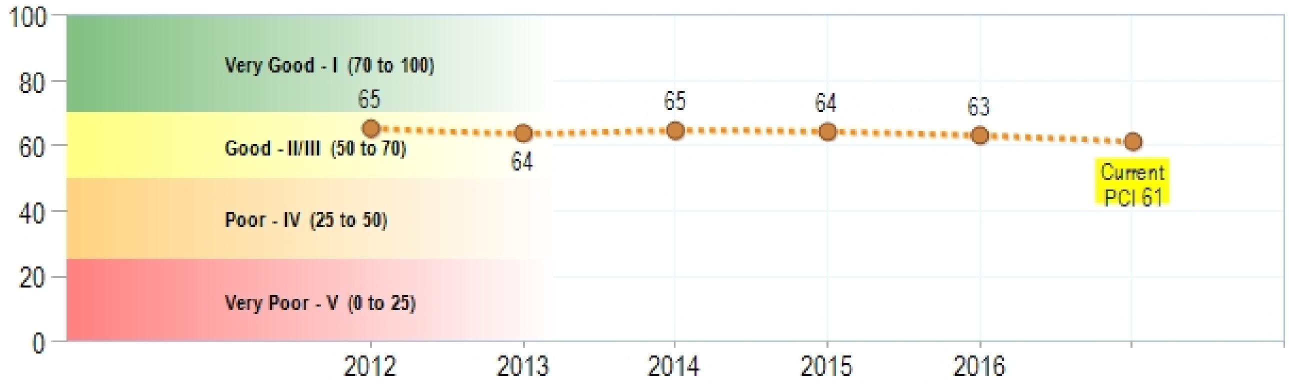
	Total Sections	Total Center Miles	Total Lane Miles	PCI
Collector	48	9.35	21.06	62
Residential/Local	355	43.85	87.63	60
Other	27	4.96	9.91	59
Urban Minor Arterial (4)	25	6.04	14.71	71
Total	**455**	**64.20**	**133.30**	
		Overall Network PCI as of 2/9/2018:		**61**
****Combined**	**22**	**1.55**	**3.04**	**N/A**
Residential/Local	2	0.12	0.24	N/A
Gravel	20	1.43	2.80	N/A

**** Combined Sections are excluded from totals. These Sections do not have a PCI Date - they have not been inspected or had a Treatment applied.**

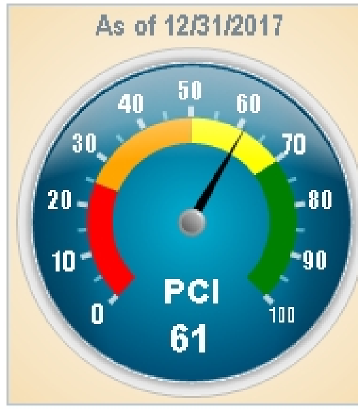
City of Woodburn, OR

Run Date: 12/31/2017

*Historical Pavement Condition Trends



*Current PCI



Network Inventory

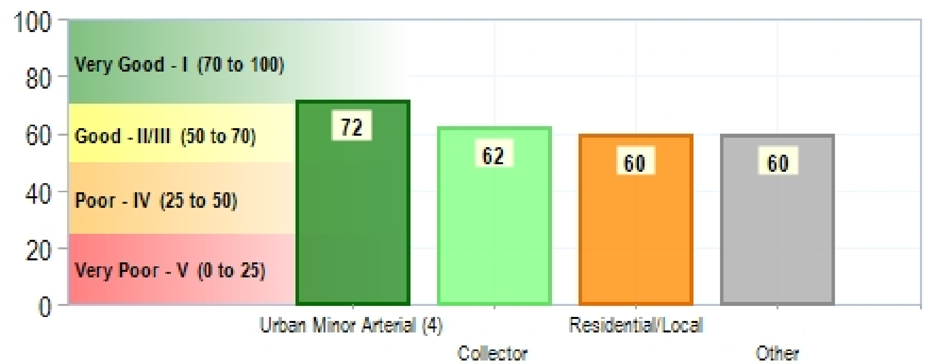
Pavement Area: 0.4
(square miles)

Miles: 65.8

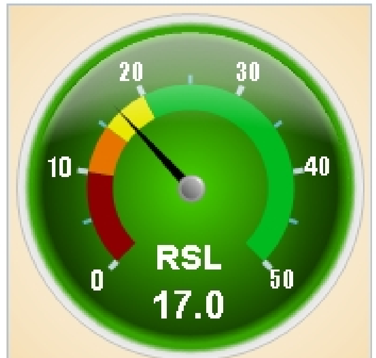
Lane Miles: 136.3

Sections: 477

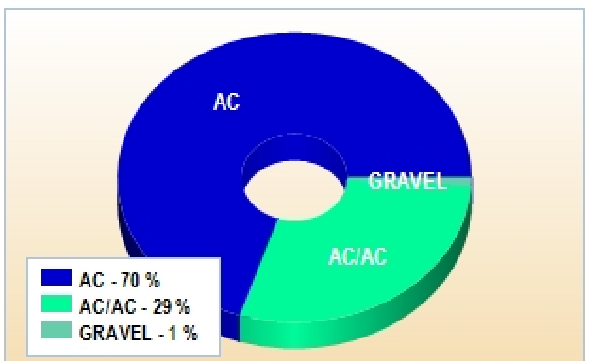
*Current PCI by Functional Class



Remaining Service Life (years)

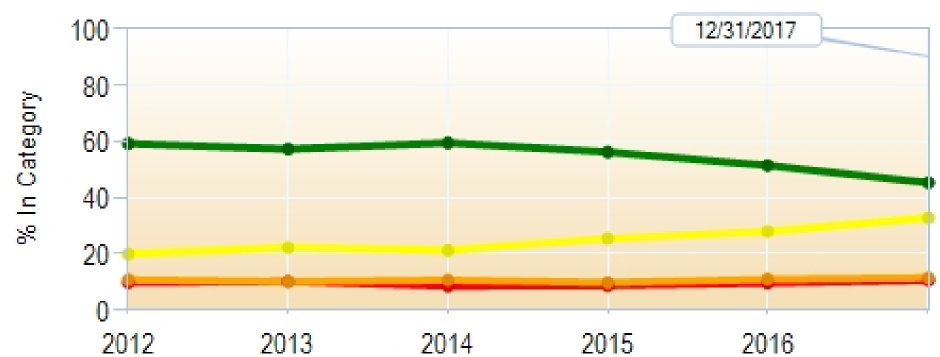


Surface Type



Historical Network Condition Trends

From 12/31/2016		
Very Good	44%	-7
Good	33%	+5
Poor	12%	+1
Very Poor	11%	+1



City of Woodburn
190 Garfield Street
Woodburn, OR 97071
(503) 980-2408

PCI History

Printed: 04/01/2016

Street ID	Section ID	Street Name	Last Updated	PCI
ACACIA	**319**	**ACACIA AVE**	**06/13/2011**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/13/2011	80	No	
03/13/2009	82	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	48	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AKSENI	**412**	**AKSENIA ST**	**07/14/2014**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/14/2014	80	No	
07/01/2014	79	No	
06/22/2011	80	No	
03/13/2009	81	Yes	
06/23/2004	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ALDERL	**306**	**ALDER LANE**	**03/13/2009**	**16**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	16	Yes	
06/23/2003	35	Yes	
07/01/1997	56	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ALETHA	**362**	**ALETHA ST**	**03/13/2009**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	72	Yes	
06/09/2003	89	Yes	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ALEXAN	**119A**	**ALEXANDRA AVE**	**07/01/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2015	100	No	2001 CITY MEASUREAD ADT
03/13/2009	18	Yes	2001 CITY MEASUREAD ADT
06/09/2003	46	Yes	2001 CITY MEASUREAD ADT
07/01/1997	76	Yes	2001 CITY MEASUREAD ADT

Street ID	Section ID	Street Name	Last Updated	PCI
ALEXAN	**119B**	**ALEXANDRA AVE**	**07/01/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2015	100	No	ADT ON 4/7/2010
03/13/2009	22	Yes	ADT ON 4/7/2010
06/09/2003	31	Yes	ADT ON 4/7/2010
07/01/1997	57	Yes	ADT ON 4/7/2010

Street ID	Section ID	Street Name	Last Updated	PCI
ALEXAN	**119C**	**ALEXANDRA AVE**	**06/02/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/02/2015	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
ALEXAN	**121**	**ALEXANDRA CT**	**06/02/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/02/2015	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
ALEXAN	**121**	**ALEXANDRA CT**	**06/02/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	24	Yes	
06/09/2003	54	Yes	
07/01/1997	77	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AMITYC	**172**	**AMITY CT**	**03/13/2009**	**51**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	51	Yes	
06/23/2003	67	Yes	
07/01/1997	62	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AMYCT	**123**	**AMY CT**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	64	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ANDREA	**419**	**ANDREA`S CT**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ANNAST	**359**	**ANNA ST**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
04/16/2008	80	No	
06/09/2003	84	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ARLING	**426**	**ARLINGTON AVE**	**06/01/2009**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	76	No	ADT ON 9/3/2000
03/13/2009	75	Yes	ADT ON 9/3/2000
06/23/2004	89	Yes	ADT ON 9/3/2000

Street ID	Section ID	Street Name	Last Updated	PCI
ARNEYL	**431**	**ARNEY LN**	**08/04/2015**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	73	No	
03/13/2009	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ARNEYR	**429A**	**ARNEY RD**	**09/04/2015**	**27**

Date Updated	PCI Hist	PCI from Inspection	Comments
09/04/2015	27	No	ADT ON 7/31/2008
03/13/2009	54	Yes	ADT ON 7/31/2008

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Street ID	Section ID	Street Name	Last Updated	PCI
ARNEYR	**429B**	**ARNEY RD**	**08/04/2015**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	95	No	ADT ON 6/2/2009
06/01/2014	100	No	ADT ON 6/2/2009
03/13/2009	65	Yes	ADT ON 6/2/2009

Street ID	Section ID	Street Name	Last Updated	PCI
ARNEYR	**429C**	**ARNEY RD**	**08/04/2015**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	95	No	ADT ON 11/21/2012
06/01/2014	100	No	ADT ON 11/21/2012
03/13/2009	63	Yes	ADT ON 11/21/2012

Street ID	Section ID	Street Name	Last Updated	PCI
ARTHUR	**221A**	**ARTHUR ST**	**03/13/2009**	**10**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	10	Yes	
06/23/2003	20	Yes	
08/01/1997	12	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ARTHUR	**221B**	**ARTHUR ST**	**06/10/2014**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/10/2014	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
ARTHUR	**221C**	**ARTHUR ST**	**07/14/2014**	**44**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/14/2014	44	No	
03/13/2009	34	Yes	
06/23/2003	67	Yes	
08/01/1997	68	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AST	**153A**	**A ST**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AST	**153B**	**A ST**	**03/13/2009**	**13**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	13	Yes	
06/23/2003	30	Yes	
07/01/1997	27	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ASTORC	**341**	**ASTOR CT**	**06/15/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	79	No	
03/13/2009	79	Yes	
06/09/2003	88	Yes	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ASTORW	**343A**	**ASTOR WAY**	**07/14/2014**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/14/2014	77	No	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter
06/04/2014	68	No	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter
03/13/2009	69	Yes	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter
06/09/2003	85	Yes	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter
07/01/1997	83	Yes	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter
01/01/1990	100	No	ADT ON 9/10/2010 = 1239 ADT ON 1/12/2012 = 1396 No PSL -Residental 25 MPH Type C curb & gutter

Street ID	Section ID	Street Name	Last Updated	PCI
ASTORW	**343B**	**ASTOR WAY**	**03/13/2009**	**71**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	71	Yes	
06/09/2003	85	Yes	
07/01/1997	86	Yes	
01/01/1990	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
ASTORW	**343C**	**ASTOR WAY**	**06/24/2010**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	80	No	
03/13/2009	63	Yes	
06/09/2003	80	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AUDREY	**100A**	**AUDREY WAY**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/09/2003	76	Yes	
07/01/1997	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AUDREY	**100B**	**AUDREY WAY**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2004	77	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AUSTIN	**242**	**AUSTIN AVE**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/09/2003	36	Yes	
07/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
AZTECD	**111**	**AZTEC DR**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
06/23/2003	87	Yes	
07/01/1997	81	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BARNST	**101**	**BARN ST**	**03/13/2009**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	87	Yes	
06/09/2003	71	Yes	
07/01/1997	65	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BAYLOR	**404A**	**BAYLOR ST**	**07/10/2012**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	81	No	
06/17/2011	81	No	
03/13/2009	81	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BAYLOR	**404B**	**BAYLOR ST**	**07/10/2012**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	78	No	
06/17/2011	77	No	
03/13/2009	78	Yes	
06/23/2004	91	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BENBRO	**207A**	**BEN BROWN LANE**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
06/23/2003	83	Yes	
07/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BENBRO	**207B**	**BEN BROWN LANE**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	75	Yes	
07/01/1997	65	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BERNAR	**365**	**BERNARD DR**	**06/24/2010**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	73	No	
03/13/2009	72	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
BERNAR	**365**	**BERNARD DR**	**06/24/2010**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
04/16/2008	81	No	
06/09/2003	85	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BIRDSE	**117**	**BIRDS EYE AVE**	**03/13/2009**	**29**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	29	Yes	
06/23/2003	28	Yes	
07/01/1997	43	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BLAINE	**145**	**BLAINE ST**	**07/06/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/06/2011	81	No	ADT ON 9/25/2000
03/13/2009	83	Yes	ADT ON 9/25/2000
06/05/2006	100	No	ADT ON 9/25/2000
06/23/2003	39	Yes	ADT ON 9/25/2000
07/01/1997	59	Yes	ADT ON 9/25/2000

Street ID	Section ID	Street Name	Last Updated	PCI
BOEAN	**440**	**BOEAN LN**	**03/13/2009**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BOGIEC	**400**	**BOGIE CT**	**03/13/2009**	**68**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	68	Yes	
06/23/2004	75	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BOONES	**379C**	**N BOONES FERRY RD**	**08/04/2015**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	72	No	
03/13/2009	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BOSTON	**424**	**BOSTON ST**	**06/01/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	80	No	
03/13/2009	78	Yes	
06/23/2004	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BRADLE	**177**	**BRADLEY ST**	**06/21/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	79	No	ADT ON 5/8/2009
03/13/2009	81	Yes	ADT ON 5/8/2009
06/23/2003	80	Yes	ADT ON 5/8/2009
07/01/1997	83	Yes	ADT ON 5/8/2009

Street ID	Section ID	Street Name	Last Updated	PCI
BRANDY	**203**	**BRANDYWINE CT**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	68	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BRIDLE	**410A**	**BRIDLEWOOD LN**	**07/14/2014**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/14/2014	76	No	
06/01/2009	80	No	
03/13/2009	79	Yes	
04/16/2008	87	No	
06/23/2004	90	Yes	
04/06/2004	83	No	

Street ID	Section ID	Street Name	Last Updated	PCI
BRIDLE	**410B**	**BRIDLEWOOD LN**	**07/14/2014**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/14/2014	77	No	ADT ON 1/27/2002
03/13/2009	81	Yes	ADT ON 1/27/2002
04/16/2008	85	No	ADT ON 1/27/2002
06/23/2004	88	Yes	ADT ON 1/27/2002
04/06/2004	83	No	ADT ON 1/27/2002

Street ID	Section ID	Street Name	Last Updated	PCI
BROADM	**389**	**BROADMOORE PL**	**03/13/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	81	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROADW	**152A**	**BROADWAY ST**	**03/13/2009**	**20**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	20	Yes	
06/23/2003	20	Yes	
07/01/1997	25	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROADW	**152B**	**BROADWAY ST**	**03/13/2009**	**43**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	43	Yes	
06/23/2003	78	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROUGH	**340**	**BROUGHTON WAY**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/12/2006	100	No	
06/09/2003	21	Yes	
07/01/1997	29	Yes	

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BROWN	**176A**	**BROWN ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	53	Yes	
06/23/2003	56	Yes	
07/01/1997	68	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROWN	**176B**	**BROWN ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	55	Yes	
06/23/2003	64	Yes	
07/01/1997	28	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROWN	**176C**	**BROWN ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	68	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROWN	**176D**	**BROWN ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BROWNC	**164**	**BROWN CT**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	44	Yes	
07/01/1997	31	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
BRYANS	**144A**	**BRYAN ST**	**06/28/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2011	81	No	ADT ON 4/27/2009
03/13/2009	82	Yes	ADT ON 4/27/2009
06/23/2003	90	Yes	ADT ON 4/27/2009
01/01/1998	100	No	ADT ON 4/27/2009
07/01/1997	75	Yes	ADT ON 4/27/2009

Street ID	Section ID	Street Name	Last Updated	PCI
BRYANS	**144B**	**BRYAN ST**	**07/06/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/06/2011	81	No	ADT ON 4/29/1999
03/13/2009	83	Yes	ADT ON 4/29/1999
06/05/2006	100	No	ADT ON 4/29/1999
06/23/2003	43	Yes	ADT ON 4/29/1999
07/01/1997	31	Yes	ADT ON 4/29/1999

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Street ID	Section ID	Street Name	Last Updated	PCI
BST	**154**	**B ST**	**03/13/2009**	**36**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	36	Yes	ADT ON 7/23/2003
06/23/2003	77	Yes	ADT ON 7/23/2003
07/01/1997	81	Yes	ADT ON 7/23/2003

Street ID	Section ID	Street Name	Last Updated	PCI
BUNKER	**398**	**BUNKER AVE**	**06/01/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	80	No	
03/13/2009	79	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CAHILL	**339**	**CAHILL WAY**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	
06/12/2006	100	No	
06/09/2003	30	Yes	
07/01/1997	24	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CAMAS	**303**	**CAMAS ST**	**06/13/2011**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/13/2011	80	No	
03/13/2009	80	Yes	
06/23/2003	84	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CAMELL	**347**	**CAMELLIA WAY**	**03/13/2009**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	74	Yes	
06/09/2003	84	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CAROLS	**132A**	**CAROL ST**	**03/13/2009**	**18**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	18	Yes	
06/09/2003	47	Yes	
07/01/1997	58	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CAROLS	**132B**	**CAROL ST**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	WIDTH VARIES

Street ID	Section ID	Street Name	Last Updated	PCI
CEDARA	**318**	**CEDAR AVE**	**06/01/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	77	No	
03/13/2009	75	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CENTEN	**108**	**CENTENNIAL DR**	**06/23/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	83	No	
03/13/2009	84	Yes	
06/09/2003	89	Yes	
07/01/1997	98	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CENTER	**446**	**CENTER ST**	**08/16/2012**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	92	No	
03/13/2009	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CHAMPI	**396**	**CHAMPIONSHIP DR**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CHARLE	**138**	**CHARLES ST**	**06/08/2015**	**45**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/08/2015	45	No	
03/13/2009	21	Yes	
06/09/2003	32	Yes	
07/01/1997	64	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CHURCH	**227A**	**CHURCH ST**	**03/13/2009**	**20**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	20	Yes	
06/23/2003	45	Yes	
08/01/1997	38	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CHURCH	**227B**	**CHURCH ST**	**03/13/2009**	**23**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	23	Yes	
06/23/2003	33	Yes	
08/01/1997	48	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CHURCH	**227C**	**CHURCH ST**	**03/13/2009**	**64**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	64	Yes	
06/23/2003	78	Yes	
07/01/1997	79	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CITADE	**408**	**CITADEL ST**	**07/10/2012**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	84	No	
06/20/2011	83	No	
03/13/2009	84	Yes	
06/23/2004	95	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
CLACKA	**251**	**CLACKAMAS CIRCLE**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	27	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEMSO	**434**	**CLEMSON ST**	**03/13/2009**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	100	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**158A**	**CLEVELAND ST**	**08/04/2015**	**61**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	61	No	
06/24/2010	71	No	
03/13/2009	71	Yes	
06/23/2003	83	Yes	
07/01/1997	87	Yes	
01/01/1990	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**158B**	**CLEVELAND ST**	**08/04/2015**	**68**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	68	No	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285
06/01/2009	79	No	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285
03/13/2009	77	Yes	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285
06/23/2003	81	Yes	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285
07/01/1997	86	Yes	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285
01/01/1990	100	No	ADT ON 9/9/2000 - 3,732 ADT ON 3/4/2001 - 1,285

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**219A**	**CLEVELAND ST**	**08/04/2015**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	85	No	
08/11/2010	100	No	
03/13/2009	68	Yes	
06/28/2006	100	No	
06/23/2003	24	Yes	
08/01/1997	19	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**219B**	**CLEVELAND ST**	**08/04/2015**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	85	No	
08/11/2010	100	No	
03/13/2009	29	Yes	
06/23/2003	33	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**219B**	**CLEVELAND ST**	**08/04/2015**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/01/1997	40	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CLEVEL	**219C**	**CLEVELAND ST**	**08/04/2015**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	85	No	ADT ON 9/12/2003
08/11/2010	100	No	ADT ON 9/12/2003
03/13/2009	38	Yes	ADT ON 9/12/2003
06/23/2003	77	Yes	ADT ON 9/12/2003
08/01/1997	73	Yes	ADT ON 9/12/2003

Street ID	Section ID	Street Name	Last Updated	PCI
COLEWO	**391**	**COLEWOOD DR**	**06/01/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	77	No	
03/13/2009	75	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COLONY	**355**	**COLONY ST**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	
06/09/2003	90	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COLUMB	**250**	**COLUMBIA DR**	**06/24/2010**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	72	No	
03/13/2009	72	Yes	
06/09/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	24	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COMMER	**179**	**COMMERCE WAY**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
06/09/2003	89	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COMSTO	**414**	**COMSTOCK AVE**	**06/22/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	81	No	
03/13/2009	82	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COMSTW	**415**	**COMSTOCK WY**	**06/22/2011**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	80	No	
03/13/2009	81	Yes	
06/23/2004	92	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
CONCOR	423	CONCORD ST	06/01/2009	80

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	80	No	
03/13/2009	78	Yes	
06/23/2004	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CONSTI	356	CONSTITUTION AVE	03/13/2009	80

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	80	Yes	
06/09/2003	89	Yes	
07/01/1997	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CONSTI	356B	CONSTITUTION AVE	03/13/2009	82

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
04/16/2008	83	No	
06/23/2004	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COOLEY	463	COOLEY CT	03/13/2009	92

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CORBYS	136	CORBY ST	07/06/2011	79

Date Updated	PCI Hist	PCI from Inspection	Comments
07/06/2011	79	No	
03/13/2009	80	Yes	
06/09/2003	89	Yes	
07/01/1997	92	Yes	
01/01/1995	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	322	COUNTRY CLUB RD	06/02/2015	60

Date Updated	PCI Hist	PCI from Inspection	Comments
06/02/2015	60	No	ADT ON 8/30/2012
03/13/2009	63	Yes	ADT ON 8/30/2012
06/09/2003	76	Yes	ADT ON 8/30/2012
07/01/1997	71	Yes	ADT ON 8/30/2012

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	322A	COUNTRY CLUB RD	03/13/2009	47

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	47	Yes	
06/09/2003	76	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	322B	COUNTRY CLUB RD	03/13/2009	63

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	63	Yes	
06/09/2003	79	Yes	
07/01/1997	71	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**322C**	**COUNTRY CLUB RD**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/09/2003	65	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**322D**	**COUNTRY CLUB RD**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/09/2003	35	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**323**	**COUNTRY CLUB TERRACE**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	
06/09/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	51	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**324**	**COUNTRY CLUB CT**	**07/01/2014**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	100	No	No PSL - Residental 25 MPH Type A curb & gutter
03/13/2009	35	Yes	No PSL - Residental 25 MPH Type A curb & gutter
06/09/2003	29	Yes	No PSL - Residental 25 MPH Type A curb & gutter
07/01/1997	18	Yes	No PSL - Residental 25 MPH Type A curb & gutter

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**342**	**COUNTRY CLUB CIRCLE**	**03/13/2009**	**34**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	34	Yes	
06/09/2003	77	Yes	
07/01/1997	76	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**428A**	**COUNTRY LN**	**07/01/2014**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	86	No	ADT ON 8/25/2005
03/13/2009	89	Yes	ADT ON 8/25/2005
06/23/2004	92	Yes	ADT ON 8/25/2005

Street ID	Section ID	Street Name	Last Updated	PCI
COUNTR	**428B**	**COUNTRY LN**	**07/01/2014**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	85	No	ADT ON 8/25/2005 - 186 ADT ON 4/20/2009- 844
03/13/2009	95	Yes	ADT ON 8/25/2005 - 186 ADT ON 4/20/2009- 844

Street ID	Section ID	Street Name	Last Updated	PCI
COZYWA	**260A**	**COZY WAY**	**06/01/2009**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	79	No	
03/13/2009	77	Yes	
06/09/2003	86	Yes	
08/01/1997	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
COZYWA	**260B**	**COZY WAY**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CREIGH	**405**	**CREIGHTON ST**	**08/16/2012**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	82	No	
07/10/2012	80	No	
03/13/2009	83	Yes	
06/23/2004	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
CST	**155**	**C ST**	**06/21/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	81	No	
03/13/2009	81	Yes	
06/23/2003	82	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DAHLIA	**462**	**DAHLIA ST**	**07/01/2014**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	86	No	ADT ON 4/20/2009
03/13/2009	92	Yes	ADT ON 4/20/2009

Street ID	Section ID	Street Name	Last Updated	PCI
DEERRU	**171A**	**DEER RUN ST**	**03/13/2009**	**39**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	39	Yes	
06/23/2003	73	Yes	
07/01/1997	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DEERRU	**171B**	**DEER RUN ST**	**06/01/2009**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	78	No	
03/13/2009	76	Yes	
06/23/2003	87	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DELLMO	**328A**	**DELLMOOR WAY**	**03/13/2009**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	87	Yes	
04/16/2008	91	No	
06/12/2006	100	No	
06/09/2003	33	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
DELLMO	**328A**	**DELLMOOR WAY**	**03/13/2009**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	51	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DELLMO	**328B**	**DELLMOOR WAY**	**03/13/2009**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	87	Yes	
04/16/2008	91	No	
06/12/2006	100	No	
06/09/2003	40	Yes	
07/01/1997	34	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DESANT	**258**	**DESANTIS DR**	**06/21/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	82	No	
03/13/2009	83	Yes	
06/09/2003	92	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DOGWOO	**348**	**DOGWOOD DR**	**06/24/2010**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	76	No	
03/13/2009	75	Yes	
06/09/2003	86	Yes	
07/01/1997	68	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DOUDST	**140**	**DOUD ST**	**03/13/2009**	**42**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	42	Yes	
06/23/2003	64	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DST	**156**	**D ST**	**03/13/2009**	**64**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	64	Yes	
06/23/2003	78	Yes	
07/01/1997	77	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DUKEST	**406**	**DUKE ST**	**08/16/2012**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	76	No	
07/10/2012	74	No	
03/13/2009	78	Yes	
06/23/2004	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
DUNNCT	**394**	**DUNN CT**	**03/13/2009**	**20**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	20	Yes	
06/23/2004	29	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
EAGLED	**397A**	**EAGLE DR**	**03/13/2009**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	72	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EAGLED	**397B**	**EAGLE DR**	**03/13/2009**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	74	Yes	
06/23/2004	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ECOLAW	**337**	**ECOLA WAY**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/12/2006	100	No	
06/09/2003	35	Yes	
07/01/1997	56	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EDGEWA	**385**	**EDGEWATER DR**	**07/08/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/08/2011	79	No	
03/13/2009	79	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ELANAD	**202A**	**ELANA DR**	**06/21/2011**	**75**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	75	No	
03/13/2009	77	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ELANAD	**202B**	**ELANA DR**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	76	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ELANAW	**206**	**ELANA WAY**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	35	Yes	
07/01/1997	54	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ELINC	**110A**	**E LINCOLN ST**	**07/01/2014**	**61**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	61	No	
06/09/2014	46	No	
03/13/2009	50	Yes	
06/09/2003	89	Yes	
07/01/1997	33	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ELINC	**110B**	**E LINCOLN ST**	**07/01/2014**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	74	No	PSL 25 MPH Type C curb
06/09/2014	64	No	PSL 25 MPH Type C curb
03/13/2009	67	Yes	PSL 25 MPH Type C curb
04/16/2008	82	No	PSL 25 MPH Type C curb
06/09/2003	86	Yes	PSL 25 MPH Type C curb
07/01/1997	43	Yes	PSL 25 MPH Type C curb
01/01/1997	100	No	PSL 25 MPH Type C curb

Street ID	Section ID	Street Name	Last Updated	PCI
ELINC	**110C**	**E LINCOLN ST**	**07/01/2014**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	79	No	PSL 20 MPH - School Zone Type C Curb
06/09/2014	70	No	PSL 20 MPH - School Zone Type C Curb
07/08/2011	70	No	PSL 20 MPH - School Zone Type C Curb
03/13/2009	71	Yes	PSL 20 MPH - School Zone Type C Curb
04/16/2008	82	No	PSL 20 MPH - School Zone Type C Curb
06/09/2003	86	Yes	PSL 20 MPH - School Zone Type C Curb
07/01/1997	33	Yes	PSL 20 MPH - School Zone Type C Curb
01/01/1997	100	No	PSL 20 MPH - School Zone Type C Curb

Street ID	Section ID	Street Name	Last Updated	PCI
ELINC	**110D**	**E LINCOLN ST**	**07/01/2014**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	74	No	PSL 25 MPH Type C curb
06/09/2014	64	No	PSL 25 MPH Type C curb
03/13/2009	67	Yes	PSL 25 MPH Type C curb
04/16/2008	82	No	PSL 25 MPH Type C curb
06/09/2003	86	Yes	PSL 25 MPH Type C curb
07/01/1997	25	Yes	PSL 25 MPH Type C curb
01/01/1997	100	No	PSL 25 MPH Type C curb

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Street ID	Section ID	Street Name	Last Updated	PCI
ELMST	**148**	**ELM ST**	**03/13/2009**	**35**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	35	Yes	
06/23/2003	69	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253A**	**EVERGREEN RD**	**08/14/2012**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/14/2012	89	No	
07/10/2012	88	No	
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253B**	**EVERGREEN RD**	**08/14/2012**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/14/2012	87	No	
07/10/2012	86	No	
03/13/2009	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253C**	**EVERGREEN RD**	**08/14/2012**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/14/2012	73	No	
06/01/2009	75	No	
03/13/2009	73	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253D**	**EVERGREEN RD**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
04/16/2008	88	No	
06/09/2003	92	Yes	
01/01/2000	100	No	
07/01/1997	25	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253E**	**EVERGREEN RD**	**06/24/2015**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2015	52	No	ADT ON 9/5/2008
06/23/2015	49	No	ADT ON 9/5/2008
08/09/2012	44	No	ADT ON 9/5/2008
03/13/2009	22	Yes	ADT ON 9/5/2008
04/16/2008	65	No	ADT ON 9/5/2008
06/09/2003	71	Yes	ADT ON 9/5/2008
01/01/2000	100	No	ADT ON 9/5/2008
07/01/1997	51	Yes	ADT ON 9/5/2008
01/01/1991	100	No	ADT ON 9/5/2008

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253F**	**EVERGREEN RD**	**06/02/2014**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/02/2014	100	No	
03/13/2009	62	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
EVERGR	**253F**	**EVERGREEN RD**	**06/02/2014**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	86	Yes	
08/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FAIRWA	**399**	**FAIRWAY ST**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FAIRWO	**393A**	**FAIRWOOD CRESCENT**	**06/01/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	82	No	
03/13/2009	80	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FAIRWO	**393B**	**FAIRWOOD CRESCENT**	**06/16/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	81	No	
03/13/2009	82	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FIFTHS	**235A**	**FIFTH ST**	**06/24/2010**	**71**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	71	No	
03/13/2009	70	Yes	
06/23/2003	16	Yes	
08/01/1997	19	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FIFTHS	**235B**	**FIFTH ST**	**03/13/2009**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	74	Yes	
06/23/2003	14	Yes	
08/01/1997	15	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FIFTHS	**235C**	**FIFTH ST**	**07/15/2011**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/15/2011	100	No	
03/13/2009	32	Yes	
06/23/2003	15	Yes	
08/01/1997	20	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FIFTHS	**235D**	**FIFTH ST**	**07/15/2011**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/15/2011	100	No	
03/13/2009	7	Yes	
06/23/2003	24	Yes	
08/01/1997	54	Yes	

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FIFTHS	**235E**	**FIFTH ST**	**07/15/2011**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/15/2011	100	No	
03/13/2009	18	Yes	
06/23/2003	79	Yes	
07/01/1997	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FILBER	**151**	**FILBERT ST**	**06/28/2011**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2011	85	No	
03/13/2009	86	Yes	
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	39	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FINZER	**338**	**FINZER WAY**	**03/13/2009**	**29**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	29	Yes	
06/09/2003	48	Yes	
07/01/1997	48	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FIR	**229A**	**FIR ST**	**03/13/2009**	**3**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	3	Yes	
06/23/2003	15	Yes	
08/01/1997	18	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FOURTH	**234**	**FOURTH ST**	**06/21/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	81	No	
03/13/2009	82	Yes	
06/23/2003	30	Yes	
08/01/1997	67	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
FOXGLO	**461**	**FOXGLOVE ST**	**07/01/2014**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	91	No	ADT ON 4/15/2009 - 188 ADT ON 12/15/2010 - 150
03/13/2009	95	Yes	ADT ON 4/15/2009 - 188 ADT ON 12/15/2010 - 150

Street ID	Section ID	Street Name	Last Updated	PCI
GARDEN	**373**	**GARDEN WAY**	**06/24/2010**	**69**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	69	No	
03/13/2009	68	Yes	
06/09/2003	76	Yes	
07/01/1997	72	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
GARFIE	**222**	**GARFIELD ST**	**08/02/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/02/2010	100	No	
03/13/2009	38	Yes	
06/09/2003	76	Yes	
08/01/1997	57	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GARFIE	**222B**	**GARFIELD ST**	**08/02/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/02/2010	100	No	
03/13/2009	52	Yes	
06/09/2003	85	Yes	
01/01/2000	100	No	
08/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GARFIE	**222C**	**GARFIELD ST**	**08/02/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/02/2010	100	No	
03/13/2009	26	Yes	
06/09/2003	69	Yes	
08/01/1997	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GARFIE	**222D**	**GARFIELD ST**	**06/20/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/20/2011	83	No	
03/13/2009	84	Yes	
06/09/2003	27	Yes	
08/01/1997	53	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GARFIE	**222E**	**GARFIELD ST**	**06/20/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/20/2011	77	No	
03/13/2009	78	Yes	
06/09/2003	90	Yes	
08/01/1997	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GATCHS	**135A**	**GATCH ST**	**03/13/2009**	**49**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	49	Yes	
06/26/2003	76	Yes	
07/01/1997	79	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GATCHS	**135B**	**GATCH ST**	**06/11/2015**	**44**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	44	No	
06/09/2014	43	No	
03/13/2009	31	Yes	
06/23/2003	66	Yes	
07/01/1997	51	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
GATCHS	**135C**	**GATCH ST**	**06/11/2015**	**46**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	46	No	
06/09/2014	45	No	
03/13/2009	39	Yes	
06/23/2003	70	Yes	
07/01/1997	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GATCHS	**135D**	**GATCH ST**	**06/11/2015**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	70	No	
03/13/2009	74	Yes	
06/09/2003	95	Yes	
01/01/2002	100	No	
07/01/1997	35	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GEORGE	**116**	**GEORGE ST**	**03/13/2009**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	91	Yes	
06/05/2006	100	No	
06/23/2003	64	Yes	
07/01/1997	64	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GLATTC	**372**	**GLATT CIRCLE**	**06/28/2013**	**53**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2013	53	No	ADT ON 9/7/2005
03/13/2009	39	Yes	ADT ON 9/7/2005
06/23/2003	76	Yes	ADT ON 9/7/2005
07/01/1997	73	Yes	ADT ON 9/7/2005

Street ID	Section ID	Street Name	Last Updated	PCI
GOOSEC	**366**	**GOOSE CREEK RD**	**06/01/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	77	No	
03/13/2009	75	Yes	
06/09/2003	90	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GOOSEH	**454**	**GOOSE HOLLOW CT**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GRANTS	**224A**	**GRANT ST**	**03/13/2009**	**19**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	19	Yes	
06/23/2003	66	Yes	
08/01/1997	65	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GRANTS	**224B**	**GRANT ST**	**07/01/2014**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	100	No	
06/16/2014	100	No	
03/13/2009	67	Yes	
06/23/2003	80	Yes	
08/01/1997	79	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GRAYST	**388**	**GRAYSTONE DR**	**07/08/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/08/2011	79	No	
03/13/2009	79	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GREENV	**103A**	**GREENVIEW DR**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/09/2003	81	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GREENV	**103B**	**GREENVIEW DR**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
06/09/2003	68	Yes	
07/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
GREENV	**104**	**GREENVIEW CT**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/09/2003	73	Yes	
07/01/1997	68	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HALLST	**244**	**HALL ST**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
06/23/2003	76	Yes	
07/01/1997	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAMPTO	**354**	**HAMPTON WAY**	**06/02/2015**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/02/2015	81	No	
06/24/2010	87	No	
03/13/2009	88	Yes	
06/12/2006	100	No	
06/09/2003	18	Yes	
07/01/1997	32	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134A**	**HARDCASTLE AVE**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
06/09/2003	98	Yes	
01/01/2000	100	No	
07/01/1997	38	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134B**	**HARDCASTLE AVE**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
06/09/2003	98	Yes	
01/01/2000	100	No	
07/01/1997	58	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134C**	**HARDCASTLE AVE**	**03/13/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	81	Yes	
06/09/2003	98	Yes	
01/01/2000	100	No	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134D**	**HARDCASTLE AVE**	**06/04/2015**	**68**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/04/2015	68	No	
06/03/2015	65	No	
06/09/2014	60	No	
03/13/2009	64	Yes	
06/09/2003	85	Yes	
01/01/2000	100	No	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134E**	**HARDCASTLE AVE**	**06/11/2015**	**31**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	31	No	ADT ON 1/25/1997
03/13/2009	56	Yes	ADT ON 1/25/1997
06/09/2003	89	Yes	ADT ON 1/25/1997
07/01/1997	82	Yes	ADT ON 1/25/1997
01/01/1993	100	No	ADT ON 1/25/1997

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134F**	**HARDCASTLE AVE**	**06/11/2015**	**41**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	41	No	ADT ON 7/10/2008 - 3,724 ADT ON 10/20/2008 - 3,867 ADT ON 2/4/2009
06/09/2014	43	No	ADT ON 7/10/2008 - 3,724 ADT ON 10/20/2008 - 3,867 ADT ON 2/4/2009
03/13/2009	44	Yes	ADT ON 7/10/2008 - 3,724 ADT ON 10/20/2008 - 3,867 ADT ON 2/4/2009

Street ID	Section ID	Street Name	Last Updated	PCI
HARDCA	**134F**	**HARDCASTLE AVE**	**06/11/2015**	**41**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	74	Yes	ADT ON 7/10/2008 - 3,724 ADT ON 10/20/2008 - 3,867 ADT ON 2/4/2009
07/01/1997	82	Yes	
01/01/1993	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
HARRIS	**226A**	**HARRISON ST**	**08/04/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2010	100	No	
03/13/2009	23	Yes	
06/23/2003	57	Yes	
08/01/1997	41	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARRIS	**226B**	**HARRISON ST**	**08/15/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/15/2010	100	No	
03/13/2009	31	Yes	
06/23/2003	45	Yes	
08/01/1997	60	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARRIS	**226C**	**HARRISON ST**	**08/04/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2010	100	No	
03/13/2009	43	Yes	
06/23/2003	21	Yes	
08/01/1997	57	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARVAR	**402A**	**HARVARD DR**	**08/16/2012**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	79	No	
07/10/2012	77	No	
03/13/2009	81	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARVAR	**402B**	**HARVARD DR**	**08/16/2012**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	80	No	
07/10/2012	79	No	
06/01/2009	81	No	
03/13/2009	80	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HARVAR	**402C**	**HARVARD DR**	**06/20/2011**	**44**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/20/2011	44	No	
03/13/2009	46	Yes	
06/23/2004	91	Yes	

City of Woodburn
190 Garfield Street
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Street ID	Section ID	Street Name	Last Updated	PCI
HAWLEY	**175A**	**HAWLEY ST**	**03/13/2009**	**37**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	37	Yes	
06/23/2003	70	Yes	
07/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAWLEY	**175B**	**HAWLEY ST**	**06/22/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	83	No	
03/13/2009	84	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	54	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAWTHO	**311**	**HAWTHORNE CIRCLE**	**03/13/2009**	**25**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	25	Yes	
06/23/2003	67	Yes	
07/01/1997	79	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAZELN	**370**	**HAZELNUT DR**	**08/23/2012**	**61**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/23/2012	61	No	
08/16/2012	45	No	
03/13/2009	18	Yes	
06/23/2004	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAZELN	**370A**	**HAZELNUT DR**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
06/23/2004	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HAZELN	**370B**	**HAZELNUT DR**	**08/16/2012**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	66	No	
08/09/2012	54	No	
03/13/2009	42	Yes	
06/09/2003	84	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HEATHE	**345**	**HEATHER WAY**	**06/15/2011**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	78	No	
03/13/2009	78	Yes	
06/09/2003	86	Yes	
07/01/1997	87	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
HENRYS	**363A**	**HENRYS BLVD**	**06/16/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	77	No	
06/01/2009	77	No	
03/13/2009	75	Yes	
06/09/2003	82	Yes	
07/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HENRYS	**363B**	**HENRYS BLVD**	**06/16/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	77	No	
03/13/2009	78	Yes	
06/09/2003	89	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HERITA	**109**	**HERITAGE AVE**	**06/23/2011**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	78	No	
03/13/2009	78	Yes	
06/09/2003	84	Yes	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HERMAN	**167A**	**HERMANSON ST**	**03/13/2009**	**56**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	56	Yes	
06/23/2003	72	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HERMAN	**167B**	**HERMANSON ST**	**03/13/2009**	**43**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	43	Yes	
06/23/2003	65	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HERMAN	**167C**	**HERMANSON ST**	**06/22/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	79	No	
03/13/2009	80	Yes	
06/23/2003	85	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HEROND	**392**	**HERON DR**	**06/16/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	81	No	
03/13/2009	82	Yes	
06/23/2004	92	Yes	

PCI History

Street ID	Section ID	Street Name	Last Updated	PCI
HIGHST	**228A**	**HIGH ST**	**03/13/2009**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	52	Yes	
06/23/2003	50	Yes	
08/01/1997	58	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HIGHST	**228B**	**HIGH ST**	**03/13/2009**	**22**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	22	Yes	
06/23/2003	29	Yes	
08/01/1997	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HILLYE	**433**	**HILLYER LN**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
HOOPER	**441**	**HOOPER ST**	**08/16/2012**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	92	No	
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
INDEPE	**381**	**INDEPENDENCE ST**	**03/13/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	80	Yes	
06/09/2003	90	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
INDEPE	**381B**	**INDEPENDENCE ST**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
INDEPE	**382**	**INDEPENDENCE CT**	**03/13/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	80	Yes	
06/09/2003	90	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
INDUST	**376**	**INDUSTRIAL AVE**	**08/04/2015**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	77	No	ADT ON 5/9/2012
03/13/2009	83	Yes	ADT ON 5/9/2012
06/09/2003	92	Yes	ADT ON 5/9/2012
01/01/1999	100	No	ADT ON 5/9/2012
07/01/1997	34	Yes	ADT ON 5/9/2012

Street ID	Section ID	Street Name	Last Updated	PCI
INGLEW	**387**	**INGLEWOOD LN**	**07/08/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/08/2011	81	No	
03/13/2009	82	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
IRONWO	**390**	**IRONWOOD TER**	**06/16/2011**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	78	No	
03/13/2009	78	Yes	
06/23/2004	91	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JACOBS	**361**	**JACOB ST**	**06/01/2009**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	79	No	
03/13/2009	77	Yes	
06/09/2003	89	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JAMESS	**122A**	**JAMES ST**	**06/24/2010**	**58**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	58	No	
03/13/2009	57	Yes	
04/16/2008	87	No	
06/09/2003	91	Yes	
01/01/2000	100	No	
07/01/1997	63	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JAMESS	**122B**	**JAMES ST**	**06/24/2010**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	70	No	
03/13/2009	69	Yes	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	19	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JAMEST	**357**	**JAMESTOWN ST**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
06/09/2003	86	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JANAAV	**166**	**JANA AVE**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
04/16/2008	87	No	
04/06/2004	93	No	
06/23/2003	96	Yes	
01/01/2002	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
JANAAV	**166**	**JANA AVE**	**03/13/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JANACT	**160**	**JANA CT**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
04/16/2008	87	No	
04/12/2004	93	No	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	56	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JANSEN	**350**	**JANSEN WAY**	**03/13/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	81	Yes	
06/09/2003	90	Yes	
07/01/1997	91	Yes	
01/01/1995	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
JOHNSO	**147A**	**JOHNSON ST**	**03/13/2009**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	87	Yes	
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	71	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JOHNSO	**147B**	**JOHNSON ST**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	41	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JONAHP	**438**	**JONAH PL**	**03/13/2009**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JORYST	**307**	**JORY ST**	**06/13/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/13/2011	77	No	
03/13/2009	77	Yes	
06/23/2003	83	Yes	
07/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JOYCES	**149**	**JOYCE ST**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
JOYCES	**149**	**JOYCE ST**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	76	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JUDYST	**174A**	**JUDY ST**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JUDYST	**174B**	**JUDY ST**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	80	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JULIEC	**173**	**JULIE CT**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	72	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JUNEWA	**102A**	**JUNE WAY**	**06/23/2011**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	84	No	
03/13/2009	85	Yes	
06/09/2003	76	Yes	
07/01/1997	80	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
JUNEWA	**102B**	**JUNE WAY**	**06/23/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	79	No	
03/13/2009	79	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KELOWN	**204**	**KELOWNA CT**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	70	Yes	
07/01/1997	75	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KELOWN	**205**	**KELOWNA ST**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KELOWN	**205**	**KELOWNA ST**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2003	49	Yes	
07/01/1997	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KEVINC	**124**	**KEVIN CT**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KINGWA	**352A**	**KING WAY**	**06/01/2009**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	78	No	
03/13/2009	76	Yes	
06/09/2003	89	Yes	
07/01/1997	86	Yes	
01/01/1992	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
KINGWA	**352B**	**KING WAY**	**03/13/2009**	**36**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	36	Yes	
06/09/2003	88	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KINGWA	**352C**	**KING WAY**	**06/24/2010**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	70	No	
03/13/2009	69	Yes	
06/09/2003	85	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KINGWA	**352D**	**KING WAY**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
06/09/2003	95	Yes	
01/01/1999	100	No	
07/01/1997	15	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KOFFLE	**131**	**KOFFLER AVE**	**03/13/2009**	**44**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	44	Yes	
06/09/2003	69	Yes	
07/01/1997	76	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KOTKAS	**247**	**KOTKA ST**	**03/13/2009**	**50**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
KOTKAS	**247**	**KOTKA ST**	**03/13/2009**	**50**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2003	62	Yes	
07/01/1997	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LANDAU	**115A**	**LANDAU DR**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	
06/05/2006	100	No	
06/23/2003	77	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LANDAU	**115B**	**LANDAU DR**	**06/23/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	82	No	
03/13/2009	85	Yes	
06/05/2006	100	No	
06/23/2003	71	Yes	
07/01/1997	71	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LAUREL	**112**	**LAUREL AVE**	**03/13/2009**	**20**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	20	Yes	
06/23/2003	39	Yes	
07/01/1997	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LAWSON	**256**	**LAWSON AVE**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/09/2003	26	Yes	
07/01/1997	65	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LEISUR	**245**	**LEASURE ST**	**07/01/2014**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	73	No	ADT ON 7/30/2002 No PSL - Residental 25 MPH Type A curb & gutter
06/24/2010	69	No	ADT ON 7/30/2002 No PSL - Residental 25 MPH Type A curb & gutter
03/13/2009	68	Yes	ADT ON 7/30/2002 No PSL - Residental 25 MPH Type A curb & gutter
06/23/2003	81	Yes	ADT ON 7/30/2002 No PSL - Residental 25 MPH Type A curb & gutter
07/01/1997	81	Yes	ADT ON 7/30/2002 No PSL - Residental 25 MPH Type A curb & gutter

Street ID	Section ID	Street Name	Last Updated	PCI
LEXING	**358**	**LEXINGTON CT**	**03/13/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	82	Yes	
06/09/2003	90	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LILACW	**346**	**LILAC WAY**	**06/24/2010**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	70	No	
03/13/2009	69	Yes	
06/09/2003	81	Yes	
07/01/1997	80	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LINDAS	**304**	**LINDA ST**	**03/13/2009**	**18**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	18	Yes	
06/23/2003	59	Yes	
07/01/1997	52	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LINFIE	**437**	**LINFIELD AVE**	**03/13/2009**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	100	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
LUBAST	**411**	**LUBA ST**	**07/01/2014**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	81	No	
06/22/2011	83	No	
03/13/2009	84	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MAPLES	**238**	**MAPLE ST**	**06/20/2011**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/20/2011	80	No	
03/13/2009	81	Yes	
06/09/2003	95	Yes	
08/01/1997	40	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MAPLEW	**447**	**MAPLEWOOD CT**	**03/13/2009**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MARCEL	**125**	**MAR CEL DR**	**03/13/2009**	**48**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	48	Yes	
04/16/2008	76	No	
06/09/2003	79	Yes	
07/01/1997	65	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
MARCEL	**180**	**MAR CEL CT**	**03/13/2009**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	52	Yes	
04/16/2008	66	No	
06/09/2003	71	Yes	
07/01/1997	54	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MARION	**150A**	**MARION ST**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	72	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MARION	**150B**	**MARION ST**	**06/28/2011**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2011	84	No	
03/13/2009	85	Yes	
06/23/2003	90	Yes	
01/01/1998	100	No	
07/01/1997	33	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MARSHA	**162**	**MARSHALL ST**	**06/24/2010**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	77	No	
06/01/2009	76	No	
03/13/2009	74	Yes	
06/23/2003	74	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MARYLY	**449**	**MARYLYNN WAY**	**06/21/2011**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	84	No	
03/13/2009	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MAYANN	**364**	**MAYANNA DR**	**07/01/2014**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	78	No	No PSL - Residental 25 MPH Type A curb & gutter
06/09/2014	68	No	No PSL - Residental 25 MPH Type A curb & gutter
06/24/2010	70	No	No PSL - Residental 25 MPH Type A curb & gutter
03/13/2009	69	Yes	No PSL - Residental 25 MPH Type A curb & gutter
04/16/2008	80	No	No PSL - Residental 25 MPH Type A curb & gutter
06/09/2003	84	Yes	No PSL - Residental 25 MPH Type A curb & gutter
07/01/1997	91	Yes	No PSL - Residental 25 MPH Type A curb & gutter

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Street ID	Section ID	Street Name	Last Updated	PCI
MCKINL	**146**	**MCKINLEY ST**	**06/03/2015**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/03/2015	78	No	ADT ON 4/29/1999
07/06/2011	82	No	ADT ON 4/29/1999
03/13/2009	85	Yes	ADT ON 4/29/1999
06/05/2006	100	No	ADT ON 4/29/1999
06/23/2003	46	Yes	ADT ON 4/29/1999
07/01/1997	54	Yes	ADT ON 4/29/1999

Street ID	Section ID	Street Name	Last Updated	PCI
MCLAUG	**241A**	**MCLAUGHLIN DR**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
06/09/2003	64	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MCLAUG	**241B**	**MCLAUGHLIN DR**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
04/16/2008	77	No	
06/09/2003	80	Yes	
07/01/1997	75	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MCLAUG	**241C**	**MCLAUGHLIN DR**	**06/21/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	77	No	
06/01/2009	78	No	
03/13/2009	76	Yes	
06/09/2003	90	Yes	
07/01/1997	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MCNAUG	**302**	**MCNAUGHT ST**	**06/13/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/13/2011	79	No	
03/13/2009	79	Yes	
06/23/2003	82	Yes	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MEADOW	**170**	**MEADOWVALE LANE**	**03/13/2009**	**55**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	55	Yes	
06/23/2003	74	Yes	
07/01/1997	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MERICT	**455**	**MERIDIAN CT**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MERIDI	**371A**	**MERIDIAN DR**	**08/05/2012**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/05/2012	87	No	
06/01/2009	86	No	
03/13/2009	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MERIDI	**371B**	**MERIDIAN DR**	**08/05/2012**	**60**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/05/2012	60	No	
08/02/2012	45	No	
03/13/2009	37	Yes	
06/23/2003	68	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MILLER	**367**	**MILLER FARM RD**	**06/01/2009**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	72	No	
03/13/2009	69	Yes	
04/16/2008	85	No	
06/09/2003	88	Yes	
07/01/1997	88	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MILLER	**369**	**MILLER CT**	**06/16/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	77	No	
03/13/2009	78	Yes	
06/09/2003	90	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MILLST	**137**	**CHARLES CT**	**03/13/2009**	**69**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	69	Yes	WIDTH VARIES FROM 26 TO 48 FT
06/09/2003	87	Yes	WIDTH VARIES FROM 26 TO 48 FT
07/01/1997	90	Yes	WIDTH VARIES FROM 26 TO 48 FT

Street ID	Section ID	Street Name	Last Updated	PCI
MONTGO	**221A**	**MONTGOMERY ST**	**06/03/2015**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/03/2015	52	No	
03/13/2009	54	Yes	
06/23/2003	59	Yes	
08/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MONTGO	**221B**	**MONTGOMERY ST**	**06/21/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	79	No	
03/13/2009	80	Yes	
06/23/2003	31	Yes	
08/01/1997	70	Yes	

PCI History

Street ID	Section ID	Street Name	Last Updated	PCI
MTJEFF	**117**	**MT. JEFFERSON AVE**	**03/13/2009**	**29**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	29	Yes	
06/09/2003	68	Yes	
07/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MUIRFI	**386**	**MUIRFIELD LN**	**06/01/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	77	No	
03/13/2009	75	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MULBER	**344A**	**MULLBERRY DR**	**03/13/2009**	**57**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	57	Yes	
06/09/2003	75	Yes	
07/01/1997	62	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MULBER	**344B**	**MULLBERRY DR**	**02/23/2010**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/23/2010	78	No	
06/01/2009	78	No	
03/13/2009	76	Yes	
06/09/2003	63	Yes	
07/01/1997	71	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
MYRTLE	**320**	**MYRTLE ST**	**06/01/2009**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	78	No	
03/13/2009	76	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	39	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NATION	**375A**	**NATIONAL WAY**	**08/04/2015**	**40**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	40	No	
10/10/2012	44	No	
03/13/2009	16	Yes	
06/09/2003	65	Yes	
07/01/1997	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NATION	**375B**	**NATIONAL WAY**	**08/04/2015**	**51**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	51	No	
08/14/2014	51	No	
10/11/2012	46	No	
03/13/2009	43	Yes	
06/09/2003	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NATION	**375B**	**NATIONAL WAY**	**08/04/2015**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	63	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NBOONES	**379A**	**N BOONES FERRY RD**	**06/09/2014**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	74	No	ADT ON 11/12/2003 - 2,693 ADT ON 9/2/2010
03/13/2009	82	Yes	ADT ON 11/12/2003 - 2,693 ADT ON 9/2/2010
06/23/2003	43	Yes	ADT ON 11/12/2003 - 2,693 ADT ON 9/2/2010
07/01/1997	74	Yes	ADT ON 11/12/2003 - 2,693 ADT ON 9/2/2010
01/01/1990	100	No	ADT ON 11/12/2003 - 2,693 ADT ON 9/2/2010

Street ID	Section ID	Street Name	Last Updated	PCI
NBOONES	**379B**	**N BOONES FERRY RD**	**06/09/2014**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	70	No	ADT ON 11/12/2003 - 2,603 ADT ON 9/2/2010
03/13/2009	79	Yes	ADT ON 11/12/2003 - 2,603 ADT ON 9/2/2010

Street ID	Section ID	Street Name	Last Updated	PCI
NCSCAD	**248B**	**N CASCADE DR**	**03/13/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	80	Yes	
04/16/2008	84	No	
06/09/2003	92	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NCSCAD	**248C**	**N CASCADE DR**	**03/13/2009**	**46**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	46	Yes	WIDTH VARIES FROM 31 TO 36 FT
04/16/2008	80	No	WIDTH VARIES FROM 31 TO 36 FT
06/09/2003	83	Yes	WIDTH VARIES FROM 31 TO 36 FT
07/01/1997	67	Yes	WIDTH VARIES FROM 31 TO 36 FT

Street ID	Section ID	Street Name	Last Updated	PCI
NEKIAS	**308**	**NEKIA ST**	**06/13/2011**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/13/2011	77	No	
03/13/2009	77	Yes	
06/23/2003	83	Yes	
07/01/1997	86	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NEWPOR	**349A**	**NEWPORT WAY**	**06/15/2011**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	76	No	
03/13/2009	76	Yes	
06/09/2003	90	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
NEWPOR	**349A**	**NEWPORT WAY**	**06/15/2011**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	84	Yes	
01/01/1991	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
NEWPOR	**349B**	**NEWPORT WAY**	**06/15/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	79	No	
03/13/2009	80	Yes	
06/09/2003	95	Yes	
01/01/1999	100	No	
07/01/1997	19	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFIRST	**231B**	**N FIRST ST**	**03/13/2009**	**54**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	54	Yes	
06/23/2003	65	Yes	
08/01/1997	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFIRST	**231C**	**N FIRST ST**	**03/13/2009**	**50**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	50	Yes	
06/23/2003	45	Yes	
08/01/1997	63	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFIRST	**231D**	**N FIRST ST**	**06/10/2015**	**45**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/10/2015	45	No	
06/09/2014	45	No	
03/13/2009	16	Yes	
06/23/2003	21	Yes	
08/01/1997	37	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFRONT	**200B**	**N FRONT ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	48	Yes	
06/23/2003	73	Yes	
07/01/1997	83	Yes	
01/01/1990	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
NFRONT	**200C**	**N FRONT ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	31	Yes	
06/23/2003	19	Yes	
07/01/1997	54	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFRONT	**200D**	**N FRONT ST**	**02/17/2010**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/17/2010	100	No	
03/13/2009	45	Yes	
06/23/2003	40	Yes	
07/01/1997	38	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFRONT	**200E**	**N FRONT ST**	**08/07/2012**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/07/2012	100	No	
03/13/2009	19	Yes	
06/23/2003	55	Yes	
07/01/1997	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NFRONT	**200F**	**N FRONT ST**	**08/07/2012**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/07/2012	100	No	
03/13/2009	15	Yes	
06/23/2003	51	Yes	
07/01/1997	87	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NONAME	**456**	**NO NAME ST**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NORTHC	**448**	**NORTH CT**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232B**	**N SECOND ST**	**06/09/2014**	**45**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	45	No	
03/13/2009	18	Yes	
06/23/2003	42	Yes	
08/01/1997	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232C**	**N SECOND ST**	**06/09/2014**	**44**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	44	No	
03/13/2009	22	Yes	
06/23/2003	44	Yes	
08/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232D**	**N SECOND ST**	**06/09/2014**	**45**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	45	No	
03/13/2009	19	Yes	
06/23/2003	18	Yes	
08/01/1997	25	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232E**	**N SECOND ST**	**03/13/2009**	**17**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	17	Yes	
06/23/2003	27	Yes	
08/01/1997	62	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232F**	**N SECOND ST**	**06/10/2015**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/10/2015	91	No	ADT ON 10/1/2012
06/09/2014	92	No	ADT ON 10/1/2012

Street ID	Section ID	Street Name	Last Updated	PCI
NSECND	**232G**	**N SECOND ST**	**06/10/2015**	**93**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/10/2015	93	No	
07/30/2014	100	No	
06/09/2014	45	No	

Street ID	Section ID	Street Name	Last Updated	PCI
NSETLR	**257B**	**N SETTLEMIER AV**	**03/13/2009**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	78	Yes	
04/16/2008	88	No	
06/09/2003	92	Yes	
01/01/2000	100	No	
07/01/1997	57	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NSETLR	**257C**	**N SETTLEMIER AV**	**03/13/2009**	**48**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	48	Yes	
04/16/2008	81	No	
06/09/2003	85	Yes	
07/01/1997	87	Yes	
01/01/1994	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
NSETLR	**257D**	**N SETTLEMIER AV**	**01/20/2015**	**60**

Date Updated	PCI Hist	PCI from Inspection	Comments
01/20/2015	60	No	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010
03/13/2009	66	Yes	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010
04/16/2008	81	No	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010
06/09/2003	85	Yes	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010
07/01/1997	87	Yes	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010
01/01/1994	100	No	ADT ON 8/30/2003 - 5,825 ADT ON 3/25/2010

Street ID	Section ID	Street Name	Last Updated	PCI
NSETLR	**257E**	**N SETTLEMIER AV**	**03/13/2009**	**65**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	65	Yes	
04/16/2008	81	No	
06/09/2003	86	Yes	
01/01/1999	100	No	
07/01/1997	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
NUGGET	**417**	**NUGGET CT**	**06/22/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	83	No	
03/13/2009	84	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OAKST	**218A**	**OAK ST**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	51	Yes	
08/01/1997	52	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OAKST	**218B**	**OAK ST**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	
06/23/2003	20	Yes	
08/01/1997	31	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OLIVEA	**317**	**OLIVE AVE**	**06/01/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	80	No	
03/13/2009	78	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OLYMPI	**452**	**OLYMPIC ST**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ORCHAR	**107A**	**ORCHARD LANE**	**06/24/2011**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2011	86	No	
03/13/2009	89	Yes	
06/09/2003	83	Yes	
07/01/1997	98	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ORCHAR	**107B**	**ORCHARD LANE**	**06/23/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	82	No	
03/13/2009	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ORCHAR	**107B**	**ORCHARD LANE**	**06/23/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	29	Yes	
07/01/1997	35	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OREGON	**252**	**OREGON WAY**	**06/01/2009**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	79	No	
03/13/2009	77	Yes	
06/09/2003	92	Yes	
07/01/1997	90	Yes	
01/01/1996	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
OREGON	**254**	**OREGON CT**	**06/16/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	79	No	
03/13/2009	80	Yes	
06/09/2003	95	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OXFORD	**407A**	**OXFORD ST**	**08/16/2012**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	88	No	
03/13/2009	100	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
OXFORD	**407B**	**OXFORD ST**	**08/16/2012**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	80	No	
07/10/2012	78	No	
03/13/2009	82	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PALMAV	**316**	**PALM AVE**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	41	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PANACT	**427**	**PANA CT**	**07/01/2014**	**87**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	87	No	
06/21/2011	88	No	
03/13/2009	89	Yes	
06/23/2004	92	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
PANAST	**413A**	**PANA ST**	**07/01/2014**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	86	No	ADT ON 8/5/2005
03/13/2009	89	Yes	ADT ON 8/5/2005
06/23/2004	92	Yes	ADT ON 8/5/2005

Street ID	Section ID	Street Name	Last Updated	PCI
PANAST	**413B**	**PANA ST**	**07/01/2014**	**78**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	78	No	
03/13/2009	83	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARADI	**444**	**PARADISE ST**	**07/10/2012**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	88	No	
03/13/2009	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARKAV	**127A**	**PARK AVE**	**08/04/2015**	**36**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	36	No	
03/13/2009	50	Yes	
06/09/2003	88	Yes	
07/01/1997	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARKAV	**127B**	**PARK AVE**	**08/04/2015**	**0**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	0	No	
03/13/2009	17	Yes	
06/09/2003	36	Yes	
07/01/1997	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARKAV	**127C**	**PARK AVE**	**08/04/2015**	**53**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	53	No	ADT ON 4/19/1998 - 1,615 ADT ON 10/19/2000 - 886 ADT ON 2/5/2004 - 1,269 ADT ON 6/2/2009
06/11/2015	50	No	ADT ON 4/19/1998 - 1,615 ADT ON 10/19/2000 - 886 ADT ON 2/5/2004 - 1,269 ADT ON 6/2/2009
03/13/2009	50	Yes	ADT ON 4/19/1998 - 1,615 ADT ON 10/19/2000 - 886 ADT ON 2/5/2004 - 1,269 ADT ON 6/2/2009
06/09/2003	77	Yes	ADT ON 4/19/1998 - 1,615 ADT ON 10/19/2000 - 886 ADT ON 2/5/2004 - 1,269 ADT ON 6/2/2009

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Street ID	Section ID	Street Name	Last Updated	PCI
PARKAV	**127C**	**PARK AVE**	**08/04/2015**	**67**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	81	Yes	ADT ON 4/19/1998 - 1,615 ADT ON 10/19/2000 - 886 ADT ON 2/5/2004 - 1,269 ADT ON 6/2/2009

Street ID	Section ID	Street Name	Last Updated	PCI
PARKAV	**127D**	**PARK AVE**	**08/04/2015**	**67**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	67	No	
06/24/2010	71	No	
03/13/2009	70	Yes	
06/09/2003	90	Yes	
01/01/1999	100	No	
07/01/1997	50	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARKCI	**128**	**PARK CIRCLE**	**06/23/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	83	No	
03/13/2009	84	Yes	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARKVI	**129**	**PARKVIEW CT**	**03/13/2009**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	52	Yes	
06/09/2003	77	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PARRRD	**201A**	**PARR RD**	**08/04/2015**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	79	No	ADT ON 12/1/2003
03/13/2009	90	Yes	ADT ON 12/1/2003

Street ID	Section ID	Street Name	Last Updated	PCI
PATRIO	**422**	**PATRIOT ST**	**06/01/2009**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	80	No	
03/13/2009	78	Yes	
04/16/2008	86	No	
06/23/2004	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PAULIN	**113**	**PAULINE ST**	**03/13/2009**	**61**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	61	Yes	
06/23/2003	76	Yes	
07/01/1997	79	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
PAULUS	**395**	**PAULUS CT**	**06/01/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	77	No	
03/13/2009	75	Yes	
06/23/2004	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PRAIRI	**443**	**PRAIRIE ST**	**07/10/2012**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	88	No	
03/13/2009	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
PRINCE	**329A**	**PRINCETON RD**	**07/01/2014**	**69**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	69	No	No PSL - Residental 25 MPH Type C curb
03/13/2009	67	Yes	No PSL - Residental 25 MPH Type C curb
06/09/2003	89	Yes	No PSL - Residental 25 MPH Type C curb
07/01/1997	85	Yes	No PSL - Residental 25 MPH Type C curb
01/01/1992	100	No	No PSL - Residental 25 MPH Type C curb

Street ID	Section ID	Street Name	Last Updated	PCI
PRINCE	**329B**	**PRINCETON RD**	**06/24/2010**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	76	No	
03/13/2009	75	Yes	
06/09/2003	88	Yes	
07/01/1997	85	Yes	
01/01/1992	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
PROGRE	**374A**	**PROGRESS WAY**	**08/04/2015**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	73	No	
03/13/2009	79	Yes	
06/09/2003	92	Yes	
01/01/1999	100	No	
07/01/1997	31	Yes	
01/01/1996	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
PROGRE	**374B**	**PROGRESS WAY**	**08/04/2015**	**75**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	75	No	
03/13/2009	80	Yes	
06/09/2003	92	Yes	
01/01/1999	100	No	
07/01/1997	30	Yes	
01/01/1996	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
QUAILR	**384**	**QUAIL RUN CIR**	**07/08/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/08/2011	79	No	
03/13/2009	79	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
QUEENC	**130**	**QUEEN CITY BLVD**	**07/06/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/06/2011	79	No	
03/13/2009	80	Yes	
06/09/2003	90	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
QUINNR	**330**	**QUINN RD**	**03/13/2009**	**26**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	26	Yes	
04/12/2004	33	No	
06/09/2003	33	Yes	
07/01/1997	21	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
QUINNR	**330A**	**QUINN RD**	**03/13/2009**	**42**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	42	Yes	
04/16/2008	65	No	
04/12/2004	69	No	
06/09/2003	67	Yes	
07/01/1997	71	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
QUINNR	**330B**	**QUINN RD**	**03/13/2009**	**34**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	34	Yes	
04/16/2008	27	No	
04/12/2004	36	No	
06/09/2003	36	Yes	
07/01/1997	36	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
RANDOL	**326**	**RANDOLPH RD**	**06/01/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	84	No	
03/13/2009	83	Yes	
07/28/2004	100	No	
06/09/2003	74	Yes	
07/01/1997	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
RANIER	**327A**	**RAINIER RD**	**06/15/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	82	No	
03/13/2009	83	Yes	
06/12/2006	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
RANIER	**327A**	**RAINIER RD**	**06/15/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	30	Yes	
07/01/1997	43	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
RANIER	**327B**	**RAINIER RD**	**06/15/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	81	No	
03/13/2009	82	Yes	
06/12/2006	100	No	
06/09/2003	73	Yes	
07/01/1997	67	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
REEDAV	**435**	**REED AVE**	**03/13/2009**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	100	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
REVERE	**401**	**REVERE ST**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ROANOK	**425A**	**ROANOKE ST**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2004	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ROANOK	**425B**	**ROANOKE ST**	**03/13/2009**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	79	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ROBERT	**360**	**ROBERT ST**	**03/13/2009**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	77	Yes	
06/09/2003	90	Yes	
07/01/1997	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
ROBINA	**430**	**ROBIN AVE**	**08/04/2015**	**45**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	45	No	ADT ON 7/31/2008
06/11/2015	43	No	ADT ON 7/31/2008
03/13/2009	44	Yes	ADT ON 7/31/2008

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Street ID	Section ID	Street Name	Last Updated	PCI
ROYAVE	**416**	**ROY AVE**	**06/22/2011**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	79	No	
03/13/2009	80	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SALLAL	**331A**	**SALLAL RD**	**06/01/2009**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	83	No	
03/13/2009	82	Yes	
04/16/2008	89	No	
07/28/2004	100	No	
06/09/2003	41	Yes	
07/01/1997	29	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SALLAL	**331B**	**SALLAL RD**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	80	Yes	
04/16/2008	89	No	
07/28/2004	100	No	
06/09/2003	24	Yes	
07/01/1997	22	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SALLAL	**336**	**SALLAL CT**	**06/01/2009**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	83	No	
03/13/2009	82	Yes	
07/28/2004	100	No	
06/09/2003	44	Yes	
07/01/1997	24	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SANTIA	**249**	**SANTIAM DR**	**03/13/2009**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	95	Yes	
06/28/2006	100	No	
06/09/2003	19	Yes	
07/01/1997	21	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SAWGRA	**453**	**SAWGRASS ST**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SBOONY	**380**	**S BOONES FERRY RD**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	WIDTH VARIES Split From SFRONT200A 03/01/09
06/17/2006	100	No	WIDTH VARIES Split From SFRONT200A 03/01/09

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Street ID	Section ID	Street Name	Last Updated	PCI
SBOONY	**380**	**S BOONES FERRY RD**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2003	20	Yes	WIDTH VARIES Split From SFRONT200A 03/01/09
07/01/1997	27	Yes	WIDTH VARIES Split From SFRONT200A 03/01/09

Street ID	Section ID	Street Name	Last Updated	PCI
SCSCAD	**248A**	**S CASCADE DR**	**06/24/2010**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	77	No	
03/13/2009	77	Yes	
06/09/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	19	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SENECA	**161**	**SENECA CT**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	79	Yes	
04/16/2008	87	No	
04/12/2004	93	No	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	53	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SENECA	**309A**	**SENECAL CREEK DR**	**03/22/2016**	**60**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/22/2016	60	No	ADT ON 9/16/1998
06/14/2011	65	No	ADT ON 9/16/1998
03/13/2009	65	Yes	ADT ON 9/16/1998
06/23/2003	81	Yes	ADT ON 9/16/1998
07/01/1997	81	Yes	ADT ON 9/16/1998

Street ID	Section ID	Street Name	Last Updated	PCI
SENECA	**309B**	**SENECAL CREEK DR**	**03/22/2016**	**75**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/22/2016	75	No	
03/13/2009	81	Yes	
06/23/2003	83	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SFIRST	**231A**	**S FIRST ST**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	80	Yes	
06/23/2003	89	Yes	
08/01/1997	92	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
SFRONT	**200A**	**S FRONT ST**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	Split From SFRONT200A 03/01/09
06/17/2006	100	No	Split From SFRONT200A 03/01/09
06/23/2003	20	Yes	Split From SFRONT200A 03/01/09
07/01/1997	27	Yes	Split From SFRONT200A 03/01/09

Street ID	Section ID	Street Name	Last Updated	PCI
SHENAN	**457**	**SHENANDOAH LN**	**06/24/2010**	**69**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	69	No	
03/13/2009	69	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SILVER	**183A**	**SILVERTON RD**	**03/13/2009**	**17**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	17	Yes	
06/23/2003	17	Yes	
07/01/1997	18	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SILVER	**183B**	**SILVERTON RD**	**03/13/2009**	**67**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	67	Yes	
06/23/2003	18	Yes	
07/01/1997	18	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SIXTH	**236A**	**SIXTH ST**	**03/13/2009**	**37**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	37	Yes	
06/23/2003	32	Yes	
08/01/1997	80	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SKYLER	**439**	**SKYLER DR**	**03/13/2009**	**95**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SMITHC	**259**	**SMITH CT**	**03/13/2009**	**61**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	61	Yes	
04/16/2008	83	No	
06/09/2003	87	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SMITHD	**239A**	**SMITH DR**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/09/2003	72	Yes	
07/01/1997	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SMITHD	**239B**	**SMITH DR**	**03/13/2009**	**52**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	52	Yes	
04/16/2008	81	No	
06/09/2003	85	Yes	
07/01/1997	79	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SPRAGU	**432**	**SPRAGUE LN**	**08/04/2015**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	66	No	
06/24/2010	72	No	
03/13/2009	72	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SSECND	**232A**	**S SECOND ST**	**03/13/2009**	**53**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	53	Yes	
06/23/2003	44	Yes	
08/01/1997	55	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SSETLR	**257A**	**S SETTLEMIER AV**	**05/06/2013**	**59**

Date Updated	PCI Hist	PCI from Inspection	Comments
05/06/2013	59	No	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008
03/13/2009	60	Yes	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008
04/16/2008	84	No	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008
06/09/2003	89	Yes	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008
01/01/2000	100	No	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008
07/01/1997	46	Yes	ADT ON 8/13/1997 - 1,291 ADT ON 3/20/2001 - 4,947 ADT ON 8/22/2008

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STACYA	**255A**	**STACY ALLISON WAY**	**08/16/2012**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	91	No	
03/13/2009	95	Yes	
04/16/2008	74	No	
06/09/2003	81	Yes	
07/01/1997	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STACYA	**255B**	**STACY ALLISON WAY**	**08/16/2012**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	90	No	
03/13/2009	96	Yes	

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(503) 980-2408

PCI History

Printed: 04/01/2016

Street ID	Section ID	Street Name	Last Updated	PCI
STACYA	**255C**	**STACY ALLISON WAY**	**08/16/2012**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	91	No	
03/13/2009	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STANFI	**500**	**STANFIELD RD**	**07/10/2012**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/10/2012	80	No	
06/01/2009	84	No	
03/13/2009	83	Yes	
07/28/2004	100	No	
06/09/2003	36	Yes	
07/01/1997	31	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STANFO	**403**	**STANFORD ST**	**08/16/2012**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	79	No	
07/10/2012	77	No	
06/01/2009	80	No	
03/13/2009	79	Yes	
06/23/2004	88	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STARKC	**163**	**STARK CT**	**03/13/2009**	**90**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	90	Yes	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	51	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STARKS	**159A**	**STARK ST**	**06/01/2009**	**79**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	79	No	
03/13/2009	77	Yes	
04/01/2004	93	No	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
STARKS	**159B**	**STARK ST**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
04/16/2008	87	No	
04/06/2004	93	No	
06/23/2003	96	Yes	
01/01/2002	100	No	
07/01/1997	77	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
STARKS	**159C**	**STARK ST**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	Split From STARKS159C 03/01/09
06/23/2003	45	Yes	Split From STARKS159C 03/01/09
07/01/1997	63	Yes	Split From STARKS159C 03/01/09

Street ID	Section ID	Street Name	Last Updated	PCI
STARKS	**159D**	**STARK ST**	**03/13/2009**	**54**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	54	Yes	Split From STARKS159C 03/01/09
06/23/2003	45	Yes	Split From STARKS159C 03/01/09
07/01/1997	63	Yes	Split From STARKS159C 03/01/09

Street ID	Section ID	Street Name	Last Updated	PCI
STEVEN	**305**	**STEVEN ST**	**03/13/2009**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	73	Yes	
06/23/2003	82	Yes	
07/01/1997	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SWDLND	**300F**	**S WOODLAND AVE**	**07/15/2012**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/15/2012	81	No	
03/13/2009	84	Yes	
06/28/2006	100	No	
06/23/2003	34	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SWDLND	**300G**	**S WOODLAND AVE**	**07/15/2012**	**70**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/15/2012	70	No	
06/24/2010	71	No	
03/13/2009	71	Yes	
06/23/2004	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SWEETW	**445**	**SWEETWATER AVE**	**08/16/2012**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	82	No	
07/10/2012	81	No	
03/13/2009	85	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
SYCAMO	**315**	**SYCAMORE AVE**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	80	Yes	
06/23/2003	95	Yes	
01/01/2001	100	No	
07/01/1997	42	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
TENOAK	**310A**	**TEN OAKS LANE**	**08/04/2015**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	77	No	
06/14/2011	80	No	
06/01/2009	81	No	
03/13/2009	79	Yes	
06/23/2003	89	Yes	
07/01/1997	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TENOAK	**310B**	**TEN OAKS LANE**	**08/04/2015**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	73	No	
06/14/2011	76	No	
03/13/2009	77	Yes	
06/23/2003	84	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THIRD	**233A**	**THIRD ST**	**06/21/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/21/2011	83	No	
03/13/2009	84	Yes	
06/23/2003	64	Yes	
08/01/1997	68	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THIRD	**233B**	**THIRD ST**	**06/01/2009**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	81	No	
03/13/2009	80	Yes	
06/23/2003	36	Yes	
08/01/1997	46	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THIRD	**233C**	**THIRD ST**	**06/09/2014**	**43**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2014	43	No	ADT ON 8/13/2010
03/13/2009	30	Yes	ADT ON 8/13/2010
06/23/2003	55	Yes	ADT ON 8/13/2010
08/01/1997	70	Yes	ADT ON 8/13/2010

Street ID	Section ID	Street Name	Last Updated	PCI
THOMPS	**332A**	**THOMPSON RD**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/12/2006	100	No	
06/09/2003	45	Yes	
07/01/1997	40	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THOMPS	**332B**	**THOMPSON RD**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
06/12/2006	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
THOMPS	**332B**	**THOMPSON RD**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	47	Yes	
07/01/1997	21	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THOMPS	**332C**	**THOMPSON RD**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/12/2006	100	No	
06/09/2003	81	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
THOMPS	**332D**	**THOMPSON RD**	**03/13/2009**	**86**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	86	Yes	
06/12/2006	100	No	
06/09/2003	19	Yes	
07/01/1997	39	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TIERRA	**126A**	**TIERRA LYNN DR**	**03/13/2009**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	72	Yes	
04/16/2008	82	No	
06/09/2003	85	Yes	
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TIERRA	**126B**	**TIERRA LYNN DR**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
04/16/2008	87	No	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	22	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TIERRA	**126C**	**TIERRA LYNN DR**	**02/23/2010**	**76**

Date Updated	PCI Hist	PCI from Inspection	Comments
02/23/2010	76	No	
03/13/2009	75	Yes	
06/09/2003	95	Yes	
01/01/2000	100	No	
07/01/1997	66	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TIERRA	**181**	**TIERRA LYNN CT**	**03/13/2009**	**64**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	64	Yes	
04/16/2008	77	No	
06/09/2003	81	Yes	
07/01/1997	59	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TIERRA	**182**	**TIERRA CT**	**03/13/2009**	**59**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	59	Yes	
04/16/2008	79	No	
06/09/2003	83	Yes	
07/01/1997	62	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TOMLIN	**114A**	**TOMLIN AVE**	**06/23/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/23/2011	82	No	
03/13/2009	85	Yes	
06/05/2006	100	No	
06/23/2003	57	Yes	
07/01/1997	67	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TOMLIN	**114B**	**TOMLIN AVE**	**03/13/2009**	**88**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	88	Yes	
06/05/2006	100	No	
06/23/2003	65	Yes	
07/01/1997	64	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TOUTST	**458**	**TOUT ST**	**03/13/2009**	**96**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	96	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TRACYL	**420**	**TRACY LN**	**06/16/2011**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	81	No	
03/13/2009	83	Yes	
07/28/2004	100	No	
07/28/2004	100	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TROONA	**451A**	**TROON AVE**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368A**	**TUKWILA DR**	**06/16/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	83	No	
03/13/2009	84	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368B**	**TUKWILA DR**	**06/16/2011**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/16/2011	82	No	
03/13/2009	83	Yes	
06/23/2004	90	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368C**	**TUKWILA DR**	**03/13/2009**	**13**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	13	Yes	
06/09/2003	89	Yes	
07/01/1997	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368D**	**TUKWILA DR**	**03/13/2009**	**35**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	35	Yes	
06/09/2003	72	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368E**	**TUKWILA DR**	**06/24/2010**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	72	No	
03/13/2009	71	Yes	
10/02/2006	100	No	
06/09/2003	59	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TUKWIL	**368Z**	**TUKWILA DR**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
TULIP	**460**	**TULIP AVE**	**07/01/2014**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	91	No	ADT ON 4/15/2009 - 286 ADT ON 12/15/2010
03/13/2009	95	Yes	ADT ON 4/15/2009 - 286 ADT ON 12/15/2010

Street ID	Section ID	Street Name	Last Updated	PCI
TURNBE	**450**	**TURNBERRY AVE**	**03/13/2009**	**92**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**333A**	**UMPQUA RD**	**06/01/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	82	No	
03/13/2009	81	Yes	
07/12/2004	100	No	
06/09/2003	64	Yes	
07/01/1997	58	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**333B**	**UMPQUA RD**	**06/01/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/01/2009	82	No	
03/13/2009	81	Yes	
07/12/2004	100	No	

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Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**333B**	**UMPQUA RD**	**06/01/2009**	**82**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/09/2003	19	Yes	
07/01/1997	31	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**333C**	**UMPQUA RD**	**06/24/2010**	**77**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	77	No	
03/13/2009	76	Yes	
06/09/2003	88	Yes	
07/01/1997	86	Yes	
01/01/1991	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**335**	**UMPQUA CT**	**06/15/2011**	**80**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/15/2011	80	No	
03/13/2009	82	Yes	
07/12/2004	100	No	
06/09/2003	74	Yes	
07/01/1997	61	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
UMPQUA	**351**	**UMPQUA PL**	**03/13/2009**	**39**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	39	Yes	
06/09/2003	75	Yes	
07/01/1997	73	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353A**	**VANDERBECK LN**	**03/13/2009**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	72	Yes	
06/23/2004	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353B**	**VANDERBECK LN**	**06/24/2010**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	72	No	
03/13/2009	71	Yes	
06/23/2004	89	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353C**	**VANDERBECK LN**	**06/24/2010**	**72**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/24/2010	72	No	
03/13/2009	71	Yes	
06/23/2004	92	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353D**	**VANDERBECK LN**	**03/13/2009**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	83	Yes	
06/09/2003	94	Yes	
07/01/1997	39	Yes	

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Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353E**	**VANDERBECK LN**	**03/13/2009**	**89**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	89	Yes	
06/12/2006	100	No	
06/09/2003	20	Yes	
07/01/1997	18	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VANDER	**353F**	**VANDERBECK LN**	**03/13/2009**	**74**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	74	Yes	
06/09/2003	91	Yes	
07/01/1997	86	Yes	
01/01/1992	100	No	

Street ID	Section ID	Street Name	Last Updated	PCI
VANLIE	**120**	**VAN LIEU CT**	**06/11/2015**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	100	No	
03/13/2009	26	Yes	
06/09/2003	63	Yes	
07/01/1997	77	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VASSER	**409**	**VASSER ST**	**08/16/2012**	**81**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/16/2012	81	No	
07/10/2012	80	No	
06/17/2011	80	No	
03/13/2009	82	Yes	
06/23/2004	95	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
VINEAV	**459**	**VINE AVE**	**07/01/2014**	**91**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/2014	91	No	ADT ON 4/22/2009
03/13/2009	95	Yes	ADT ON 4/22/2009

Street ID	Section ID	Street Name	Last Updated	PCI
WALKER	**168**	**WALKER CT**	**03/13/2009**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	84	Yes	
06/23/2003	89	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WALTON	**334**	**WALTON WAY**	**03/13/2009**	**30**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	30	Yes	
06/09/2003	61	Yes	
07/01/1997	51	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WARREN	**169A**	**WARREN WAY**	**06/22/2011**	**56**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	56	No	
03/13/2009	57	Yes	
06/23/2003	75	Yes	
07/01/1997	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WARREN	**169B**	**WARREN WAY**	**06/22/2011**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/22/2011	83	No	
03/13/2009	84	Yes	
06/23/2003	82	Yes	
07/01/1997	90	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WESTHA	**223A**	**W HAYES ST**	**03/13/2009**	**18**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	18	Yes	
06/09/2003	45	Yes	
07/01/1997	42	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WESTHA	**223B**	**W HAYES ST**	**03/13/2009**	**53**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	53	Yes	
06/09/2003	76	Yes	
07/01/1997	75	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WESTHA	**223C**	**W HAYES ST**	**06/28/2013**	**53**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2013	53	No	ADT ON 9/26/2003 - 2,671 ADT ON 5/23/2005 - 2,946 ADT ON 3/19/2008 - 5,821 ADT ON 4/10/2008 - 5,671 ADT ON 4/17/2012
03/13/2009	47	Yes	ADT ON 9/26/2003 - 2,671 ADT ON 5/23/2005 - 2,946 ADT ON 3/19/2008 - 5,821 ADT ON 4/10/2008 - 5,671 ADT ON 4/17/2012
04/16/2008	66	No	ADT ON 9/26/2003 - 2,671 ADT ON 5/23/2005 - 2,946 ADT ON 3/19/2008 - 5,821 ADT ON 4/10/2008 - 5,671 ADT ON 4/17/2012
06/09/2003	74	Yes	ADT ON 9/26/2003 - 2,671 ADT ON 5/23/2005 - 2,946 ADT ON 3/19/2008 - 5,821 ADT ON 4/10/2008 - 5,671 ADT ON 4/17/2012
07/01/1997	69	Yes	ADT ON 9/26/2003 - 2,671 ADT ON 5/23/2005 - 2,946 ADT ON 3/19/2008 - 5,821 ADT ON 4/10/2008 - 5,671 ADT ON 4/17/2012

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WESTHA	**223D**	**W HAYES ST**	**06/28/2013**	**42**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2013	42	No	ADT ON 3/12/2008 - 5,571 ADT ON 4/10/2008
03/13/2009	25	Yes	ADT ON 3/12/2008 - 5,571 ADT ON 4/10/2008
04/16/2008	24	No	ADT ON 3/12/2008 - 5,571 ADT ON 4/10/2008
06/09/2003	46	Yes	ADT ON 3/12/2008 - 5,571 ADT ON 4/10/2008
07/01/1997	36	Yes	ADT ON 3/12/2008 - 5,571 ADT ON 4/10/2008

Street ID	Section ID	Street Name	Last Updated	PCI
WESTHA	**223E**	**W HAYES ST**	**06/28/2013**	**55**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2013	55	No	ADT ON 7/2/1998
03/13/2009	53	Yes	ADT ON 7/2/1998
04/16/2008	75	No	ADT ON 7/2/1998
06/09/2003	86	Yes	ADT ON 7/2/1998
07/01/1997	84	Yes	ADT ON 7/2/1998

Street ID	Section ID	Street Name	Last Updated	PCI
WESTHA	**223F**	**W HAYES ST**	**06/28/2013**	**63**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/28/2013	63	No	ADT ON 3/4/2001
03/13/2009	60	Yes	ADT ON 3/4/2001
06/09/2003	95	Yes	ADT ON 3/4/2001
01/01/2002	100	No	ADT ON 3/4/2001
07/01/1997	41	Yes	ADT ON 3/4/2001

Street ID	Section ID	Street Name	Last Updated	PCI
WESTLI	**246A**	**W LINCOLN ST**	**03/13/2009**	**85**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	85	Yes	
05/08/2006	100	No	
06/23/2003	73	Yes	
07/01/1997	78	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WESTLI	**246B**	**W LINCOLN ST**	**03/13/2009**	**42**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	42	Yes	
04/16/2008	75	No	
06/09/2003	78	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WESTLI	**246C**	**W LINCOLN ST**	**03/13/2009**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILLAM	**436**	**WILLAMETTE ST**	**03/13/2009**	**100**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	100	Yes	

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WILLIA	**133**	**WILLIAMS AVE**	**03/13/2009**	**42**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	42	Yes	
06/09/2003	70	Yes	
07/01/1997	56	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILLOW	**301A**	**WILLOW AVE**	**08/04/2015**	**67**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	67	No	ADT ON 1/10/1997
06/01/2009	73	No	ADT ON 1/10/1997
03/13/2009	71	Yes	ADT ON 1/10/1997
06/23/2003	95	Yes	ADT ON 1/10/1997
01/01/2001	100	No	ADT ON 1/10/1997
07/01/1997	53	Yes	ADT ON 1/10/1997

Street ID	Section ID	Street Name	Last Updated	PCI
WILLOW	**301B**	**WILLOW AVE**	**08/04/2015**	**68**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	68	No	
06/24/2010	73	No	
06/01/2009	71	No	
03/13/2009	69	Yes	
06/23/2003	77	Yes	
07/01/1997	83	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILLOW	**301C**	**WILLOW AVE**	**08/04/2015**	**73**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	73	No	
03/13/2009	78	Yes	
06/23/2003	83	Yes	
07/01/1997	81	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILSON	**165A**	**WILSON ST**	**03/13/2009**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	66	Yes	
06/23/2003	75	Yes	
07/01/1997	53	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILSON	**165B**	**WILSON ST**	**03/13/2009**	**33**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	33	Yes	
06/23/2003	57	Yes	
07/01/1997	74	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WILSON	**165C**	**WILSON ST**	**03/13/2009**	**34**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	34	Yes	
06/23/2003	59	Yes	
07/01/1997	49	Yes	

City of Woodburn
190 Garfield Street
Woodburn, OR 97071
(503) 980-2408

PCI History

Printed: 04/01/2016

Street ID	Section ID	Street Name	Last Updated	PCI
WLINC	**110E**	**W LINCOLN ST**	**03/13/2009**	**59**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	59	Yes	
04/16/2008	67	No	
06/09/2003	75	Yes	
08/01/1997	75	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WLINC	**110F**	**W LINCOLN ST**	**03/13/2009**	**35**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	35	Yes	
04/16/2008	56	No	
06/09/2003	67	Yes	
08/01/1997	70	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WOODCR	**217**	**WOODCREST CT**	**06/11/2015**	**0**

Date Updated	PCI Hist	PCI from Inspection	Comments
06/11/2015	0	No	
03/13/2009	12	Yes	
06/23/2003	24	Yes	
07/01/1997	53	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300A**	**WOODLAND AV**	**08/04/2015**	**46**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	46	No	ADT ON 6/18/2008
06/11/2015	44	No	ADT ON 6/18/2008
03/13/2009	27	Yes	ADT ON 6/18/2008
06/23/2003	75	Yes	ADT ON 6/18/2008
07/01/1997	44	Yes	ADT ON 6/18/2008

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300B**	**WOODLAND AV**	**08/04/2015**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	66	No	ADT ON 11/16/2001
03/13/2009	72	Yes	ADT ON 11/16/2001
06/23/2003	84	Yes	ADT ON 11/16/2001
07/01/1997	80	Yes	ADT ON 11/16/2001

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300C**	**WOODLAND AV**	**08/04/2015**	**0**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	0	No	
03/13/2009	20	Yes	
06/23/2003	37	Yes	
07/01/1997	30	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300D**	**WOODLAND AV**	**08/04/2015**	**68**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	68	No	
06/24/2010	72	No	
03/13/2009	71	Yes	
06/23/2003	73	Yes	

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190 Garfield Street
Woodburn, OR 97071
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PCI History

Printed: 04/01/2016

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300D**	**WOODLAND AV**	**08/04/2015**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
07/01/1997	82	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WOODLA	**300E**	**WOODLAND AV**	**08/04/2015**	**66**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	66	No	
06/24/2010	72	No	
03/13/2009	71	Yes	
06/23/2003	83	Yes	
07/01/1997	84	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
WORKMA	**240**	**WORKMAN DR**	**03/13/2009**	**83**

Date Updated	PCI Hist	PCI from Inspection	Comments
03/13/2009	83	Yes	
06/09/2003	40	Yes	
07/01/1997	51	Yes	

Street ID	Section ID	Street Name	Last Updated	PCI
YOUNGS	**157A**	**YOUNG ST**	**08/04/2015**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	84	No	ADT ON 7/24/2008
06/01/2010	100	No	ADT ON 7/24/2008
03/13/2009	38	Yes	ADT ON 7/24/2008
06/23/2003	56	Yes	ADT ON 7/24/2008
07/01/1997	64	Yes	ADT ON 7/24/2008

Street ID	Section ID	Street Name	Last Updated	PCI
YOUNGS	**157B**	**YOUNG ST**	**08/04/2015**	**84**

Date Updated	PCI Hist	PCI from Inspection	Comments
08/04/2015	84	No	ADT ON 7/24/2008 - 6,367 ADT ON 2/4/2009
06/01/2010	100	No	ADT ON 7/24/2008 - 6,367 ADT ON 2/4/2009
03/13/2009	47	Yes	ADT ON 7/24/2008 - 6,367 ADT ON 2/4/2009
06/23/2003	67	Yes	ADT ON 7/24/2008 - 6,367 ADT ON 2/4/2009
07/01/1997	66	Yes	ADT ON 7/24/2008 - 6,367 ADT ON 2/4/2009

Attachment D

Methodology Memo

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TECHNICAL MEMORANDUM

Woodburn Transportation System Plan (TSP) Update

Analysis Methodology and Assumptions Memorandum (Subtask 2.3)

Date:	February 21, 2018	Project #:21071.2
To:	Chris Kerr, City of Woodburn Dan Fricke, Oregon Department of Transportation, Region 2	
From:	Matt Hughart and Molly McCormick, Kittelson & Associates, Inc.	

This memorandum documents the methodology and key assumptions to be used in preparation of analyses for the Woodburn Transportation System Plan (TSP) Update. The methodology and assumptions included in this memorandum are based on guidance provided in the Oregon Department of Transportation (ODOT) Transportation System Plan Guidelines (2008, Reference 1), the ODOT Analysis Procedures Manual (APM, Versions 1 and 2, Reference 2), and direction provided by City and ODOT staff. The analyses described in this memorandum will help identify potential deficiencies in the transportation system, including:

- Traffic operations at the study intersections under existing and future traffic conditions,
- Traffic safety at the study intersections and along study area roadways,
- Gaps and deficiencies in the bicycle and pedestrian network,
- Gaps and deficiencies in transit service (service frequency, hours, coverage, etc.), and
- Gaps and deficiencies in other travel modes.

This information will serve as a baseline for identifying a comprehensive list of needs and deficiencies to be addressed as part of the TSP update. It will also serve as a baseline for identifying and evaluating potential solutions and developing a prioritized list of improvements for the TSP update.

STUDY INTERSECTIONS AND STUDY SEGMENTS

The study intersections and segments for the Woodburn TSP Update were determined by the City and ODOT prior to the development of the scope of the work. There is a total of 22 study intersections located along City and ODOT facilities, including 11 signalized and 11 unsignalized intersections. There are three study segments. Traffic counts were conducted by the Oregon Department of Transportation in fall 2017 and consist of 16-hour and 96-hour[1] counts, as noted in Table 1 and Table 2. The process for determining the seasonal adjustment factors in Table 1 is discussed in sections below.

Table 1: Study Intersections

Map ID	Intersection	Count Date	Count Type	Peak Hour Start	Peak Hour TEV	Seasonal Adjustment Factor
1	Butteville Road/OR 219	9/28/2017	16-hour	3:45 PM	822	1.16
2	OR 219/Woodland Avenue	9/26/2017	16-hour	5:00 PM	1,354	1.06
3	OR 214/I-5 Southbound Ramp	9/28/2017	16-hour	4:15 PM	2,560	1.04
4	OR 214/I-5 Northbound Ramp	9/28/2017	16-hour	4:15 PM	2,713	1.04
5	OR 214/Evergreen Road	9/26/2017	16-hour	4:00 PM	2,487	1.06
6	OR 214/Oregon Way/Country Club Road	9/28/2017	16-hour	4:15 PM	2,093	1.06
7	Cascade Drive/OR 214	9/28/2017	16-hour	4:45 PM	1,899	1.06
8	OR 214/Boones Ferry Road NE	9/26/2017	16-hour	4:30 PM	2,517	1.06
9	OR 214/Meridian Drive/5th Street	9/28/2017	16-hour	4:00 PM	1,602	1.06
10	Front Street/OR 214	10/5/2017	16-hour	4:15 PM	1,733	1.09
11	Park Avenue/OR 214	9/28/2017	16-hour	3:45 PM	1,751	1.06
12	OR 214/OR 211/OR 99E	9/26/2017	16-hour	3:30 PM	2,879	1.05
13	Boones Ferry Road NE/Crosby Road	10/3/2017	16-hour	4:30 PM	736	N/A
14	Hardcastle Avenue/Front Street	9/26/2017	16-hour	4:45 PM	701	N/A
15	Lincoln Street/Front Street	9/28/2017	16-hour	5:15 PM	795	N/A
16	Garfield Street/Young Street/Front Street	9/28/2017	16-hour	5:00 PM	770	N/A
17	Cleveland Street/Front Street	9/26/2017	16-hour	5:00 PM	688	N/A
18	Parr Road/Settlemier Avenue	9/28/2017	16-hour	5:00 PM	804	N/A
19	OR 99E/Hardcastle Avenue	10/5/2017	16-hour	4:30 PM	2,546	1.05
20	OR 99E/Lincoln Street	10/5/2017	16-hour	4:30 PM	2,405	1.05
21	OR 99E/Young Street	9/26/2017	16-hour	4:30 PM	2,564	1.05
22	OR 99E/Cleveland Street	9/28/2017	16-hour	4:15 PM	1,798	1.05

Table 2: Study Segments

Map ID	Intersection	Count Date	Count Type
S1	Willow Avenue – Roadway Segment	9/25 – 9/28/2017	96-hour
S2	Hayes Street – Roadway Segment	9/25 – 9/28/2017	84-hour
S3	Gatch Street – Roadway Segment	9/25 – 9/28/2017	96-hour

[1] Traffic counts collected on the Hayes Street roadway segment included 84 hours of data instead of 96 hours. It is assumed that there were technical difficulties at this location during data collection.

Peak Hour Development

The traffic counts were reviewed to determine individual and system-wide peak hours for the operational analyses. The system-wide peak hour for the study intersections was identified as 4:30 to 5:30 p.m. The system peak hour will be used to complete the operational analyses in order to accurately represent the overall peak period experienced on the Woodburn roadway system.

Seasonal Factors

30th Hour Volumes (30 HV) for the Woodburn TSP Update will be developed based on the traffic counts collected at the study intersections and the application of seasonal adjustment factors consistent with the methodology identified in the APM. The APM outlines three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATRs) located in select locations throughout the State Highway System that collect traffic data 24-hours a day, 365 days a year. Each method was evaluated to determine the most appropriate method for the study intersections. Based on the evaluations, a combination of the On-Site ATR method and the Seasonal Trend Table method will be used to develop 30 HV volumes at the ODOT study intersections. The results of the evaluation are summarized below.

On-Site ATR Method

Based on conversations with ODOT staff and the APM, it was suggested that ATR 24-020 (located west of Woodburn on OR 219) and ATR 24-001 (located north of Woodburn on OR 99E) would be appropriate ATRs for seasonally adjusting the Butteville Road/OR 219 intersection and intersections along OR99E, respectively. The On-Site ATR Method adjustment factors for these ATRs are outlined in Table 3 below.

Table 3: Seasonal Adjustment Factors using the On-Site ATR Method

ATR	Data Month	2016	2015	2014	2013	2012	Average[1]	Seasonal Adjustment Factor
24-020	Peak Month (July)	121	120	126	127	135	125	1.16
	Count Month (September)	113	109	107	107	107	108	
24-001	Peak Month (June/July/August)	111	113	112	112	115	112	1.05
	Count Month (September)	106	105	109	107	110	107	

[1] Shaded values were dropped from the average calculations based on ODOT methodology

Seasonal Trend Table Method

The Seasonal Trend Table Method uses average values from the ATR Characteristic Table for each seasonal traffic trend. Based on a review of the regional and local traffic trends, a combination of the Interstate Non-Urbanized, Commuter, and Summer seasonal traffic trend values were used to determine the seasonal adjustment factors for the study intersections. Table 4 summarizes the average values for the seasonal traffic trends during the count months of September and October and during the peak period as provided in the ODOT Seasonal Trend Table.

Table 4: Season Adjustment Factors using the Seasonal Trend Table

Trend	Peak Period Seasonal Factor	15-September Seasonal Factor	01-October Seasonal Factor	Seasonal Adjustment Factor (September)	Average (September)	Seasonal Adjustment Factor (October)	Average (October)
Interstate Non-Urbanized	0.8564	0.9458	N/A	1.1044	N/A	N/A	N/A
Commuter	0.9037	0.9359	0.9431	1.0356	1.0633	1.0436	1.0878
Summer	0.8350	0.9110	0.9452	1.0910		1.1320	

The seasonal adjustment factor shown in Table 4 for Interstate Non-Urbanized facilities (1.10) will be used to derive 30 HV volumes at the Interstate 5 (I-5) Ramp Terminals. An average of the seasonal adjustment factors for Commuter and Summer facilities will be used to derive 30 HV at all other ODOT study intersections, with 1.06 for locations with counts conducted in September and 1.09 for locations with counts conducted in October.

Historical Factors

All of the traffic counts were conducted in 2017; therefore, no historical factors are needed to adjust traffic volumes.

Forecast Traffic Volumes

Forecast traffic volumes for the Woodburn TSP Update will be developed for the study intersections based on the methodology identified in the National Cooperative Highway Research Program (NCHRP) Report 255 *Highway Traffic Data for Urbanized Area Project Planning and Design*. The methodology combines the year 2017 30 HV traffic volumes developed at the study intersections with base year and future year 2035 traffic volume forecasts from the current Woodburn travel demand model developed by ODOT's Transportation Planning and Analysis Unit (TPAU).

Intersection Operational Standards

The study intersections are a mix of ODOT and Woodburn facilities. The ODOT controlled intersections within the study area are located along I-5, OR 219, OR 214, OR 211, and OR 99E. ODOT uses volume-to-capacity (V/C) ratio to assess intersections operations. Table 6 of the *Oregon Highway Plan* (OHP, Reference 3) and Table 10-2 of the *Oregon Highway Design Manual* (HDM, Reference 4) provide maximum V/C ratios for all signalized and unsignalized intersections outside the Portland metropolitan area Urban Growth Boundary (UGB). The OHP ratios are used to evaluate existing and future no-build conditions, while the HDM ratios are used in the creation of future TSP alternatives which involve projects along state highways. Table 5 summarizes the ODOT standards for the facilities being analyzed through the TSP update process.

Table 5: ODOT Operational Standards

Roadway	Posted Speed > 35 MPH	State Classification System	National Highway System	National Network (Truck Route)	OHP Freight Route	OHP Mobility Targets	HDM Standard
OR 219 (Hillsboro-Silverton Highway 140)	No/Yes[1]	District	Yes/No[2]	No	No	0.95/0.90[1]	0.75/0.80[2]
OR 214 (Hillsboro-Silverton Highway 140)	No	District	Yes/No[3]	Yes	No	0.95	0.80
OR 211 (Woodburn-Estacada Highway 161)	No/Yes[4]	District	No	No	No	0.95	0.75/0.80
OR 99E (Pacific Highway East 081)	No/Yes[5]	Regional Highway	Yes/No[6]	Yes	No	0.90/0.85	0.75
I-5 Ramp Terminals (Pacific Highway 001)	Yes[7]	Interstate Highway	Yes	Yes	Yes	0.85	0.70

[1] The posted speed limit on OR 219 transitions from 35 MPH east of Willow Avenue to 55 MPH west of Willow Avenue. Therefore, the study intersection of Butteville Road/OR 219 has a different set of OHP mobility standards as compared to all other study intersections along OR 219.

[2] OR 219 transitions to part of the National Highway System east of Woodland Avenue. Therefore, the study intersections of Butteville Road/OR 219 and OR 219/Woodland Avenue have a different set of HDM standards as compared to all other study intersections along OR 219.

[3] OR 214 transitions from being part of the National Highway System at milepost 39.31.

[4] The posted speed limit on OR 211 transitions from 35 MPH west of Cooley Road to 45 MPH east of Cooley Road.

[5] The posted speed limit on OR 99E transitions from 45 MPH north of Industrial Road to 35 MPH south of Industrial Road, to 45 MPH south of Cleveland Road, and to 55 MPH at milepost 33.34.

[6] OR 99E is only identified as a National Highway System route between the mileposts of 31.70 and 32.87.

[7] The non-freeway speed limits adjacent to the ramp terminals are less than 45 MPH.

Marion County used the following mobility standards, as presented in the current Marion County Rural TSP 2005 Update:

- LOS D or better with a V/C ratio of 0.85 or better for signalized, all-way stop, and roundabout intersections.
- LOS E or better with a v/c ratio of 0.90 or better for other unsignalized intersections.
- LOS D or better with a v/c ratio of 0.60 or better for road segments.

The City of Woodburn uses the following mobility standards, as presented in the current Woodburn TSP adopted in 2003:

- Level of Service (LOS) “E” for signalized intersections
- V/C ratio less than 1.00 regardless of LOS
- V/C ratio of less than 0.90 on the critical movement should be maintained, provided the queues on the critical approach can be appropriately accommodated.

ANALYSIS MODEL PARAMETERS

The bullets below identify the proposed sources of data and methodologies to be used to analyze traffic conditions in Woodburn. Analyses of the study area and intersections will be conducted according to the most-recent version of the APM.

1. Intersection/Roadway Geometry (lane numbers and arrangements, cross-section elements, signal phasing, etc.) will be verified for consistency with previous work efforts, reviewed through aerial photography, and confirmed through a site visit. Available as-built data may also be used to verify existing roadway geometry. The analysis models will be built on scaled roadway line work from GIS or aerial photography. ODOT's two-way stop-controlled intersection calculator tool will be used to calculate expected queue lengths for two-way stop-controlled intersections.
2. Operational Data (such as posted speeds, intersection control, parking, right-turn on red, etc.) will be field verified. Data will be reviewed during a site visit and supplemented by available GIS data, aerials, and photos.
3. Peak Hour Factors (PHF) will be calculated for each intersection and applied to the existing conditions analyses. PHFs of 0.95 will be used for the future analysis for high-order facilities (arterials), with 0.90 applied to medium-order facilities (collectors) and 0.85 applied to local roads. If the existing PHF is greater than these default future values, the existing PHF will be applied.
4. Traffic Operations

   a. The 2000 Highway Capacity Manual (HCM 2000) methodology will be used to analyze traffic operations at the signalized intersections while the HCM 2010 methodology will be used to analyze traffic operations at the unsignalized intersections.

   b. The existing and future no-build traffic operations analyses will use Synchro 9 software using HCM 2000 reports for signalized intersections and HCM 2010 reports for unsignalized intersections. Electronic Synchro 9 files shall be provided to ODOT for review.

   c. Queuing analysis methodology will be based on Synchro 95th percentile queue lengths. Microsimulation is not proposed as part of this long-range planning effort.

SAFETY ANALYSES

Safety analyses will include reviewing historical crash data and examining roadway crossings, as described in the following sections.

Crash Analyses

The most recent five years of crash data will be reviewed at the study intersections and roadway segments identified through this planning process. The data will be analyzed for a variety of factors including type, severity, general conditions, and location to identify potential crash patterns or anomalies. Particular attention will be paid to the details of crashes involving pedestrians and bicyclists.

Study intersection crash rates and critical crash rates will be calculated based on the method outlined in Part B of the Highway Safety Manual. If a critical crash rate cannot be calculated due to limited data, the published 90th percentile rates in Table 4-1 of ODOT's APM will be used for comparisons purposes. Project-area K-factors from 12+ hour counts will be used to convert short duration counts to daily traffic approach volumes.

For all areas that exceed the critical crash rate or 90th percentile rate, we will identify and present crash patterns and potential projects, policies, or studies that could address reported crash types and patterns. Countermeasures suggested for mitigation will be identified as having crash reduction potential based on Crash Modification Factors from the Highway Safety Manual or FHWA's online Crash Modification Factor (CMF) Clearinghouse with a star rating of 3 or better. All CMFs must have consistent volumes/parameters as the study intersections.

NON-AUTOMOBILE ANALYSIS

The existing pedestrian, bicycle, and transit network will be reviewed to identify gaps and deficiencies. A gap is defined as a missing link in the network, such as a missing sidewalk on a collector or arterial roadway. A deficiency, or obstacle, is defined as a bicycle or pedestrian facility that is not up to standards or sufficient to meet users' needs. Examples of deficiencies include:

- On-street connection on a collector or arterial roadway that has a Bicycle Level of Traffic Stress rating greater than 2 (Interested but Concerned)
- Sidewalks that are too narrow to meet ADA standards or crossings without a curb ramp

The multimodal analysis will be performed in accordance with the methodologies identified in Chapter 14 of the APM and identify the needs associated with public transportation, pedestrian, and bicycle facilities and services. The pedestrian and bicycle analyses will be supplemented by a Pedestrian Level of Traffic Stress (PLTS) analysis and a Bicycle Level of Traffic Street (BLTS) analysis, consistent with the APM. Both PLTS and BLTS methods group facilities into four different stress levels for segments, intersection approaches, and intersection crossings. Facilities with an LTS 1 rating have little to no traffic stress, require less attention, and are suitable for all users. Facilities with an LTS 2 rating have little traffic stress, but require more attention and therefore, may or may not be suitable for small children. Facilities with an LTS 3 rating have moderate traffic stress and are suitable for adults. Facilities with an LTS 4 rating have high traffic stress and are only suitable for able-bodied adults with limited options.

NEXT STEPS

We would like to request concurrence from TPAU and ODOT Region 2 on the methodology and key assumptions outlined in this memorandum. This memorandum is being provided prior to beginning the existing conditions analysis and conforms to the project scope. Please contact us with any questions or comments at your earliest convenience.

REFERENCES

1. Oregon Department of Transportation. *Transportation System Plan Guidelines*, 2008.
2. Oregon Department of Transportation. *Analysis Procedures Manual*, 2012.
3. Oregon Department of Transportation. *Oregon Highway Plan*, 2012.
4. Oregon Department of Transportation. *Highway Design Manual*, 2012.

Attachment E

Existing 2017 Traffic Condition Worksheets

Intersection						
Int Delay, s/veh	4.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	335	89	158	210	41	114
Future Vol, veh/h	335	89	158	210	41	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	21	18	29	31	15
Mvmt Flow	349	93	165	219	43	119

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	442	0	943	395
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	548	-
Critical Hdwy	-	-	4.28	-	6.71	6.35
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.362	-	3.779	3.435
Pot Cap-1 Maneuver	-	-	1038	-	259	627
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	525	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1038	-	212	627
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	430	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.9	19.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	413	-	-	1038	-
HCM Lane V/C Ratio	0.391	-	-	0.159	-
HCM Control Delay (s)	19.2	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.6	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	326	2	36	336	134	4	7	51	462	5	41
Future Volume (vph)	40	326	2	36	336	134	4	7	51	462	5	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	0.85	1.00	0.87		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1614	2866	976	1250	2866	1430	1662	1163		1490	1455	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (perm)	1614	2866	976	1250	2866	1430	1662	1163		1490	1455	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	354	2	39	365	146	4	8	55	502	5	45
RTOR Reduction (vph)	0	0	1	0	0	60	0	50	0	0	4	0
Lane Group Flow (vph)	43	354	1	39	365	86	4	13	0	276	272	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	16%	50%	33%	16%	4%	0%	50%	28%	6%	20%	11%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	5	2	8	1	6	4	8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	4.1	17.4	22.7	4.5	17.8	37.4	5.3	5.3		19.6	19.6	
Effective Green, g (s)	4.1	17.4	22.7	4.5	17.8	37.4	5.3	5.3		19.6	19.6	
Actuated g/C Ratio	0.06	0.27	0.36	0.07	0.28	0.59	0.08	0.08		0.31	0.31	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.2	2.5	2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	104	787	350	88	805	844	139	97		461	450	
v/s Ratio Prot	0.03	0.12	0.00	c0.03	c0.13	0.03	0.00	c0.01		0.19	c0.19	
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.41	0.45	0.00	0.44	0.45	0.10	0.03	0.13		0.60	0.60	
Uniform Delay, d1	28.4	19.0	13.0	28.2	18.7	5.6	26.6	26.9		18.5	18.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.6	0.0	2.6	0.6	0.0	0.1	0.4		1.8	1.9	
Delay (s)	30.4	19.6	13.0	30.8	19.4	5.7	26.7	27.3		20.3	20.5	
Level of Service	C	B	B	C	B	A	C	C		C	C	
Approach Delay (s)		20.7			16.5			27.3			20.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	46.7%	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												
Traffic Volume (vph)	0	609	336	0	641	474	0	0	0	483	0	250
Future Volume (vph)	0	609	336	0	641	474	0	0	0	483	0	250
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	621	343	0	654	484	0	0	0	493	0	255
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	57
Lane Group Flow (vph)	0	621	343	0	654	484	0	0	0	493	0	198
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		67.7	100.0		53.7	100.0				23.3		37.8
Effective Green, g (s)		67.7	100.0		53.7	100.0				23.3		37.8
Actuated g/C Ratio		0.68	1.00		0.54	1.00				0.23		0.38
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1940	1255		1526	1173				631		480
v/s Ratio Prot		0.22			0.23					c0.18		0.16
v/s Ratio Perm			0.27			c0.41						
v/c Ratio		0.32	0.27		0.43	0.41				0.78		0.41
Uniform Delay, d1		6.7	0.0		13.9	0.0				36.0		22.9
Progression Factor		1.00	1.00		0.84	1.00				1.00		1.00
Incremental Delay, d2		0.4	0.5		0.8	1.0				6.0		0.4
Delay (s)		7.1	0.5		12.4	1.0				42.0		23.3
Level of Service		A	A		B	A				D		C
Approach Delay (s)		4.8			7.6			0.0			35.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.7%	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												
Traffic Volume (vph)	0	924	169	0	858	273	242	0	479	0	0	0
Future Volume (vph)	0	924	169	0	858	273	242	0	479	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1104	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1104	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	962	176	0	894	284	252	0	499	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	83	83	0	0	0
Lane Group Flow (vph)	0	963	176	0	894	284	227	182	176	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		68.2	100.0		68.2	100.0	22.8	22.8	22.8			
Effective Green, g (s)		68.2	100.0		68.2	100.0	22.8	22.8	22.8			
Actuated g/C Ratio		0.68	1.00		0.68	1.00	0.23	0.23	0.23			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1954	1234		1858	1212	307	251	258			
v/s Ratio Prot		c0.34			0.33							
v/s Ratio Perm			0.14			0.23	c0.17	0.16	0.16			
v/c Ratio		0.49	0.14		0.48	0.23	0.74	0.72	0.68			
Uniform Delay, d1		7.6	0.0		7.5	0.0	35.8	35.7	35.3			
Progression Factor		1.57	1.00		0.77	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.2		0.7	0.4	8.5	9.3	6.6			
Delay (s)		12.8	0.2		6.5	0.4	44.3	45.0	41.9			
Level of Service		B	A		A	A	D	D	D			
Approach Delay (s)		10.8			5.0			43.7			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
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												
Traffic Volume (vph)	78	851	117	192	675	14	311	28	212	21	35	69
Future Volume (vph)	78	851	117	192	675	14	311	28	212	21	35	69
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1362	2842	1316	1409	2829		1446	1620	1262	1511	1651	1096
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	394	2842	1316	199	2829		1446	1620	1262	1511	1651	1096
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)	80	877	121	198	696	14	321	29	219	22	36	71
RTOR Reduction (vph)	0	0	82	0	1	0	0	0	155	0	0	67
Lane Group Flow (vph)	80	877	39	198	709	0	321	29	64	22	36	4
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	47.0	32.2	32.2	47.0	40.0		29.3	29.3	29.3	6.2	6.2	6.2
Effective Green, g (s)	47.0	32.2	32.2	47.0	40.0		29.3	29.3	29.3	6.2	6.2	6.2
Actuated g/C Ratio	0.47	0.32	0.32	0.47	0.40		0.29	0.29	0.29	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	252	915	423	272	1131		423	474	369	93	102	67
v/s Ratio Prot	0.02	c0.31		c0.11	0.25		c0.22	0.02		0.01	c0.02	
v/s Ratio Perm	0.13		0.03	0.23					0.05			0.00
v/c Ratio	0.32	0.96	0.09	0.73	0.63		0.76	0.06	0.17	0.24	0.35	0.07
Uniform Delay, d1	15.7	33.2	23.7	33.0	24.0		32.1	25.4	26.3	44.6	45.0	44.2
Progression Factor	1.02	0.91	1.85	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	19.4	0.4	7.6	2.3		7.3	0.0	0.2	1.0	1.5	0.3
Delay (s)	16.5	49.7	44.1	40.6	25.2		39.4	25.5	26.5	45.6	46.5	44.5
Level of Service	B	D	D	D	C		D	C	C	D	D	D
Approach Delay (s)		46.6			28.5			33.7			45.2	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	73.3%	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												
Traffic Volume (vph)	117	956	25	16	827	56	12	20	5	65	16	86
Future Volume (vph)	117	956	25	16	827	56	12	20	5	65	16	86
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1553	2746		1471	2718		1525	1407		1385	1429	
Flt Permitted	0.24	1.00		0.20	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	392	2746		313	2718		1525	1407		1385	1429	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	122	996	26	17	861	58	12	21	5	68	17	90
RTOR Reduction (vph)	0	1	0	0	4	0	0	5	0	0	78	0
Lane Group Flow (vph)	122	1021	0	17	915	0	13	21	0	68	29	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	67.6	65.1		54.2	54.2		2.3	5.6		10.3	13.6	
Effective Green, g (s)	67.6	65.1		54.2	54.2		2.3	5.6		10.3	13.6	
Actuated g/C Ratio	0.68	0.65		0.54	0.54		0.02	0.06		0.10	0.14	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	420	1787		198	1473		35	78		142	194	
v/s Ratio Prot	0.04	c0.37		0.00	c0.34		0.01	c0.02		c0.05	0.02	
v/s Ratio Perm	0.16			0.04								
v/c Ratio	0.29	0.57		0.09	0.62		0.37	0.27		0.48	0.15	
Uniform Delay, d1	13.2	9.7		11.7	15.8		48.1	45.2		42.3	38.1	
Progression Factor	0.47	0.63		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.8		0.1	2.0		4.8	1.4		1.8	0.3	
Delay (s)	6.4	6.9		11.8	17.8		52.9	46.6		44.2	38.4	
Level of Service	A	A		B	B		D	D		D	D	
Approach Delay (s)		6.9			17.7			48.7			40.6	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	971	56	33	906	0	35
Future Vol, veh/h	971	56	33	906	0	35
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	19	17	10	23	0	24
Mvmt Flow	1033	60	35	964	0	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1095	0	-	548
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	7.38
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.3	-	-	3.54
Pot Cap-1 Maneuver	-	-	588	-	0	428
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	588	-	-	427
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	427	-	-	588	-
HCM Lane V/C Ratio	0.087	-	-	0.06	-
HCM Control Delay (s)	14.2	-	-	11.5	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	575	307	107	622	78	236	133	78	114	205	114
Future Volume (vph)	98	575	307	107	622	78	236	133	78	114	205	114
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.91	1.00	1.00	0.98	1.00	1.00	0.71
Flpb, ped/bikes	1.00	1.00	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	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	1458	1219	1484	1446	1115	1385	1483	1343	1458	1446	881
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	1458	1219	1484	1446	1115	1385	1483	1343	1458	1446	881
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)	103	605	323	113	655	82	248	140	82	120	216	120
RTOR Reduction (vph)	0	0	95	0	0	47	0	0	62	0	0	99
Lane Group Flow (vph)	103	605	228	113	655	35	248	140	20	120	216	21
Confl. Peds. (#/hr)	26		26	26		26	118		2	2		118
Heavy Vehicles (%)	15%	20%	15%	12%	21%	22%	20%	18%	8%	14%	21%	20%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.8	55.3	80.4	15.5	56.0	56.0	25.1	33.5	33.5	16.3	24.7	24.7
Effective Green, g (s)	14.8	55.3	80.4	15.5	56.0	56.0	25.1	33.5	33.5	16.3	24.7	24.7
Actuated g/C Ratio	0.11	0.40	0.58	0.11	0.40	0.40	0.18	0.24	0.24	0.12	0.18	0.18
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	153	577	702	164	580	447	249	355	322	170	255	155
v/s Ratio Prot	0.07	0.41	0.06	c0.08	c0.45		c0.18	0.09		0.08	c0.15	
v/s Ratio Perm			0.13			0.03			0.01			0.02
v/c Ratio	0.67	1.05	0.32	0.69	1.13	0.08	1.00	0.39	0.06	0.71	0.85	0.14
Uniform Delay, d1	60.1	42.1	15.4	59.7	41.8	25.9	57.2	44.5	40.9	59.3	55.6	48.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	50.8	0.2	10.5	78.3	0.1	55.6	0.5	0.1	11.7	21.7	0.3
Delay (s)	70.2	93.0	15.6	70.2	120.1	26.0	112.8	45.1	41.0	71.0	77.4	48.8
Level of Service	E	F	B	E	F	C	F	D	D	E	E	D
Approach Delay (s)		66.5			104.4			80.1			68.2	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	80.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	96.2%	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												
Traffic Volume (vph)	35	641	39	48	718	43	16	11	29	37	28	38
Future Volume (vph)	35	641	39	48	718	43	16	11	29	37	28	38
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
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	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1484	1437		1338	1428		1216	1153		1281	1359	
Flt Permitted	0.29	1.00		0.33	1.00		0.71	1.00		0.73	1.00	
Satd. Flow (perm)	447	1437		464	1428		912	1153		985	1359	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	36	654	40	49	733	44	16	11	30	38	29	39
RTOR Reduction (vph)	0	1	0	0	1	0	0	27	0	0	36	0
Lane Group Flow (vph)	36	693	0	49	776	0	16	14	0	38	32	0
Confl. Peds. (#/hr)	9		33	33		9	18		4	4		18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	12%	20%	27%	24%	22%	10%	33%	50%	26%	29%	4%	22%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	67.5	64.0		67.5	64.2		7.6	7.6		7.6	7.6	
Effective Green, g (s)	67.5	64.0		67.5	64.2		7.6	7.6		7.6	7.6	
Actuated g/C Ratio	0.75	0.71		0.75	0.71		0.08	0.08		0.08	0.08	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.3		2.5	5.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	372	1020		381	1017		76	97		83	114	
v/s Ratio Prot	0.00	0.48		c0.00	c0.54			0.01			0.02	
v/s Ratio Perm	0.07			0.09			0.02			c0.04		
v/c Ratio	0.10	0.68		0.13	0.76		0.21	0.14		0.46	0.28	
Uniform Delay, d1	4.2	7.3		3.7	8.2		38.5	38.2		39.3	38.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.5		0.1	4.2		1.0	0.5		2.9	1.0	
Delay (s)	4.3	9.8		3.8	12.3		39.5	38.7		42.2	39.7	
Level of Service	A	A		A	B		D	D		D	D	
Approach Delay (s)		9.5			11.8			38.9			40.6	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	17

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	96	703	788	150	65	53
Future Vol, veh/h	96	703	788	150	65	53
Conflicting Peds, #/hr	8	0	0	8	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	130	-	-	60	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	25	21	18	18	30	24
Mvmt Flow	102	748	838	160	69	56

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	846	0	-	0	1798	846
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	952	-
Critical Hdwy	4.35	-	-	-	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	5.7	-
Critical Hdwy Stg 2	-	-	-	-	5.7	-
Follow-up Hdwy	2.425	-	-	-	3.77	3.516
Pot Cap-1 Maneuver	701	-	-	-	75	331
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	334	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	701	-	-	-	~ 63	328
Mov Cap-2 Maneuver	-	-	-	-	~ 63	-
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	283	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	257.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	701	-	-	-	99
HCM Lane V/C Ratio	0.146	-	-	-	1.268
HCM Control Delay (s)	11	-	-	-	257.8
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	8.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	639	54	106	822	17	15	3	91	23	4	63
Future Vol, veh/h	12	639	54	106	822	17	15	3	91	23	4	63
Conflicting Peds, #/hr	4	0	14	14	0	4	22	0	0	0	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	185	-	-	-	-	-	-	-	55
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	23	16	9	23	38	0	0	10	9	25	7
Mvmt Flow	13	702	59	116	903	19	16	3	100	25	4	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	926	0	0	776	0	0	1942	1931	746	1960	1952	939
Stage 1	-	-	-	-	-	-	772	772	-	1150	1150	-
Stage 2	-	-	-	-	-	-	1170	1159	-	810	802	-
Critical Hdwy	4.19	-	-	4.19	-	-	7.1	6.5	6.3	7.19	6.75	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.19	5.75	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.19	5.75	-
Follow-up Hdwy	2.281	-	-	2.281	-	-	3.5	4	3.39	3.581	4.225	3.363
Pot Cap-1 Maneuver	710	-	-	810	-	-	50	67	401	46	56	313
Stage 1	-	-	-	-	-	-	395	412	-	234	247	-
Stage 2	-	-	-	-	-	-	237	272	-	364	365	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	695	-	-	810	-	-	30	55	396	29	46	305
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	55	-	29	46	-
Stage 1	-	-	-	-	-	-	382	399	-	229	211	-
Stage 2	-	-	-	-	-	-	150	232	-	265	353	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	104.7	114.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	139	695	-	-	810	-	-	31	305
HCM Lane V/C Ratio	0.862	0.019	-	-	0.144	-	-	0.957	0.227
HCM Control Delay (s)	104.7	10.3	-	-	10.2	-	-	$ 335.3	20.2
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	5.6	0.1	-	-	0.5	-	-	3.3	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	324	251	203	240	60	230	368	92	160	790	127
Future Volume (vph)	159	324	251	203	240	60	230	368	92	160	790	127
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	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	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1326		2906	2639	1054	1374	2927	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1326		2906	2639	1054	1374	2927	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	166	338	261	211	250	62	240	383	96	167	823	132
RTOR Reduction (vph)	0	0	200	0	7	0	0	0	65	0	9	0
Lane Group Flow (vph)	166	338	61	211	306	0	240	383	31	167	946	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	23.3	30.5	30.5	23.3	30.5		14.4	40.7	41.8	15.5	41.8	
Effective Green, g (s)	23.3	30.5	30.5	23.3	30.5		14.4	40.7	41.8	15.5	41.8	
Actuated g/C Ratio	0.18	0.23	0.23	0.18	0.23		0.11	0.31	0.32	0.12	0.32	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	254	347	285	240	311		321	826	338	163	941	
v/s Ratio Prot	0.12	0.23		c0.16	c0.23		c0.08	0.15		0.12	c0.32	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.65	0.97	0.21	0.88	0.98		0.75	0.46	0.09	1.02	1.00	
Uniform Delay, d1	49.6	49.4	40.1	52.0	49.5		56.0	35.9	30.8	57.2	44.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.17	0.71	0.32	1.00	1.00	
Incremental Delay, d2	5.9	41.1	0.4	28.4	46.5		7.8	1.6	0.5	77.1	30.5	
Delay (s)	55.5	90.5	40.5	80.4	96.0		73.3	27.2	10.2	134.3	74.6	
Level of Service	E	F	D	F	F		E	C	B	F	E	
Approach Delay (s)		65.8			89.7			40.3			83.5	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	70.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	44	121	29	61	7	51	119	15	14	219	38
Future Vol, veh/h	18	44	121	29	61	7	51	119	15	14	219	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	39	23	6	31	20	86	22	13	27	36	13	16
Mvmt Flow	19	47	129	31	65	7	54	127	16	15	233	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	10.6	11.3	13.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	10%	30%	5%
Vol Thru, %	64%	24%	63%	81%
Vol Right, %	8%	66%	7%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	185	183	97	271
LT Vol	51	18	29	14
Through Vol	119	44	61	219
RT Vol	15	121	7	38
Lane Flow Rate	197	195	103	288
Geometry Grp	1	1	1	1
Degree of Util (X)	0.31	0.313	0.178	0.455
Departure Headway (Hd)	5.674	5.787	6.218	5.678
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	621	577	634
Service Time	3.71	3.824	4.262	3.71
HCM Lane V/C Ratio	0.311	0.314	0.179	0.454
HCM Control Delay	11.3	11.5	10.6	13.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.3	1.3	0.6	2.4

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	65	128	113	96	144
Future Vol, veh/h	129	65	128	113	96	144
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	12	28	15	19	22	24
Mvmt Flow	154	77	152	135	114	171
Number of Lanes	1	0	1	0	0	1
Approach	WB		NB		SB	
Opposing Approach			SB		NB	
Opposing Lanes	0		1		1	
Conflicting Approach Left	NB				WB	
Conflicting Lanes Left	1		0		1	
Conflicting Approach Right	SB		WB			
Conflicting Lanes Right	1		1		0	
HCM Control Delay	11.4		11.1		12.4	
HCM LOS	B		B		B	

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	66%	40%
Vol Thru, %	53%	0%	60%
Vol Right, %	47%	34%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	241	194	240
LT Vol	0	129	96
Through Vol	128	0	144
RT Vol	113	65	0
Lane Flow Rate	287	231	286
Geometry Grp	1	1	1
Degree of Util (X)	0.39	0.348	0.424
Departure Headway (Hd)	4.889	5.418	5.338
Convergence, Y/N	Yes	Yes	Yes
Cap	729	656	669
Service Time	2.976	3.514	3.428
HCM Lane V/C Ratio	0.394	0.352	0.428
HCM Control Delay	11.1	11.4	12.4
HCM Lane LOS	B	B	B
HCM 95th-tile Q	1.9	1.6	2.1

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	12	105	13	31	115	51	10	147	36	24	134	23
Future Vol, veh/h	12	105	13	31	115	51	10	147	36	24	134	23
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	25	25	31	16	25	18	30	13	28	54	20	9
Mvmt Flow	16	142	18	42	155	69	14	199	49	32	181	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.5	14	14.4	15.3
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	9%	16%	13%
Vol Thru, %	76%	81%	58%	74%
Vol Right, %	19%	10%	26%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	130	197	181
LT Vol	10	12	31	24
Through Vol	147	105	115	134
RT Vol	36	13	51	23
Lane Flow Rate	261	176	266	245
Geometry Grp	1	1	1	1
Degree of Util (X)	0.45	0.315	0.447	0.454
Departure Headway (Hd)	6.217	6.461	6.043	6.68
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	552	591	536
Service Time	4.303	4.558	4.13	4.766
HCM Lane V/C Ratio	0.455	0.319	0.45	0.457
HCM Control Delay	14.4	12.5	14	15.3
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	2.3	1.3	2.3	2.3

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	174	5	29	151	49	12	120	27	37	108	25
Future Vol, veh/h	21	174	5	29	151	49	12	120	27	37	108	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	20	40	38	23	14	25	15	22	19	18	24
Mvmt Flow	23	189	5	32	164	53	13	130	29	40	117	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	13	11.4	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	10%	13%	22%
Vol Thru, %	75%	87%	66%	64%
Vol Right, %	17%	3%	21%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	200	229	170
LT Vol	12	21	29	37
Through Vol	120	174	151	108
RT Vol	27	5	49	25
Lane Flow Rate	173	217	249	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.286	0.338	0.408	0.301
Departure Headway (Hd)	5.95	5.602	5.895	5.87
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	603	641	610	612
Service Time	3.999	3.648	3.938	3.919
HCM Lane V/C Ratio	0.287	0.339	0.408	0.302
HCM Control Delay	11.4	11.5	13	11.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.2	1.5	2	1.3

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	138	15	45	83	42	7	78	16	47	84	17
Future Vol, veh/h	14	138	15	45	83	42	7	78	16	47	84	17
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	14	23	13	11	28	14	43	18	50	9	21	12
Mvmt Flow	18	179	19	58	108	55	9	101	21	61	109	22
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	11.1	10.9	10.9	11.1
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	0%	8%	26%	32%
Vol Thru, %	92%	0%	83%	49%	57%
Vol Right, %	0%	100%	9%	25%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	16	167	170	148
LT Vol	7	0	14	45	47
Through Vol	78	0	138	83	84
RT Vol	0	16	15	42	17
Lane Flow Rate	110	21	217	221	192
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.208	0.032	0.327	0.326	0.3
Departure Headway (Hd)	6.772	5.589	5.429	5.32	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	531	640	661	676	640
Service Time	4.508	3.324	3.463	3.353	3.649
HCM Lane V/C Ratio	0.207	0.033	0.328	0.327	0.3
HCM Control Delay	11.3	8.5	11.1	10.9	11.1
HCM Lane LOS	B	A	B	B	B
HCM 95th-tile Q	0.8	0.1	1.4	1.4	1.3

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	81	56	52	70	8	50	101	33	4	119	85
Future Vol, veh/h	67	81	56	52	70	8	50	101	33	4	119	85
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	49	27	21	25	37	12	14	9	21	0	21	28
Mvmt Flow	83	100	69	64	86	10	62	125	41	5	147	105
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.9	11.3	12.2	10.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	0%	100%	0%	100%	0%	3%	0%
Vol Thru, %	67%	0%	0%	59%	0%	90%	97%	0%
Vol Right, %	0%	100%	0%	41%	0%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	33	67	137	52	78	123	85
LT Vol	50	0	67	0	52	0	4	0
Through Vol	101	0	0	81	0	70	119	0
RT Vol	0	33	0	56	0	8	0	85
Lane Flow Rate	186	41	83	169	64	96	152	105
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.344	0.064	0.174	0.301	0.131	0.186	0.263	0.171
Departure Headway (Hd)	6.647	5.682	7.582	6.405	7.327	6.953	6.236	5.872
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	629	473	560	489	515	576	610
Service Time	4.398	3.433	5.331	4.154	5.08	4.706	3.987	3.622
HCM Lane V/C Ratio	0.344	0.065	0.175	0.302	0.131	0.186	0.264	0.172
HCM Control Delay	12.9	8.8	11.9	11.9	11.2	11.3	11.2	9.8
HCM Lane LOS	B	A	B	B	B	B	B	A
HCM 95th-tile Q	1.5	0.2	0.6	1.3	0.4	0.7	1	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	47	57	112	35	45	54	870	70	60	1160	86
Future Volume (vph)	77	47	57	112	35	45	54	870	70	60	1160	86
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.98	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1493	1227		1479	1206	1363	2671		1458	2736	
Flt Permitted		0.57	1.00		0.59	1.00	0.14	1.00		0.24	1.00	
Satd. Flow (perm)		873	1227		902	1206	204	2671		369	2736	
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)	82	50	61	119	37	48	57	926	74	64	1234	91
RTOR Reduction (vph)	0	0	49	0	0	39	0	4	0	0	4	0
Lane Group Flow (vph)	0	132	12	0	156	9	57	996	0	64	1321	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4	2			6		
Actuated Green, G (s)		25.1	25.1		25.1	25.1	91.4	85.7		91.4	82.1	
Effective Green, g (s)		25.1	25.1		25.1	25.1	91.4	85.7		91.4	82.1	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.70	0.66		0.70	0.63	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		168	236		174	232	226	1760		307	1727	
v/s Ratio Prot							0.02	c0.37		0.01	c0.48	
v/s Ratio Perm		0.15	0.01		c0.17	0.01	0.16			0.14		
v/c Ratio		0.79	0.05		0.90	0.04	0.25	0.57		0.21	0.77	
Uniform Delay, d1		49.9	42.7		51.2	42.7	19.7	12.0		6.9	17.1	
Progression Factor		1.00	1.00		1.00	1.00	0.42	0.85		0.72	0.99	
Incremental Delay, d2		20.4	0.1		39.8	0.1	0.4	1.2		0.1	1.8	
Delay (s)		70.3	42.8		90.9	42.7	8.6	11.4		5.1	18.8	
Level of Service		E	D		F	D	A	B		A	B	
Approach Delay (s)		61.6			79.6			11.2			18.2	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	70.0%	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												
Traffic Volume (vph)	79	8	59	21	7	22	48	893	11	15	1277	86
Future Volume (vph)	79	8	59	21	7	22	48	893	11	15	1277	86
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1291			1434	1124	1446	2629		1288	2724	
Flt Permitted		0.82			0.76	1.00	0.13	1.00		0.26	1.00	
Satd. Flow (perm)		1082			1128	1124	203	2629		351	2724	
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)	84	9	63	22	7	23	51	950	12	16	1359	91
RTOR Reduction (vph)	0	20	0	0	0	19	0	0	0	0	2	0
Lane Group Flow (vph)	0	136	0	0	29	4	51	962	0	16	1448	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		20.4			20.4	20.4	96.1	89.1		96.1	90.9	
Effective Green, g (s)		20.4			20.4	20.4	96.1	89.1		96.1	90.9	
Actuated g/C Ratio		0.16			0.16	0.16	0.74	0.69		0.74	0.70	
Clearance Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		169			177	176	199	1801		309	1904	
v/s Ratio Prot							0.01	c0.37		0.00	c0.53	
v/s Ratio Perm		c0.13			0.03	0.00	0.18			0.04		
v/c Ratio		0.80			0.16	0.02	0.26	0.53		0.05	0.76	
Uniform Delay, d1		52.9			47.4	46.3	7.4	10.1		8.3	12.6	
Progression Factor		1.00			1.00	1.00	1.07	0.75		1.25	0.55	
Incremental Delay, d2		22.8			0.3	0.0	0.4	1.0		0.0	2.1	
Delay (s)		75.7			47.7	46.4	8.3	8.6		10.4	8.9	
Level of Service		E			D	D	A	A		B	A	
Approach Delay (s)		75.7			47.1			8.6			8.9	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.6%	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												
Traffic Volume (vph)	112	114	60	58	151	243	48	590	27	249	920	120
Future Volume (vph)	112	114	60	58	151	243	48	590	27	249	920	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			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	
Frt	1.00	0.95			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1321			1463	1293	1179	2700		1373	2759	
Flt Permitted	0.42	1.00			0.74	1.00	0.22	1.00		0.37	1.00	
Satd. Flow (perm)	543	1321			1094	1293	271	2700		531	2759	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	113	115	61	59	153	245	48	596	27	252	929	121
RTOR Reduction (vph)	0	16	0	0	0	89	0	2	0	0	6	0
Lane Group Flow (vph)	113	160	0	0	212	156	48	621	0	252	1044	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	28.0	28.0			28.0	28.0	88.5	72.1		88.5	82.7	
Effective Green, g (s)	28.0	28.0			28.0	28.0	88.5	72.1		88.5	82.7	
Actuated g/C Ratio	0.22	0.22			0.22	0.22	0.68	0.55		0.68	0.64	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	116	284			235	278	224	1497		467	1755	
v/s Ratio Prot		0.12					0.01	0.23		0.07	c0.38	
v/s Ratio Perm	c0.21				0.19	0.12	0.14			c0.30		
v/c Ratio	0.97	0.56			0.90	0.56	0.21	0.41		0.54	0.59	
Uniform Delay, d1	50.6	45.6			49.7	45.5	8.1	16.7		16.5	13.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.41	1.31	
Incremental Delay, d2	74.9	2.1			33.6	2.1	0.4	0.8		0.6	1.0	
Delay (s)	125.5	47.6			83.3	47.6	8.5	17.6		23.9	19.1	
Level of Service	F	D			F	D	A	B		C	B	
Approach Delay (s)		78.1			64.2			16.9			20.0	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	12.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	60	57	663	792	215
Future Vol, veh/h	84	60	57	663	792	215
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	35	31	25	29	16
Mvmt Flow	91	65	62	721	861	234

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1463	549	1096	0	-	0
Stage 1	979	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	7.22	7.6	4.72	-	-	-
Critical Hdwy Stg 1	6.22	-	-	-	-	-
Critical Hdwy Stg 2	6.22	-	-	-	-	-
Follow-up Hdwy	3.71	3.65	2.51	-	-	-
Pot Cap-1 Maneuver	100	404	488	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 79	403	488	-	-	-
Mov Cap-2 Maneuver	~ 79	-	-	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	420	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	148.6	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	488	-	79	403	-	-
HCM Lane V/C Ratio	0.127	-	1.156	0.162	-	-
HCM Control Delay (s)	13.4	1.2	243.5	15.7	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	6.7	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	354	2	39	365	146	4	63	276	276
v/c Ratio	0.21	0.44	0.01	0.23	0.45	0.14	0.02	0.32	0.59	0.59
Control Delay	35.5	24.7	0.0	36.3	24.2	1.5	34.8	17.8	27.0	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	24.7	0.0	36.3	24.2	1.5	34.8	17.8	27.0	26.9
Queue Length 50th (ft)	16	63	0	14	65	0	2	3	98	96
Queue Length 95th (ft)	57	141	0	54	143	19	12	43	228	227
Internal Link Dist (ft)		439			969			574		512
Turn Bay Length (ft)	225		140	225		95	110		340	
Base Capacity (vph)	629	2127	678	487	2127	1340	933	677	1106	1082
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.17	0.00	0.08	0.17	0.11	0.00	0.09	0.25	0.26

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	621	343	654	484	493	255
v/c Ratio	0.32	0.27	0.43	0.41	0.78	0.48
Control Delay	7.8	0.5	13.3	1.2	44.9	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	0.5	13.3	1.2	44.9	17.4
Queue Length 50th (ft)	76	0	94	0	152	76
Queue Length 95th (ft)	127	0	150	6	193	134
Internal Link Dist (ft)	969		680			
Turn Bay Length (ft)		270		525	650	425
Base Capacity (vph)	1941	1255	1527	1173	962	601
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.27	0.43	0.41	0.51	0.42

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	963	176	894	284	227	265	259
v/c Ratio	0.49	0.14	0.48	0.23	0.74	0.79	0.76
Control Delay	15.0	0.2	7.6	0.4	49.3	37.5	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	0.2	7.6	0.4	49.3	37.5	34.1
Queue Length 50th (ft)	243	0	85	0	144	107	96
Queue Length 95th (ft)	353	0	278	m0	198	186	170
Internal Link Dist (ft)	680		816			933	
Turn Bay Length (ft)		565		405	600		275
Base Capacity (vph)	1955	1234	1859	1212	479	461	471
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.14	0.48	0.23	0.47	0.57	0.55

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	877	121	198	710	321	29	219	22	36	71
v/c Ratio	0.29	0.91	0.23	0.75	0.60	0.76	0.06	0.42	0.20	0.30	0.31
Control Delay	15.7	43.1	9.8	48.5	25.5	46.4	27.4	6.8	46.9	49.5	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	43.1	9.8	48.5	25.5	46.4	27.4	6.8	46.9	49.5	3.6
Queue Length 50th (ft)	15	212	3	91	235	187	13	0	13	22	0
Queue Length 95th (ft)	m67	#417	59	#194	318	#345	37	58	37	53	0
Internal Link Dist (ft)		816			528		708			401	
Turn Bay Length (ft)	175		310	375		325		330	70		70
Base Capacity (vph)	341	963	526	265	1180	423	474	524	234	255	303
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.91	0.23	0.75	0.60	0.76	0.06	0.42	0.09	0.14	0.23

Intersection Summary

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

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	1022	17	919	13	26	68	107
v/c Ratio	0.30	0.53	0.07	0.56	0.13	0.27	0.50	0.39
Control Delay	4.9	6.9	11.9	15.6	45.0	44.1	54.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	6.9	11.9	15.6	45.0	44.1	54.8	15.7
Queue Length 50th (ft)	9	52	4	189	8	13	42	9
Queue Length 95th (ft)	m15	m112	17	298	26	39	82	60
Internal Link Dist (ft)		528		586		584		244
Turn Bay Length (ft)	305		185		150		55	
Base Capacity (vph)	407	1941	316	1629	244	229	221	334
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.53	0.05	0.56	0.05	0.11	0.31	0.32

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	605	323	113	655	82	248	140	82	120	216	120
v/c Ratio	0.67	1.05	0.41	0.69	1.13	0.17	1.00	0.39	0.21	0.71	0.85	0.48
Control Delay	82.5	92.3	6.5	81.8	118.0	7.8	113.5	50.9	10.8	82.0	84.4	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.5	92.3	6.5	81.8	118.0	7.8	113.5	50.9	10.8	82.0	84.4	15.2
Queue Length 50th (ft)	92	~610	37	101	~703	2	~234	108	0	108	192	0
Queue Length 95th (ft)	161	#942	108	173	#1045	40	#459	198	48	181	#326	63
Internal Link Dist (ft)		1985			1344			5001			6623	
Turn Bay Length (ft)	250		190	225		150	285		110	175		775
Base Capacity (vph)	260	577	797	267	579	490	249	355	384	262	312	276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.05	0.41	0.42	1.13	0.17	1.00	0.39	0.21	0.46	0.69	0.43

Intersection Summary

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

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	694	49	777	16	41	38	68
v/c Ratio	0.09	0.65	0.12	0.72	0.17	0.27	0.36	0.38
Control Delay	3.0	12.4	3.2	15.2	40.9	22.8	47.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	12.4	3.2	15.2	40.9	22.8	47.5	26.2
Queue Length 50th (ft)	3	214	4	268	8	6	20	15
Queue Length 95th (ft)	11	427	14	#621	29	36	53	56
Internal Link Dist (ft)		1344		2218		301		478
Turn Bay Length (ft)	100		150		150		60	
Base Capacity (vph)	601	1077	577	1073	313	418	340	493
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.64	0.08	0.72	0.05	0.10	0.11	0.14

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	166	338	261	211	313	240	383	96	167	955
v/c Ratio	0.65	0.97	0.54	0.88	0.99	0.75	0.46	0.24	1.02	1.01
Control Delay	61.8	91.7	9.2	85.2	95.7	78.1	28.0	3.2	132.8	74.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	91.7	9.2	85.2	95.7	78.1	28.0	3.2	132.8	74.2
Queue Length 50th (ft)	129	284	0	171	258	84	52	16	~149	~472
Queue Length 95th (ft)	208	#478	77	#300	#452	137	122	m19	#296	#609
Internal Link Dist (ft)		1924			547		853			1161
Turn Bay Length (ft)	260			215		250		190	220	
Base Capacity (vph)	278	347	485	263	317	346	825	404	163	949
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.97	0.54	0.80	0.99	0.69	0.46	0.24	1.02	1.01

Intersection Summary

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

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	61	156	48	57	1000	64	1325
v/c Ratio	0.79	0.20	0.90	0.16	0.24	0.56	0.20	0.76
Control Delay	79.5	4.8	96.5	2.2	6.1	12.4	5.0	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.5	4.8	96.5	2.2	6.1	12.4	5.0	20.8
Queue Length 50th (ft)	105	0	127	0	4	361	8	597
Queue Length 95th (ft)	#181	19	#231	6	m9	498	m10	m632
Internal Link Dist (ft)	3911		440			1076		1586
Turn Bay Length (ft)		50		80	85		85	
Base Capacity (vph)	204	355	211	350	247	1784	367	1753
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.17	0.74	0.14	0.23	0.56	0.17	0.76

Intersection Summary

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

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	156	29	23	51	962	16	1450
v/c Ratio	0.83	0.16	0.09	0.24	0.52	0.05	0.75
Control Delay	75.4	46.3	0.7	7.5	10.3	6.7	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.4	46.3	0.7	7.5	10.3	6.7	10.1
Queue Length 50th (ft)	109	21	0	10	134	2	102
Queue Length 95th (ft)	181	48	0	m23	434	m6	306
Internal Link Dist (ft)	4110	594			2344		1076
Turn Bay Length (ft)			50	85		100	
Base Capacity (vph)	255	247	315	306	1857	393	1927
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.12	0.07	0.17	0.52	0.04	0.75

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	176	212	245	48	623	252	1050
v/c Ratio	0.97	0.59	0.90	0.67	0.21	0.41	0.55	0.59
Control Delay	125.0	47.3	86.7	32.8	9.1	18.2	22.9	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.0	47.3	86.7	32.8	9.1	18.2	22.9	21.0
Queue Length 50th (ft)	93	117	172	100	12	155	59	455
Queue Length 95th (ft)	#198	187	#278	187	28	218	m151	548
Internal Link Dist (ft)		3376	444			451		2344
Turn Bay Length (ft)	30			40	60		60	
Base Capacity (vph)	144	365	290	426	264	1517	461	1781
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.48	0.73	0.58	0.18	0.41	0.55	0.59

Intersection Summary

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

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

Attachment F

ODOT Crash Data

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

Boones Ferry Rd & Crosby Rd
January 1, 2011 through December 31, 2015

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

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Boones Ferry Rd / Settlemier Ave & OR 214

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	1	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	1	1	0	1	0	1	0	0
YEAR: 2013														
ANGLE	0	1	0	1	0	4	0	0	1	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2013 TOTAL	0	2	1	3	0	5	0	2	1	1	2	3	0	0
YEAR: 2012														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	1	0	1
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	1
YEAR: 2011														
TURNING MOVEMENTS	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2011 TOTAL	0	1	0	1	0	2	0	0	1	0	1	1	0	0
FINAL TOTAL	0	4	3	7	0	8	1	5	2	4	3	7	0	1

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON — Boones Ferry Rd / Settlemier Ave & OR 214
January 1, 2011 through December 31, 2015

```
      S  D
      P  R S W                                          RD#  FC   CONN #                         INT-TYP                                         SPCL USE
SER#   E A U C O  DATE        COUNTY                    CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP        TRLR QTY   MOVE                         A  S
INVEST E L G H R  DAY/TIME    CITY                      MILEPNT   SECOND STREET        DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP         OWNER      FROM         PRTC  INJ       G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG    URBAN AREA                LRS       INTERSECTION SEQ#    LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY       V#  VEH TYPE   TO      P#  TYPE  SVRTY     E  X  RES   LOC  ERROR          ACTN EVENT       CAUSE

02557  Y N N      08/03/2012  MARION                    1    14                        INTER    CROSS    N           Y CLR  FIX OBJ      01 NONE     0 TURN-L                                                             040         01
NONE              Fri     6P  WOODBURN                  MN    0   HILLSBORO-SILV HY    E                 TRF SIGNAL  N DRY  FIX               PRVTE      N  E                                                           000  040         00
                              WOODBURN UA                37.87    SETTLEMIER AVE       05         0                  N DAY  PDO              PSNGR CAR           01  DRVR  NONE     25  F  OR-Y       047,080,081    017              01
No     45  8 58.04  -122 51 34.65                       014000100S00              1                                                                                                OR<25

00012  N N N      01/03/2012  MARION                    1    14                        INTER    CROSS    N           N CLR  S-1STOP      01 NONE     0 STRGHT                                                             004         07
NONE              Tue     4P  WOODBURN                  MN    0   BOONES FERRY RD      W                 TRF SIGNAL  N DRY  REAR              PRVTE      W  E                                                           000              00
                              WOODBURN UA                37.87    HILLSBORO-SILV HY    06         0                  N DAY  PDO              PSNGR CAR           01  DRVR  NONE     37  F  OR-Y       026            000              07
No     45  8 58.14  -122 51 35.96                       014000100S00              1                                                                                                OR<25

                                                                                                                                         02 NONE     0 STOP
                                                                                                                                            PRVTE      W  E                                                           011  004         00
                                                                                                                                           PSNGR CAR           01  DRVR  NONE     38  F  OR-Y       000            000              00
                                                                                                                                                                                                OR<25

83924  N N N      10/14/2013  MARION                    1    14                        INTER    CROSS    N           N CLR  S-1STOP      01 NONE     0 STRGHT                                                                         07
NO RPT            Mon     3P  WOODBURN                  MN    0   BOONES FERRY RD      W                 TRF SIGNAL  N DRY  REAR              PRVTE      W  E                                                           000              00
                              WOODBURN UA                37.87    HILLSBORO-SILV HY    06         0                  N DAY  PDO              PSNGR CAR           01  DRVR  NONE     53  M  OR-Y       026            000              07
No     45  8 58.04  -122 51 34.65                       014000100S00              1                                                                                                OR<25

                                                                                                                                         02 NONE     0 STOP
                                                                                                                                            PRVTE      W  E                                                           011              00
                                                                                                                                           PSNGR CAR           01  DRVR  NONE     46  F  OTH-Y      000            000              00
                                                                                                                                                                                                N-RES

02839  N N N      07/28/2015  MARION                    1    14                        INTER    CROSS    N           N CLR  S-OTHER      01 NONE     1 TURN-R                                                                         08
NO RPT            Tue     9A  WOODBURN                  MN    0   BOONES FERRY RD      CN                TRF SIGNAL  N DRY  TURN              PRVTE      N  W                                                           000              00
                              WOODBURN UA                37.87    HILLSBORO-SILV HY    01         0                  N DAY  INJ               SEMI TOW           01  DRVR  NONE     49  M  OR-Y       006            000              08
No     45  8 58.04  -122 51 34.65                       014000100S00              1                                                                                                OR<25

                                                                                                                                         02 NONE     0 TURN-R
                                                                                                                                            PRVTE      N  W                                                           000              00
                                                                                                                                           PSNGR CAR           01  DRVR  INJC     25  F  OR-Y       000            000              00
                                                                                                                                                                                                OR<25
                                                                                                                                                               02  PSNG  NO<5     03  M             000            000              00

00211  N N N Y N  01/21/2011  MARION                    1    14                        INTER    CROSS    N           N RAIN O-1 L-TURN   01 NONE     0 TURN-L                                                                         04
CITY              Fri     7A  WOODBURN                  MN    0   BOONES FERRY RD      CN                TRF SIGNAL  N WET  TURN              PRVTE      W  N                                                           000              00
                              WOODBURN UA                37.87    HILLSBORO-SILV HY    02         0                  N DLIT INJ              PSNGR CAR           01  DRVR  INJC     51  M  OR-Y       020            000              04
No     45  8 58.04  -122 51 34.65                       014000100S00              1                                                                                                OR<25

                                                                                                                                         02 NONE     0 STRGHT
                                                                                                                                            PRVTE      E  W                                                           000              00
                                                                                                                                           PSNGR CAR           01  DRVR  INJB     45  F  OR-Y       000            000              00
                                                                                                                                                                                                OR>25

03856  N N N      08/25/2013  MARION                    1    14                        INTER    CROSS    N           N CLR  O-1 L-TURN   01 NONE     0 TURN-L                                                                         02
NO RPT            Sun     3A  WOODBURN                  MN    0   BOONES FERRY RD      CN                TRF SIGNAL  N DRY  TURN              PRVTE      W  N                                                           000              00
                              WOODBURN UA                37.87    HILLSBORO-SILV HY    02         0                  N DLIT INJ              PSNGR CAR           01  DRVR  NONE     00  U  UNK        097            000              00
No     45  8 58.04  -122 51 34.65                       014000100S00              1                                                                                                UNK
```

140 HILLSBORO-SILVERTON

Boones Ferry Rd / Settlemier Ave & OR 214
January 1, 2011 through December 31, 2015

```
      S   D
      P   R S W                                  RD#  FC   CONN #                             INT-TYP                                             SPCL USE
SER#  E A U C O  DATE          COUNTY            CMPT/MLG  FIRST  STREET       RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP   TRLR QTY  MOVE              A  S
INVEST E L G H R  DAY/TIME     CITY              MILEPNT   SECOND STREET       DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP    OWNER     FROM    PRTC INJ  G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG     URBAN AREA        LRS       INTERSECTION SEQ#   LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE  TO   P# TYPE SVRTY E  X  RES   LOC ERROR     ACTN EVENT     CAUSE

                                                                                                                           02 NONE    0 TURN-L
                                                                                                                              PRVTE     E  S                                               000             00
                                                                                                                              PSNGR CAR          01 DRVR INJC  47 M  OR-Y       097        000             00
                                                                                                                                                                     OR<25
                                                                                                                                                 02 PSNG NO<5  02 M             000        000             00

02927  N N N N N 08/29/2013 MARION           1    14                        INTER     CROSS  N          N RAIN  ANGL-OTH   01 NONE    0 STRGHT                                                   013        04
CITY             Thu     5A WOODBURN         MN    0   BOONES FERRY RD      CN                TRF SIGNAL N WET   ANGL          PRVTE     E  W                                               000  013        00
                            WOODBURN UA       37.87    HILLSBORO-SILV HY    02          1              N DAWN  INJ            PSNGR CAR          01 DRVR INJB  19 F  OR-Y       020        000             04
No     45  8 58.04  -122 51 34.65            014000100S00              1                                                                                          OR<25
                                                                                                                                                 02 PSNG INJB  52 F             000        000             00

                                                                                                                           02 NONE    0 STRGHT
                                                                                                                              PRVTE     S  N                                               000             00
                                                                                                                              PSNGR CAR          01 DRVR INJB  45 M  NONE       000        000             00
                                                                                                                                                                     OR<25

                                                                                                                           03 NONE    0 STOP
                                                                                                                              PRVTE     N  S                                               012             00
                                                                                                                              PSNGR CAR          01 DRVR INJB  45 M  OR-Y       000        000             00
                                                                                                                                                                     OR<25
```

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Butteville Rd & OR 219 Hillsboro-Silverton Hwy (140)

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	1	1	2	0	2	0	2	0	1	1	2	0	0
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2015 TOTAL	0	1	3	4	0	2	0	3	1	2	2	4	0	0
YEAR: 2014														
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2012														
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2011														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	1
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	2	2	0	0	0	2	0	1	1	2	0	1
FINAL TOTAL	0	1	7	8	0	2	0	6	2	4	4	8	0	1

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON   Butteville Rd & OR 219 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
      S  D
      P  R S W                               RD#  FC    CONN #                        INT-TYP                                      SPCL USE
SER#   E A U C O  DATE        COUNTY         CMPT/MLG  FIRST  STREET       RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP   TRLR QTY  MOVE                      A  S
INVEST E L G H R  DAY/TIME    CITY           MILEPNT   SECOND STREET       DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP    OWNER     FROM        PRTC  INJ     G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG    URBAN AREA     LRS       INTERSECTION SEQ#   LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE  TO     P#  TYPE  SVRTY  E  X  RES    LOC  ERROR         ACTN  EVENT    CAUSE

00137  N N N     01/14/2014  MARION      1    06                  INTER     3-LEG  N              N RAIN  S-1STOP   01 NONE    0  STRGHT                                                                    07
COUNTY           Tue    7P               MN    0                  UN                STOP SIGN     N WET   REAR         PRVTE      S  N                                                           000             00
                                          36.02                   06          0                   N DARK  PDO         PSNGR CAR             01 DRVR NONE  27 M SUSP        026              000             07
No      45  9  4.13  -122 53 47.58       014000100S00                                                                                                  OR>25

                                                                                                                  02 NONE    0  STOP
                                                                                                                     PRVTE      S  N                                                           012             00
                                                                                                                    PSNGR CAR             01 DRVR NONE  33 M OR-Y        000              000             00
                                                                                                                                                            OR<25

02907  Y N N N N 09/04/2011  MARION      1    06                  INTER     3-LEG  N              Y CLR   FIX OBJ   01 NONE    0  STRGHT                                                                 088        30,03
STATE            Sun   10P               MN    0                  N                 STOP SIGN     N DRY   FIX          PRVTE      S  N                                                           000  088        00
                                          36.02                   05          0                   N DARK  PDO         PSNGR CAR             01 DRVR NONE  18 M OR-Y        050,021,081      000             30,03
No      45  9  4.13  -122 53 47.58       014000100S00                                                                                                  OR<25

                                                                                                                  02 NONE    0  PRKD-P
                                                                                                                     PRVTE      S  N                                                           032             00
                                                                                                                    PSNGR CAR

02466  Y N N     07/26/2012  MARION      1    06                  INTER     3-LEG  N              N CLR   O-STRGHT  01 NONE    0  STRGHT                                                                    01
NO RPT           Thu    7A               MN    0                  E                 UNKNOWN       N DRY   SS-M         PRVTE      E  W                                                           007             00
                                          36.02                   06          0                   N DAY   PDO         PSNGR CAR             01 DRVR NONE  48 M OR-Y        047,080          000             01
No      45  9  4.13  -122 53 47.58       014000100S00                                                                                                  OR>25

                                                                                                                  02 NONE    0  STRGHT
                                                                                                                     PRVTE      W  E                                                           000             00
                                                                                                                    PSNGR CAR             01 DRVR NONE  42 F OR-Y        000              000             00
                                                                                                                                                            OR<25

02702  N N N     08/19/2011  MARION      1    06                  INTER     3-LEG  N              N CLR   S-1STOP   01 NONE    0  STRGHT                                                                 013        07
NONE             Fri    1P               MN    0                  S                 UNKNOWN       N DRY   REAR         PRVTE      S  N                                                           000             00
                                          36.02                   06          0                   N DAY   PDO         PSNGR CAR             01 DRVR NONE  00 M OR-Y        026              000             07
No      45  9  4.13  -122 53 47.58       014000100S00                                                                                                  OR<25

                                                                                                                  02 NONE    0  STOP
                                                                                                                     PRVTE      S  N                                                           011  013        00
                                                                                                                    PSNGR CAR             01 DRVR NONE  26 M OR-Y        000              000             00
                                                                                                                                                            OR<25

                                                                                                                  03 NONE    0  STOP
                                                                                                                     PRVTE      S  N                                                           022             00
                                                                                                                    PSNGR CAR             01 DRVR NONE  28 M OR-Y        000              000             00
                                                                                                                                                            OR<25

01065  N N N     03/23/2015  MARION      1    16                  INTER     3-LEG  N              N CLR   S-1STOP   01 NONE    0  STRGHT                                                                    07
NONE             Mon   10A               MN    0                  S                 STOP SIGN     N DRY   REAR         RENTL      S  N                                                           000             00
                         WOODBURN UA      36.02                   06          0                   N DAY   INJ         PSNGR CAR             01 DRVR NONE  25 M OR-Y        026              000             07
No      45  9  4.13  -122 53 47.58       014000100S00                                                                                                  OR<25
```

140 HILLSBORO-SILVERTON

Butteville Rd & OR 219 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P: E A U C O / D R S W: E L G H R / D C S L K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0	STOP											
													PRVTE	S N									012		00
													PSNGR CAR		01	DRVR	INJC	18	M	OR-Y		000	000		00
																				OR<25					
															02	PSNG	INJC	17	F			000	000		00
03986	N N N	10/16/2015	MARION	1 16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		Fri 6A		MN 0		S		STOP SIGN	N	DRY	REAR		PRVTE	S N									000		00
			WOODBURN UA	36.02		06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		026	000		29
No		*45 9 4.13 -122 53 47.58*		014000100S00																OR<25					
												02	NONE 0	STOP											
													PRVTE	S N									012		00
													PSNGR CAR		01	DRVR	NONE	00	F	UNK		000	000		00
																				UNK					
01241	N N N	04/06/2015	MARION	1 16		INTER	3-LEG	N	N	CLR	O-STRGHT	01	NONE 0	STRGHT										128	10
NONE		Mon 5P		MN 0		CN		STOP SIGN	N	DRY	SS-M		PRVTE	N S									000	128	00
			WOODBURN UA	36.02		02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		079,080	000		10
No		*45 9 4.13 -122 53 47.58*		014000100S00																OR<25					
												02	NONE 0	STRGHT											
													PRVTE	S N									000	128	00
													PSNGR CAR		01	DRVR	NONE	40	M	OR-Y		000	000		00
																				OR>25					
00038	N N N	01/05/2015	MARION	1 16		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-R											02
NONE		Mon 1A		MN 0		CN		STOP SIGN	N	WET	TURN		PRVTE	W S									000		00
			WOODBURN UA	36.02		03	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		028	000		02
No		*45 9 4.13 -122 53 47.58*		014000100S00																UNK					
												02	NONE 0	STRGHT											
													PRVTE	N S									000		00
													PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		000	000		00
																				OR<25					

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

Cascade Dr & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2015 TOTAL	0	2	0	2	0	2	0	1	1	2	0	2	0	0
YEAR: 2014														
SIDESWIPE - OVERTAKING	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2014 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
FINAL TOTAL	0	3	1	4	0	3	0	2	2	4	0	4	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON

Cascade Dr & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
       S   D
       P   R S W                                       RD#  FC    CONN #                              INT-TYP                                        SPCL USE
SER#   E A U C O  DATE        COUNTY                   CMPT/MLG  FIRST  STREET          RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                     A  S
INVEST E L G H R  DAY/TIME    CITY                     MILEPNT   SECOND STREET          DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM      PRTC  INJ    G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG    URBAN AREA               LRS       INTERSECTION SEQ#      LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE   TO     P# TYPE  SVRTY  E  X  RES    LOC  ERROR      ACTN  EVENT    CAUSE

03549  N N N      10/10/2014  MARION                   1    14                          INTER     3-LEG   N            N CLR   S-STRGHT  01 NONE    0  STRGHT                                                          13
NONE              Fri    10A  WOODBURN                 MN    0    CASCADE DR            E                 STOP SIGN    N DRY   SS-O         PRVTE      E  W                                            000               00
                              WOODBURN UA               37.27     HILLSBORO-SILV HY     06          0                  N DAY   INJ         PSNGR CAR          01 DRVR NONE  43  M  OR-Y        045        000               13
No     45  9  3.25  -122 52 14.70                      014000100S00              1                                                                                        OR<25

                                                                                                                                  02 NONE    0  STRGHT
                                                                                                                                     PRVTE      E  W                                            000               00
                                                                                                                                    PSNGR CAR          01 DRVR INJC  43  F  OR-Y        000        000               00
                                                                                                                                                                          OR<25

05096  N N N N N  12/19/2015  MARION                   1    14                          INTER     3-LEG   N            N CLD   BIKE                                                                                    110      02
CITY              Sat     1P  WOODBURN                 MN    0    CASCADE DR            S                 STOP SIGN    N WET   TURN
                              WOODBURN UA               37.27     HILLSBORO-SILV HY     06          0                  N DAY   INJ                            STRGHT  01 BIKE INJB  66  M              01  062        047  110      00
No     45  9  3.25  -122 52 14.70                      014000100S00              1                                                              E  W

                                                                                                                                  01 NONE    0  TURN-R
                                                                                                                                     PRVTE      S  E                                            000               00
                                                                                                                                    PSNGR CAR          01 DRVR NONE  52  M  OR-Y        027        000               02
                                                                                                                                                                          OR<25

00038  N N N N N  01/05/2012  MARION                   1    14                          INTER     3-LEG   N            N RAIN  ANGL-OTH  01 NONE    0  TURN-L                                                          02
CITY              Thu     7A  WOODBURN                 MN    0    CASCADE DR            W                 NONE         N WET   TURN         PRVTE      S  W                                            015               00
                              WOODBURN UA               37.27     HILLSBORO-SILV HY     05          0                  N DAY   PDO         PSNGR CAR          01 DRVR NONE  39  M  OR-Y        028        000               02
No     45  9  3.25  -122 52 14.70                      014000100S00              1                                                                                        OR>25

                                                                                                                                  02 NONE    0  STRGHT
                                                                                                                                     PRVTE      E  W                                            000               00
                                                                                                                                    PSNGR CAR          01 DRVR NONE  39  M  OR-Y        000        000               00
                                                                                                                                                                          OR<25

03176  N N N N Y  08/21/2015  MARION                   1    14                          INTER     3-LEG   N            N CLR   S-1STOP   01 NONE    0  STRGHT                                                   004      07
CITY              Fri     4P  WOODBURN                 MN    0    CASCADE DR            W                 STOP SIGN    N DRY   REAR         PRVTE      W  E                                            000               00
                              WOODBURN UA               37.27     HILLSBORO-SILV HY     06          0                  N DAY   INJ         PSNGR CAR          01 DRVR NONE  52  M  OR-Y        043,026    000               07
No     45  9  3.25  -122 52 14.70                      014000100S00              1                                                                                        OR<25

                                                                                                                                  02 NONE    0  STOP
                                                                                                                                     PRVTE      W  E                                            011  004          00
                                                                                                                                    PSNGR CAR          01 DRVR INJC  18  M  OR-Y        000        000               00
                                                                                                                                                                          OR<25
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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Cleveland St & Front St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2013														
ANGLE	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2013 TOTAL	0	1	0	1	0	1	0	0	1	0	1	1	0	0
YEAR: 2012														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	2	0	2	0	2	0	1	1	1	1	2	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Cleveland St & Front St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S D P R S W E A U C O E L G H R D C S L K	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03169	N N N N N	09/19/2012	16	CLEVELAND ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
CITY		Wed 2P	0	FRONT ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SE NW									000	00
No	*45 8 28.16*	*-122 51 29.35*		1	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	F	OR-Y		000	000	00
																			OR<25				
											02	NONE 0	STRGHT										
												PRVTE	SW NE									000	00
												PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		021	000	03
																			OR<25				
03925	N N N	11/06/2013	16	CLEVELAND ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										02
NONE		Wed 6P	0	FRONT ST	CN		STOP SIGN	N	WET	ANGL		PRVTE	NW SE									015	00
No	*45 8 28.16*	*-122 51 29.35*		1	03	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		028	000	02
																			OR<25				
											02	NONE 0	STRGHT										
												PRVTE	NE SW									015	00
												PSNGR CAR		01	DRVR	INJC	30	F	OR-Y		000	000	00
																			OR<25				

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

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	3	0	3	0	4	0	2	1	2	1	3	0	0
2015 TOTAL	0	3	1	4	0	4	0	3	1	3	1	4	0	0
YEAR: 2014														
HEAD-ON	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	3	2	5	0	5	0	2	3	4	1	5	0	0
2014 TOTAL	0	4	3	7	0	6	0	3	4	6	1	7	0	0
YEAR: 2013														
ANGLE	0	1	1	2	0	2	0	0	2	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2013 TOTAL	0	2	1	3	0	3	0	1	2	2	1	3	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	0	2	1	1	2	0	0
2012 TOTAL	0	2	1	3	0	2	0	1	2	2	1	3	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
2011 TOTAL	0	1	3	4	0	1	0	2	2	2	2	4	0	0
FINAL TOTAL	0	12	9	21	0	16	0	10	11	15	6	21	0	0

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

081 PACIFIC HIGHWAY EAST

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

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       S   D
       P   R S W                                            RD#  FC    CONN #                                INT-TYP                                     SPCL USE
SER#   E A U C O  DATE          COUNTY                      CMPT/MLG  FIRST  STREET          RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR   CRASH TYP     TRLR QTY   MOVE                        A  S
INVEST E L G H R  DAY/TIME      CITY                        MILEPNT   SECOND STREET          DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP       OWNER      FROM       PRTC  INJ     G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG      URBAN AREA                  LRS       INTERSECTION SEQ#      LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY      V# VEH TYPE    TO      P# TYPE  SVRTY   E  X  RES    LOC  ERROR          ACTN EVENT      CAUSE

03231  N N N      09/25/2012  MARION                      1    14                          INTER      3-LEG   N              N CLR   S-1STOP    01 NONE    0  STRGHT                                                                    07
NONE              Tue     2P  WOODBURN                    MN    0    CLEVELAND ST          NE                 UNKNOWN        N DRY   REAR          PRVTE      NE SW                                                      000              00
                              WOODBURN UA                  32.97     PACIFIC HY 99E        06           0                    Y DAY   INJ          PSNGR CAR            01 DRVR  NONE    74 M  OR-Y         026            000              07
No     45  8  8.64  -122 50 42.25                         008100100S00              1                                                                                             UNK

                                                                                                                             02 NONE    0  STOP
                                                                                                                                PRVTE      NE SW                                                      012              00
                                                                                                                               PSNGR CAR            01 DRVR  INJC    47 F  OR-Y         000            000              00
                                                                                                                                                                              OR<25

03452  Y N N      10/14/2011  MARION                      1    14                          INTER      CROSS   N              N RAIN  S-1STOP    01 NONE    0  STRGHT                                                                    01,07
NONE              Fri     1P  WOODBURN                    MN    0    CLEVELAND ST          SW                 TRF SIGNAL     N WET   REAR          PRVTE      SW NE                                                      000              00
                              WOODBURN UA                  32.97     PACIFIC HY 99E        06           0                    N DAY   PDO          PSNGR CAR            01 DRVR  NONE    46 F  OR-Y         047,026        000              01,07
No     45  8  8.64  -122 50 42.25                         008100100S00              1                                                                                             OR<25

                                                                                                                             02 NONE    0  STOP
                                                                                                                                PRVTE      SW NE                                                      011  013         00
                                                                                                                               PSNGR CAR            01 DRVR  NONE    28 M  OR-Y         000            000              00
                                                                                                                                                                              OR<25

                                                                                                                             03 NONE    0  STOP
                                                                                                                                PRVTE      SW NE                                                      022              00
                                                                                                                               PSNGR CAR            01 DRVR  NONE    63 F  OR-Y         000            000              00
                                                                                                                                                                              OR<25

02897  N N N N N  08/25/2014  MARION                      1    14                          INTER      3-LEG   N              N CLR   O-1STOP    01 NONE    1  STRGHT                                                           022          25
STATE             Mon     5P  WOODBURN                    MN    0    CLEVELAND ST          SW                 STOP SIGN      N DRY   HEAD          PRVTE      NE SW                                                      000  022         25
                              WOODBURN UA                  32.97     PACIFIC HY 99E        06           0                    N DAY   INJ          PSNGR CAR            01 DRVR  NONE    34 M  OR-Y         017,080        000              00
No     45  8  8.64  -122 50 42.25                         008100100S00              1                                                                                             OR<25

                                                                                                                             02 NONE    0  STOP
                                                                                                                                PRVTE      SW NE                                                      011              00
                                                                                                                               PSNGR CAR            01 DRVR  INJC    30 F  OR-Y         000            000              00
                                                                                                                                                                              OR<25

03691  N N N      10/21/2014  MARION                      1    14                          INTER      3-LEG   N              N RAIN  S-1STOP    01 NONE    0  STRGHT                                                                    07
NONE              Tue     8A  WOODBURN                    MN    0    CLEVELAND ST          SW                 STOP SIGN      N WET   REAR          PRVTE      SW NE                                                      000              00
                              WOODBURN UA                  32.97     PACIFIC HY 99E        06           0                    N DAY   PDO          PSNGR CAR            01 DRVR  NONE    00 M  OR-Y         026            000              07
No     45  8  8.64  -122 50 42.25                         008100100S00              1                                                                                             OR>25

                                                                                                                             02 NONE    0  STOP
                                                                                                                                PRVTE      SW NE                                                      011              00
                                                                                                                               PSNGR CAR            01 DRVR  NONE    25 M  OR-Y         000            000              00
                                                                                                                                                                              OR<25

01803  N N N      05/18/2015  MARION                      1    16                          INTER      3-LEG   N              N CLR   S-1STOP    01 NONE    0  STRGHT                                                                    29
NONE              Mon     9A  WOODBURN                    MN    0    CLEVELAND ST          CN                 STOP SIGN      N DRY   REAR          PRVTE      N  S                                                       000              00
                              WOODBURN UA                  32.97     PACIFIC HY 99E        01           0                    Y DAY   PDO          PSNGR CAR            01 DRVR  NONE    25 F  OR-Y         026            000              29
No     45  8  8.64  -122 50 42.25                         008100100S00              1                                                                                             OR<25
                                                                                                                                                    02 PSNG  NO<5    03 F               000            000              00
                                                                                                                                                    03 PSNG  NO<5    01 M               000            000              00
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081 PACIFIC HIGHWAY EAST

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P D E A U C O / E L G H R / D C S L K (S D P R S W)	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL / TRAF- CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / OWNER / VEH TYPE	TRLR QTY	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
													02	NONE	0	STOP										
														PRVTE		N S									012	00
														PSNGR CAR			01	DRVR	NONE	00	M	UNK		000	000	00
																						UNK				
00345	N N N N N	02/05/2011	MARION	1	14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT										02
CITY		Sat 7A	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE		NE SW									000	00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAWN	INJ		PSNGR CAR			01	DRVR	INJC	37	F	OR-Y		000	000	00
No		*45 8 8.64 -122 50 42.25*		008100100S00		1																OR<25				
													02	NONE	0	TURN-L										
														PRVTE		NW NE									000	00
														PSNGR CAR			01	DRVR	NONE	35	F	OR-Y		028	000	02
																						OR<25				
01942	N N N	06/17/2011	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	TURN-L										02
CITY		Fri 4P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE		NW NE									015	00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	39	M	OR-Y		028	000	02
No		*45 8 8.64 -122 50 42.25*		008100100S00		1																OR<25				
													02	NONE	0	STRGHT										
														PRVTE		NE SW									000	00
														PSNGR CAR			01	DRVR	NONE	25	F	OR-Y		000	000	00
																						OR<25				
03267	N N N	09/30/2011	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT										02
NONE		Fri 7P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE		NE SW									000	00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DUSK	PDO		PSNGR CAR			01	DRVR	NONE	35	M	OR-Y		000	000	00
No		*45 8 8.64 -122 50 42.25*		008100100S00		1																OR<25				
													02	NONE	0	STRGHT										
														PRVTE		NW SE									000	00
														PSNGR CAR			01	DRVR	NONE	22	F	OR-Y		028	000	02
																						OR<25				
03678	N N N	10/31/2012	MARION	1	14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT										02
CITY		Wed 5P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE		NE SW									000	00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	20	M	OR-Y		000	000	00
No		*45 8 8.64 -122 50 42.25*		008100100S00		1																OR<25				
													02	NONE	0	TURN-L										
														PRVTE		NW NE									015	00
														PSNGR CAR			01	DRVR	NONE	17	F	OR-Y		028	000	02
																						OR<25				
04313	N N N	12/17/2012	MARION	1	14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	0	TURN-L										02
NONE		Mon 6P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE		NW NE									000	00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DLIT	INJ		PSNGR CAR			01	DRVR	NONE	19	M	OR-Y		028	000	02
No		*45 8 8.64 -122 50 42.25*		008100100S00		1																OR<25				
																	02	PSNG	INJC	00	F			000	000	00

081 PACIFIC HIGHWAY EAST

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E A U C O / D R S W / E L G H R / D C S L K	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT / MILEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACTN	EVENT	CAUSE
													02	NONE 0	STRGHT											
														PRVTE	NE SW									000		00
														PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		000	000		00
																					OR<25					
03675	Y N N N N	10/22/2013	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02,30
CITY		Tue 8P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE SW									000		00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y		050	000		30
No		*45 8 8.64 -122 50 42.25*		008100100S00		1															OR<25					
																02	PSNG	INJC	18	F			000	000		00
													02	NONE 0	TURN-L											
														PRVTE	NW NE									015		00
														PSNGR CAR		01	DRVR	NONE	68	F	OR-Y		028	000		02
																					OR<25					
04090	N N N	11/18/2013	MARION	1	14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											02
NONE		Mon 4P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	ANGL		PRVTE	NE SW									000		00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	56	M	OR-Y		000	000		00
No		*45 8 8.64 -122 50 42.25*		008100100S00		1															OR<25					
													02	NONE 0	STRGHT											
														PRVTE	NW SE									000		00
														PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		028	000		02
																					OR<25					
01485	N N N	05/05/2014	MARION	1	14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-L										082	02
CITY		Mon 2P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE	NW NE									015		00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	32	M	NONE		028	000	082	02
No		*45 8 8.64 -122 50 42.25*		008100100S00		1															OR<25					
													02	NONE 0	STRGHT											
														PRVTE	NE SW									000		00
														PSNGR CAR		01	DRVR	INJB	46	F	OR-Y		000	000		00
																					OR<25					
																02	PSNG	INJB	67	M			000	000		00
02391	N N N N N	07/18/2014	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY		Fri 6P	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE SW									000		00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	27	M	SUSP		028	000		02
No		*45 8 8.64 -122 50 42.25*		008100100S00		1															OR<25					
													02	NONE 0	TURN-R											
														PRVTE	NW SW									000		00
														PSNGR CAR		01	DRVR	NONE	33	F	OR-Y		000	000		00
																					OR<25					
																02	PSNG	NONE	17	F			000	000		00
03383	N N N	09/30/2014	MARION	1	14		INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT										082	02
CITY		Tue 6A	WOODBURN	MN	0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE	NE SW									000		00
			WOODBURN UA	32.97		PACIFIC HY 99E	03	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y		000	000		00
No		*45 8 8.64 -122 50 42.25*		008100100S00		1															OR<25					

081 PACIFIC HIGHWAY EAST

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E A U C O / D R S W / D C S L K (E L G H R)	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	UNKN 0	TURN-L											
													UNKN	NW NE									000		00
													UNKNOWN		01	DRVR	NONE	00	U	UNK		028	000	082	02
																				UNK					
03859	N N N	10/31/2014	MARION	1 14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE		Fri 2P	WOODBURN	MN 0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE SW									000		00
			WOODBURN UA	32.97	PACIFIC HY 99E	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	51	F	OR-Y		000	000		00
No		*45 8 8.64 -122 50 42.25*		008100100S00	1															OR<25					
												02	NONE 0	TURN-L											
													PRVTE	NW NE									000		00
													PSNGR CAR		01	DRVR	NONE	00	F	UNK		028	000		02
																				OR<25					
04281	N N N N N	11/28/2014	MARION	1 14		INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-L											02
CITY		Fri 9A	WOODBURN	MN 0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE	NW NE									000		00
			WOODBURN UA	32.97	PACIFIC HY 99E	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	26	F	OR-Y		028	000		02
No		*45 8 8.64 -122 50 42.25*		008100100S00	1															OR<25					
												02	NONE 0	STRGHT											
													PRVTE	NE SW									000		00
													PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																				OR<25					
															02	PSNG	NO<5	03	M			000	000		00
															03	PSNG	NO<5	01	M			000	000		00
01249	N N N N N	04/07/2015	MARION	1 16		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-L										087	02
CITY		Tue 8P	WOODBURN	MN 0	CLEVELAND ST	CN		STOP SIGN	N	WET	TURN		PRVTE	NW NE									015	087	00
			WOODBURN UA	32.97	PACIFIC HY 99E	03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		028	000		02
No		*45 8 8.64 -122 50 42.25*		008100100S00	1															OR<25					
												02	NONE 0	STRGHT											
													PRVTE	NE SW									000	087	00
													PSNGR CAR		01	DRVR	INJB	48	F	OR-Y		000	000		00
																				OR<25					
03274	N N N N N	08/31/2015	MARION	1 16		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
CITY		Mon 6P	WOODBURN	MN 0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NW NE									015		00
			WOODBURN UA	32.97	PACIFIC HY 99E	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	16	M	N-VAL		028	000		02
No		*45 8 8.64 -122 50 42.25*		008100100S00	1															OR<25					
												02	NONE 0	STRGHT											
													PRVTE	NE SW									000		00
													PSNGR CAR		01	DRVR	NONE	73	M	OTH-Y		000	000		00
																				N-RES					
04071	N N N	10/22/2015	MARION	1 16		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
CITY		Thu 2P	WOODBURN	MN 0	CLEVELAND ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NW NE									015		00
			WOODBURN UA	32.97	PACIFIC HY 99E	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	21	M	SUSP		028	000		02
No		*45 8 8.64 -122 50 42.25*		008100100S00	1															OR<25					

081 PACIFIC HIGHWAY EAST

Cleveland St & OR 99E
January 1, 2011 through December 31, 2015

```
      S   D
      P   R S W
SER#  E A U C O DATE        COUNTY              RD#  FC   CONN #                                INT-TYP                                        SPCL USE
INVEST E L G H R DAY/TIME   CITY                CMPT/MLG  FIRST  STREET         RD CHAR (MEDIAN)  INT-REL OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                 A  S
UNLOC? D C S L K LAT/LONG   URBAN AREA          MILEPNT   SECOND STREET         DIRECT    LEGS    TRAF-   RNDBT SURF  COLL TYP     OWNER     FROM     PRTC INJ    G  E  LICNS PED
                                                LRS       INTERSECTION SEQ#     LOCTN   (#LANES)  CNTL    DRVWY LIGHT SVRTY    V# VEH TYPE   TO    P# TYPE SVRTY E  X  RES   LOC ERROR     ACTN EVENT     CAUSE

                                                                                                                            02 NONE    0 STRGHT
                                                                                                                               PRVTE     NE SW                                              000            00
                                                                                                                              PSNGR CAR       01 DRVR INJC  33 F OR-Y       000         000            00
                                                                                                                                                                 OR<25

03317  N N N    09/26/2013 MARION           1    14                    INTER      3-LEG  N          N RAIN ANGL-OTH  01 NONE    0 STRGHT                                                            03
CITY            Thu    6P  WOODBURN         MN    0   CLEVELAND ST     CN                STOP SIGN  N WET  ANGL         PRVTE     NE SW                                              000            00
                           WOODBURN UA       32.97    PACIFIC HY 99E   04           0               N DAY  INJ         PSNGR CAR       01 DRVR INJA  52 M OR-Y       000         000            00
No     45  8  8.64  -122 50 42.25           008100100S00             1                                                                                   OR<25

                                                                                                                            02 NONE    0 TURN-L
                                                                                                                               PRVTE     NW NE                                              000            00
                                                                                                                              PSNGR CAR       01 DRVR INJC  39 M OR-Y       021         000            03
                                                                                                                                                                 OR>25
```

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

Country Club Rd / Oregon Way & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	2	1	3	0	3	0	3	0	3	0	3	0	0
2015 TOTAL	0	2	1	3	0	3	0	3	0	3	0	3	0	0
YEAR: 2013														
REAR-END	0	0	2	2	0	0	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2013 TOTAL	0	1	2	3	0	1	0	1	2	3	0	3	0	0
YEAR: 2012														
ANGLE	0	1	0	1	0	2	0	1	0	1	0	1	0	0
REAR-END	0	4	0	4	0	6	0	2	2	4	0	4	0	0
2012 TOTAL	0	5	0	5	0	8	0	3	2	5	0	5	0	0
YEAR: 2011														
FIXED / OTHER OBJECT	0	1	0	1	0	2	0	1	0	1	0	1	0	1
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2011 TOTAL	0	2	2	4	0	3	0	3	1	4	0	4	0	1
FINAL TOTAL	0	10	5	15	0	15	0	10	5	15	0	15	0	1

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

140 HILLSBORO-SILVERTON
Country Club Rd / Oregon Way & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
       S  D
       P  R S W                                      RD#  FC   CONN #                            INT-TYP                                     SPCL USE
SER#   E A U C O  DATE        COUNTY                 CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                     A  S
INVEST E L G H R  DAY/TIME    CITY                   MILEPNT   SECOND STREET        DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP     OWNER     FROM         PRTC INJ    G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG    URBAN AREA             LRS       INTERSECTION SEQ#    LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE  TO       P# TYPE SVRTY  E  X  RES   LOC  ERROR        ACTN EVENT        CAUSE

01824  N N N N N  06/07/2011  MARION                 1    14                        INTER     CROSS   N             Y CLR  FIX OBJ  01 NONE    0 STRGHT                                                   040,059,053  12
CITY              Tue     2P  WOODBURN               MN    0   HILLSBORO-SILV HY    E                 TRF SIGNAL    N DRY  FIX         PRVTE     W  E                                             000  040,059,053  00
                              WOODBURN UA             37.14    OREGON WAY           05          0                   N DAY  INJ         PSNGR CAR          01 DRVR INJC  69  M  OR-Y        080,081      028               12
No      45  9  3.38  -122 52 23.90                   014000100S00             1                                                                                     OR>25
                                                                                                                                                          02 PSNG INJB  75  M              000          000               00

80211  N N N      03/03/2012  MARION                 1    14                        INTER     CROSS   N             N CLR  S-1STOP  01 NONE    0 STRGHT                                                                 07
NONE              Sat     5P  WOODBURN               MN    0   COUNTRY CLUB RD      E                 TRF SIGNAL    N DRY  REAR        PRVTE     E  W                                             000               00
                              WOODBURN UA             37.14    HILLSBORO-SILV HY    06          0                   N DAY  INJ         PSNGR CAR          01 DRVR NONE  23  M  OTH-Y       026          000               07
No      45  9  3.38  -122 52 23.90                   014000100S00             1                                                                                     OR<25

                                                                                                                                 02 NONE    0 STOP
                                                                                                                                   PRVTE     E  W                                             011               00
                                                                                                                                   PSNGR CAR          01 DRVR INJC  18  F  OR-Y        000          000               00
                                                                                                                                                                        OR<25

01875  N N N N N  06/07/2012  MARION                 1    14                        INTER     CROSS   N             N CLR  S-1STOP  01 NONE    0 STRGHT                                                                 07
CITY              Thu    10A  WOODBURN               MN    0   HILLSBORO-SILV HY    E                 TRF SIGNAL    N DRY  REAR        PRVTE     E  W                                             000               00
                              WOODBURN UA             37.14    OREGON WAY           06          0                   N DAY  INJ         PSNGR CAR          01 DRVR NONE  51  F  OR-Y        043,026      000               07
No      45  9  3.38  -122 52 23.90                   014000100S00             1                                                                                     OR<25

                                                                                                                                 02 NONE    0 STOP
                                                                                                                                   PRVTE     E  W                                             011               00
                                                                                                                                   PSNGR CAR          01 DRVR INJC  31  M  OR-Y        000          000               00
                                                                                                                                                                        OR<25

03493  N N N N N  10/16/2012  MARION                 1    14                        INTER     CROSS   N             N CLD  S-1STOP  01 NONE    0 STRGHT                                                   013          07
CITY              Tue     4P  WOODBURN               MN    0   COUNTRY CLUB RD      E                 TRF SIGNAL    N WET  REAR        PRVTE     E  W                                             000               00
                              WOODBURN UA             37.14    HILLSBORO-SILV HY    06          0                   N DAY  INJ         PSNGR CAR          01 DRVR NONE  31  M  OR-Y        043,026      000               07
No      45  9  3.38  -122 52 23.90                   014000100S00             1                                                                                     OR<25

                                                                                                                                 02 NONE    0 STOP
                                                                                                                                   PRVTE     E  W                                             011  013          00
                                                                                                                                   PSNGR CAR          01 DRVR INJC  39  M  OTH-Y       000          000               00
                                                                                                                                                                        OR<25

                                                                                                                                 03 NONE    0 STOP
                                                                                                                                   PRVTE     E  W                                             022               00
                                                                                                                                   PSNGR CAR          01 DRVR NONE  23  M  OR-Y        000          000               00
                                                                                                                                                                        OR>25
                                                                                                                                                      02 PSNG INJC  46  M              000          000               00

04404  N N N N N  12/21/2012  MARION                 1    14                        INTER     CROSS   N             N CLD  S-1STOP  01 NONE    0 STRGHT                                                                 07
CITY              Fri     2P  WOODBURN               MN    0   HILLSBORO-SILV HY    E                 TRF SIGNAL    N WET  REAR        PRVTE     E  W                                             000               00
                              WOODBURN UA             37.14    OREGON WAY           06          0                   N DAY  INJ         PSNGR CAR          01 DRVR NONE  46  M  OR-Y        043,026      000               07
No      45  9  3.38  -122 52 23.90                   014000100S00             1                                                                                     OR>25
                                                                                                                                                      02 PSNG INJC  32  M              000          000               00

                                                                                                                                 02 NONE    0 STOP
                                                                                                                                   PRVTE     E  W                                             011               00
                                                                                                                                   PSNGR CAR          01 DRVR INJC  40  M  OR-Y        000          000               00
                                                                                                                                                                        OR<25
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140 HILLSBORO-SILVERTON   Country Club Rd / Oregon Way & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
        S   D
        P   R S W                                      RD#  FC   CONN #                          INT-TYP                                       SPCL USE
SER#    E A U C O  DATE          COUNTY                CMPT/MLG  FIRST  STREET          RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                         A  S
INVEST  E L G H R  DAY/TIME      CITY                  MILEPNT   SECOND STREET          DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM        PRTC INJ         G  E  LICNS PED
UNLOC?  D C S L K  LAT/LONG      URBAN AREA            LRS       INTERSECTION SEQ#      LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V#  VEH TYPE  TO       P# TYPE SVRTY       E  X  RES   LOC  ERROR        ACTN EVENT       CAUSE
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
01292   N N N      04/23/2011    MARION                1    14                          INTER     CROSS   N             N CLR  S-1STOP    01 NONE    0 STRGHT                                                                    07
NONE               Sat     6P    WOODBURN              MN    0   HILLSBORO-SILV HY      W                 TRF SIGNAL    N DRY  REAR          PRVTE     W  E                                                        000              00
                                 WOODBURN UA            37.14    OREGON WAY             06          0                   N DAY  PDO           PSNGR CAR          01 DRVR NONE  00 M OR-Y       026          000              07
No      45  9  3.38  -122 52 23.90                     014000100S00               1                                                                                            OR<25

                                                                                                                                    02 NONE    0 STOP
                                                                                                                                       PRVTE     W  E                                                        011              00
                                                                                                                                       PSNGR CAR          01 DRVR NONE  51 F OR-Y       000          000              00
                                                                                                                                                                           OR>25
                                                                                                                                                          02 PSNG NO<5  01 F            000          000              00

03347   N N N      10/06/2011    MARION                1    14                          INTER     CROSS   N             N CLR  S-1STOP    01 NONE    0 STRGHT                                                                    07
NONE               Thu     4P    WOODBURN              MN    0   HILLSBORO-SILV HY      W                 TRF SIGNAL    N DRY  REAR          PRVTE     W  E                                                        000              00
                                 WOODBURN UA            37.14    OREGON WAY             06          0                   N DAY  INJ           PSNGR CAR          01 DRVR NONE  25 F OR-Y       026          000              07
No      45  9  3.38  -122 52 23.90                     014000100S00               1                                                                                            OR<25

                                                                                                                                    02 NONE    1 STOP
                                                                                                                                       PRVTE     W  N                                                        011              00
                                                                                                                                       PSNGR CAR          01 DRVR INJC  40 F OR-Y       000          000              00
                                                                                                                                                                           OR>25

01799   N N N      06/03/2013    MARION                1    14                          INTER     CROSS   N             N CLR  S-1STOP    01 NONE    0 STRGHT                                                                    07
CITY               Mon     4P    WOODBURN              MN    0   HILLSBORO-SILV HY      W                 TRF SIGNAL    N DRY  REAR          PRVTE     W  E                                                        000              00
                                 WOODBURN UA            37.14    OREGON WAY             06          0                   N DAY  PDO           PSNGR CAR          01 DRVR NONE  29 M OR-Y       026          000              07
No      45  9  3.38  -122 52 23.90                     014000100S00               1                                                                                            OR>25

                                                                                                                                    02 NONE    0 STOP
                                                                                                                                       PRVTE     W  E                                                        011  013         00
                                                                                                                                       PSNGR CAR          01 DRVR NONE  23 F OR-Y       000          000              00
                                                                                                                                                                           OR<25

                                                                                                                                    03 NONE    0 STOP
                                                                                                                                       PRVTE     W  E                                                        022              00
                                                                                                                                       PSNGR CAR          01 DRVR NONE  42 F OR-Y       000          000              00
                                                                                                                                                                           OR<25

03551   N N N      10/12/2013    MARION                1    14                          INTER     CROSS   N             N RAIN S-1STOP    01 NONE    0 STRGHT                                                                    07
NONE               Sat     8A    WOODBURN              MN    0   HILLSBORO-SILV HY      W                 TRF SIGNAL    N WET  REAR          PRVTE     W  E                                                        000              00
                                 WOODBURN UA            37.14    OREGON WAY             06          0                   N DAY  PDO           PSNGR CAR          01 DRVR NONE  20 F OR-Y       026          000              07
No      45  9  3.38  -122 52 23.90                     014000100S00               1                                                                                            OR<25

                                                                                                                                    02 NONE    0 STOP
                                                                                                                                       PRVTE     W  E                                                        011              00
                                                                                                                                       PSNGR CAR          01 DRVR NONE  34 M OR-Y       000          000              00
                                                                                                                                                                           OR>25
                                                                                                                                                          02 PSNG NO<5  04 M            000          000              00
                                                                                                                                                          03 PSNG NO<5  04 M            000          000              00

03821   N N N      11/11/2011    MARION                1    14                          INTER     CROSS   N             N RAIN ANGL-OTH   01 NONE    0 STRGHT                                                                    04
NONE               Fri     4P    WOODBURN              MN    0   HILLSBORO-SILV HY      CN                TRF SIGNAL    N WET  TURN          PRVTE     E  W                                                        000              00
                                 WOODBURN UA            37.14    OREGON WAY             02          0                   N DAY  PDO           PSNGR CAR          01 DRVR NONE  35 F OR-Y       020          000              04
No      45  9  3.38  -122 52 23.90                     014000100S00               1                                                                                            OR<25
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140 HILLSBORO-SILVERTON Country Club Rd / Oregon Way & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
      S  D
      P  R S W                               RD#  FC   CONN #                           INT-TYP                                          SPCL USE
SER#  E A U C O DATE          COUNTY         CMPT/MLG FIRST  STREET       RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                A  S
INVEST E L G H R DAY/TIME     CITY           MILEPNT  SECOND STREET       DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP     OWNER     FROM      PRTC INJ  G  E  LICNS PED
UNLOC? D C S L K LAT/LONG     URBAN AREA     LRS      INTERSECTION SEQ#   LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE  TO     P# TYPE SVRTY E  X  RES   LOC ERROR       ACTN EVENT   CAUSE

                                                                                                                        02 NONE   0 TURN-L
                                                                                                                           PRVTE    S  W                                                000          00
                                                                                                                           PSNGR CAR        01 DRVR NONE  53 F OR-Y      000        000          00
                                                                                                                                                               OR<25

02358  N N N     06/24/2015 MARION         1    14                      INTER     CROSS  N          N CLR  O-1 L-TURN 01 NONE   0 STRGHT                                                       04
CITY            Wed    2P  WOODBURN        MN    0  COUNTRY CLUB RD     CN               TRF SIGNAL N DRY  TURN          PRVTE    E  W                                                000          00
                           WOODBURN UA      37.14   HILLSBORO-SILV HY   02          0               N DAY  INJ           PSNGR CAR        01 DRVR INJC  68 M OR-Y      000        000          00
No      45  9  3.38  -122 52 23.90         014000100S00            1                                                                                   OR<25

                                                                                                                        02 NONE   0 TURN-L
                                                                                                                           PRVTE    W  N                                                000          00
                                                                                                                           PSNGR CAR        01 DRVR INJC  74 F OR-Y      020,004    000          04
                                                                                                                                                               OR<25

04095  N N N     07/30/2015 MARION         1    14                      INTER     CROSS  N          N CLR  O-1 L-TURN 01 NONE   0 STRGHT                                                       02
NO RPT          Thu   10A  WOODBURN        MN    0  COUNTRY CLUB RD     CN               FLASHBCN-A N DRY  TURN          PRVTE    E  W                                                000          00
                           WOODBURN UA      37.14   HILLSBORO-SILV HY   02          0               N DAY  INJ           PSNGR CAR        01 DRVR NONE  54 F OR-Y      000        000          00
No      45  9  3.38  -122 52 23.90         014000100S00            1                                                                                   OR<25
                                                                                                                                            02 PSNG INJC  35 F           000        000          00

                                                                                                                        02 NONE   0 TURN-L
                                                                                                                           PRVTE    W  N                                                000          00
                                                                                                                           PSNGR CAR        01 DRVR NONE  63 M OR-Y      028,004    000          02
                                                                                                                                                               OR>25

03457  N N N   Y 09/10/2015 MARION         1    14                      INTER     CROSS  N          N CLR  O-1 L-TURN 01 NONE   0 TURN-L                                                       02
CITY            Thu    5P  WOODBURN        MN    0  COUNTRY CLUB RD     CN               TRF SIGNAL N DRY  TURN          PRVTE    W  N                                                000          00
                           WOODBURN UA      37.14   HILLSBORO-SILV HY   02          0               N DAY  PDO           PSNGR CAR        01 DRVR NONE  73 M OR-Y      028,004    000          02
No      45  9  3.38  -122 52 23.90         014000100S00            1                                                                                   OR>25

                                                                                                                        02 NONE   0 STRGHT
                                                                                                                           PRVTE    E  W                                                000          00
                                                                                                                           PSNGR CAR        01 DRVR NONE  37 F OR-Y      000        000          00
                                                                                                                                                               OR<25

01723  N N N N N 05/23/2012 MARION         1    14                      INTER     CROSS  N          N CLR  ANGL-OTH   01 NONE   0 STRGHT                                                       04
CITY            Wed    2P  WOODBURN        MN    0  HILLSBORO-SILV HY   CN               TRF SIGNAL N DRY  ANGL          PRVTE    W  E                                                000          00
                           WOODBURN UA      37.14   OREGON WAY          03          0               N DAY  INJ           PSNGR CAR        01 DRVR NONE  27 M OR-Y      020        000          04
No      45  9  3.38  -122 52 23.90         014000100S00            1                                                                                   OR>25

                                                                                                                        02 NONE   0 STRGHT
                                                                                                                           PRVTE    N  S                                                000          00
                                                                                                                           PSNGR CAR        01 DRVR INJC  30 F OR-Y      000        000          00
                                                                                                                                                               OR<25
                                                                                                                                            02 PSNG INJB  05 M           000        000          00

04253  N N N   Y 12/02/2013 MARION         1    14                      INTER     CROSS  N          N CLR  O-1 L-TURN 01 NONE   0 STRGHT                                                       02
CITY            Mon    1P  WOODBURN        MN    0  HILLSBORO-SILV HY   CN               TRF SIGNAL N WET  TURN          PRVTE    S  N                                                000          00
                           WOODBURN UA      37.14   OREGON WAY          04          0               N DAY  INJ           PSNGR CAR        01 DRVR NONE  80 M OR-Y      000        000          00
No      45  9  3.38  -122 52 23.90         014000100S00            1                                                                                   OR<25
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140 HILLSBORO-SILVERTON

Country Club Rd / Oregon Way & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E D / D R A E L C / U G S / R C H L / S O R K / W	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0	TURN-L											
													PRVTE	N E									000		00
													PSNGR CAR		01	DRVR	NONE	23	M	OR-Y OR<25		004,028	000		02
															02	PSNG	INJC	47	F			000	000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	1	0	1	0	2	0	1	0	1	0	1	0	0
NON-COLLISION	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	0	4	4	0	0	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	8	3	11	0	18	0	7	4	8	3	11	0	0
2015 TOTAL	0	10	7	17	0	21	0	13	4	14	3	17	0	0
YEAR: 2014														
REAR-END	0	1	3	4	0	1	0	3	1	3	1	4	0	0
TURNING MOVEMENTS	0	1	1	2	0	2	0	1	1	1	1	2	0	0
2014 TOTAL	0	2	4	6	0	3	0	4	2	4	2	6	0	0
YEAR: 2013														
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	2	2	4	0	3	0	4	0	3	1	4	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2013 TOTAL	0	4	2	6	0	6	0	5	1	4	2	6	0	0
YEAR: 2012														
ANGLE	0	1	1	2	0	1	0	1	1	0	2	2	0	0
BACKING	0	0	1	1	0	0	0	0	1	1	0	1	0	0
NON-COLLISION	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	3	4	7	0	3	0	4	3	5	2	7	0	0
YEAR: 2011														
REAR-END	0	1	4	5	0	5	0	3	1	5	0	5	0	0
TURNING MOVEMENTS	0	2	4	6	0	2	3	5	1	4	2	6	0	0
2011 TOTAL	0	3	8	11	0	7	3	8	2	9	2	11	0	0
FINAL TOTAL	0	22	25	47	0	40	3	34	12	36	11	47	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E D / E A L C / U C G S / R S H L / W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02454	N N N	06/30/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		Tue 10A	WOODBURN	MN 0	EVERGREEN RD	UN		TRF SIGNAL	N	DRY	REAR		PRVTE	UN UN									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		026	000		29
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															UNK					
												02	NONE 0	STOP											
													PRVTE	UN UN									011		00
													PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																				OR<25					
04428	N N N N N	12/09/2013	MARION	1 14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	TURN-L											02
CITY		Mon 3P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	DRY	PED		PRVTE	N E									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		029	000		02
No		*45 9 3.52 -122 52 32.53*		014000100S00	1															OR<25					
														STRGHT	01	PED	INJA	28	M		01	000	035		00
														N S											
02656	N N N	08/16/2011	MARION	1 14		INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE		Tue 4P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	UNK	REAR		PRVTE	E W									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y		026	000		07
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	E W									011		00
													PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		000	000		00
																				OR<25					
03164	N N N	09/09/2011	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Fri 4P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	F	OR-Y		026	000		07
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	E W									011		00
													PSNGR CAR		01	DRVR	INJC	32	F	OTH-Y		000	000		00
																				OR<25					
															02	PSNG	INJC	12	M			000	000		00
															03	PSNG	INJC	09	M			000	000		00
															04	PSNG	INJC	05	F			000	000		00
															05	PSNG	INJC	06	M			000	000		00
01171	N N N N N	04/05/2012	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	07
CITY		Thu 5P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									022		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		026	000		07
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR>25					
												02	NONE 0	STOP											
													PRVTE	E W									011		00
													PSNGR CAR		01	DRVR	INJC	40	F	OR-Y		000	000		00
																				OR<25					

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140 HILLSBORO-SILVERTON                              Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
                                                          January 1, 2011 through December 31, 2015

        S   D
        P   R S W                                                                                                  SPCL USE
SER#    E A U C O  DATE         COUNTY              RD#  FC   CONN #               RD CHAR INT-TYP   INT-REL OFFRD WTHR  CRASH TYP  TRLR QTY  MOVE                  A  S
INVEST  E L G H R  DAY/TIME     CITY                CMPT/MLG FIRST  STREET         DIRECT  (MEDIAN)  TRAF-   RNDBT SURF  COLL TYP   OWNER     FROM      PRTC INJ    G  E  LICNS PED
UNLOC?  D C S L K  LAT/LONG     URBAN AREA          MILEPNT  SECOND STREET         LOCTN   LEGS      CNTL    DRVWY LIGHT SVRTY   V# VEH TYPE  TO     P# TYPE SVRTY E  X  RES   LOC  ERROR     ACTN EVENT   CAUSE
                                                    LRS      INTERSECTION SEQ#             (#LANES)

                                                                                                                03 NONE    0 STRGHT
                                                                                                                   PRVTE     E  W                                                 000           00
                                                                                                                  PSNGR CAR         01 DRVR NONE  19 F OR-Y      026        000           07
                                                                                                                                                       OR<25
                                                                                                                                    02 PSNG NO<5  01 M           000        000           00

                                                                                                                04 NONE    0 STOP
                                                                                                                   PRVTE     E  W                                                 011  013      00
                                                                                                                  PSNGR CAR         01 DRVR NONE  30 F OR-Y      000        000           00
                                                                                                                                                       OR<25
                                                                                                                                    02 PSNG NO<5  01 M           000        000           00

02253  N N N N N 07/11/2012 MARION          1    14                      INTER     CROSS  N           N CLR   OVERTURN  01 NONE    0 STOP                                                       07
CITY             Wed    7A  WOODBURN        MN    0   EVERGREEN RD       E                TRF SIGNAL  N DRY   NCOL          PRVTE     W  E                                           011           00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY  06          0                N DAY   PDO           MTRCYCLE          01 DRVR NONE  48 M OR-Y      043        000           07
No      45  9  3.52  -122 52 32.54          014000100S00               1                                                                                 OR<25

04185  N N N     11/26/2013 MARION          1    14                      INTER     CROSS  N           N CLR   S-1STOP   01 NONE    0 STRGHT                                                     07
NONE             Tue    2P  WOODBURN        MN    0   EVERGREEN RD       E                TRF SIGNAL  N DRY   REAR          PRVTE     E  W                                           000           00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY  06          0                N DAY   INJ           PSNGR CAR         01 DRVR NONE  20 F OR-Y      026        000           07
No      45  9  3.52  -122 52 32.53          014000100S00               1                                                                                 OR<25

                                                                                                                02 NONE    0 STOP
                                                                                                                   PRVTE     E  W                                                 011           00
                                                                                                                  PSNGR CAR         01 DRVR INJA  51 M OR-Y      000        000           00
                                                                                                                                                       OR<25
                                                                                                                                    02 PSNG INJC  73 M           000        000           00

04540  N N N N N 12/16/2014 MARION          1    14                      INTER     CROSS  N           N CLD   S-1STOP   01 NONE    0 STRGHT                                                 116   27,07
CITY             Tue    10P WOODBURN        MN    0   EVERGREEN RD       E                TRF SIGNAL  N DRY   REAR          PRVTE     E  W                                           000           00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY  06          0                N DARK  PDO           PSNGR CAR         01 DRVR NONE  26 M OR-Y      016,026    038  116   27,07
No      45  9  3.52  -122 52 32.54          014000100S00               1                                                                                 OR<25

                                                                                                                02 NONE    0 STOP
                                                                                                                   PRVTE     E  W                                                 011           00
                                                                                                                  PSNGR CAR         01 DRVR NONE  54 M OR-Y      000        000           00
                                                                                                                                                       OR<25

02946  N N N     08/19/2011 MARION          1    14                      INTER     3-LEG  N           N CLR   S-1STOP   01 NONE    0 STRGHT                                                     07
NONE             Fri    3P  WOODBURN        MN    0   EVERGREEN RD       W                TRF SIGNAL  N DRY   REAR          PRVTE     W  E                                           000           00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY  06          0                N DAY   PDO           PSNGR CAR         01 DRVR NONE  43 F OR-Y      026        000           07
No      45  9  3.52  -122 52 32.54          014000100S00               1                                                                                 OR>25

                                                                                                                02 NONE    0 STOP
                                                                                                                   PRVTE     W  E                                                 011           00
                                                                                                                  PSNGR CAR         01 DRVR NONE  46 F OR-Y      000        000           00
                                                                                                                                                       OR>25

03651  N N N     10/30/2011 MARION          1    14                      INTER     3-LEG  N           N CLD   S-1STOP   01 NONE    0 STRGHT                                                     07
NONE             Sun    2P  WOODBURN        MN    0   EVERGREEN RD       W                TRF SIGNAL  N WET   REAR          PRVTE     W  E                                           000           00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY  06          0                N DAY   PDO           PSNGR CAR         01 DRVR NONE  16 F OR-Y      026        000           07
No      45  9  3.52  -122 52 32.54          014000100S00               1                                                                                 OR<25
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140 HILLSBORO-SILVERTON
Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

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      S  D
      P  R S W                                      RD#  FC   CONN #                          INT-TYP                                          SPCL USE
SER#  E A U C O  DATE        COUNTY                 CMPT/MLG  FIRST STREET       RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP   TRLR QTY  MOVE                   A S
INVEST E L G H R DAY/TIME    CITY                   MILEPNT   SECOND STREET      DIRECT   LEGS     TRAF-    RNDBT SURF  COLL TYP    OWNER     FROM       PRTC INJ    G E LICNS PED
UNLOC? D C S L K LAT/LONG    URBAN AREA             LRS       INTERSECTION SEQ#  LOCTN    (#LANES) CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE  TO      P# TYPE SVRTY E X RES   LOC ERROR      ACTN EVENT   CAUSE

                                                                                                                                02 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              011           00
                                                                                                                                  PSNGR CAR          01 DRVR NONE  00 M OR-Y      000         000           00
                                                                                                                                                                        OR>25

02364  N N N N N 07/19/2012 MARION            1    14                          INTER     CROSS  N            N CLR   S-1STOP   01 NONE   0 STRGHT                                                   013        07
CITY            Thu     7P  WOODBURN          MN    0   EVERGREEN RD           W                TRF SIGNAL   N DRY   REAR         PRVTE    W  E                                              000           00
                            WOODBURN UA        37.02    HILLSBORO-SILV HY      06          0                 N DAY   INJ         PSNGR CAR          01 DRVR NONE  61 M OR-Y      043,026     000           07
No      45  9  3.52  -122 52 32.54            014000100S00               1                                                                                     OR<25
                                                                                                                                                     02 PSNG INJA  60 F           000         000           00

                                                                                                                                02 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              011  013      00
                                                                                                                                  PSNGR CAR          01 DRVR NONE  24 M OR-Y      000         000           00
                                                                                                                                                                        OR<25

                                                                                                                                03 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              022           00
                                                                                                                                  PSNGR CAR          01 DRVR NONE  23 M OR-Y      000         000           00
                                                                                                                                                                        OR<25

02695  N N N     08/10/2013 MARION            1    14                          INTER     CROSS  N            N CLR   S-1STOP   01 NONE   0 STRGHT                                                   013        07
NONE            Sat     7A  WOODBURN          MN    0   EVERGREEN RD           W                TRF SIGNAL   N DRY   REAR         PRVTE    W  E                                              000           00
                            WOODBURN UA        37.02    HILLSBORO-SILV HY      06          0                 N DAY   PDO         PSNGR CAR          01 DRVR NONE  00 F UNK       026         000           07
No      45  9  3.52  -122 52 32.53            014000100S00               1                                                                                     OR<25

                                                                                                                                02 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              011  013      00
                                                                                                                                  PSNGR CAR          01 DRVR NONE  36 M OR-Y      000         000           00
                                                                                                                                                                        OR<25

                                                                                                                                03 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              022           00
                                                                                                                                  PSNGR CAR          01 DRVR NONE  27 M OR-Y      000         000           00
                                                                                                                                                                        OR<25

02823  N N N     08/21/2013 MARION            1    14                          INTER     CROSS  N            N CLR   S-1STOP   01 NONE   0 STRGHT                                                              07
NONE            Wed     5P  WOODBURN          MN    0   EVERGREEN RD           W                UNKNOWN      N DRY   REAR         PRVTE    W  E                                              000           00
                            WOODBURN UA        37.02    HILLSBORO-SILV HY      06          0                 N DAY   INJ         PSNGR CAR          01 DRVR NONE  23 F OR-Y      026         000           07
No      45  9  3.52  -122 52 32.53            014000100S00               1                                                                                     OR>25

                                                                                                                                02 NONE   0 STOP
                                                                                                                                   PRVTE    W  E                                              011           00
                                                                                                                                  PSNGR CAR          01 DRVR INJC  69 F OR-Y      000         000           00
                                                                                                                                                                        OR<25

00430  N N N     02/07/2014 MARION            1    14                          INTER     3-LEG  N            N SNOW  S-1STOP   01 NONE   0 STRGHT                                                              07
NONE            Fri     1P  WOODBURN          MN    0   EVERGREEN RD           W                TRF SIGNAL   N SNO   REAR         PRVTE    W  E                                              000           00
                            WOODBURN UA        37.02    HILLSBORO-SILV HY      06          0                 N DAY   INJ         PSNGR CAR          01 DRVR NONE  48 F OR-Y      026         000           07
No      45  9  3.52  -122 52 32.54            014000100S00               1                                                                                     OR<25
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140 HILLSBORO-SILVERTON Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

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      S  D
      P  R S W                                 RD#  FC   CONN #                                     INT-TYP                                             SPCL USE
SER#  E A U C O  DATE       COUNTY             CMPT/MLG  FIRST  STREET          RD CHAR  (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP       TRLR QTY  MOVE                        A  S
INVEST E L G H R DAY/TIME   CITY               MILEPNT   SECOND STREET          DIRECT     LEGS    TRAF-    RNDBT SURF  COLL TYP        OWNER     FROM       PRTC INJ       G  E  LICNS PED
UNLOC? D C S L K LAT/LONG   URBAN AREA         LRS       INTERSECTION SEQ#      LOCTN    (#LANES)  CNTL     DRVWY LIGHT SVRTY       V#  VEH TYPE  TO      P# TYPE SVRTY   E  X  RES   LOC ERROR        ACTN EVENT   CAUSE

                                                                                                                                   02 NONE    0  STOP
                                                                                                                                      PRVTE      W  E                                                     011          00
                                                                                                                                     PSNGR CAR          01 DRVR INJC   38 M  OR-Y       000           000          00
                                                                                                                                                                             OR<25

02287  N N N     07/10/2014 MARION             1    14                          INTER      CROSS   N            N CLR  S-1STOP     01 NONE    0  STRGHT                                                                07
NONE             Thu    8A  WOODBURN           MN    0   EVERGREEN RD           W                  TRF SIGNAL   N DRY  REAR           PRVTE      W  E                                                     000          00
                            WOODBURN UA         37.02    HILLSBORO-SILV HY      06           0                  N DAY  PDO           PSNGR CAR          01 DRVR NONE   00 F  OTH-Y      026           000          07
No      45  9  3.52  -122 52 32.54             014000100S00                1                                                                                                 OR<25

                                                                                                                                   02 NONE    0  STOP
                                                                                                                                      PRVTE      W  E                                                     012          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE   43 F  OR-Y       000           000          00
                                                                                                                                                                             OR<25

02960  N N N     08/05/2015 MARION             1    14                          INTER      CROSS   N            N CLR  S-1STOP     01 NONE    0  STRGHT                                                                29
NONE             Wed    5P  WOODBURN           MN    0   EVERGREEN RD           W                  TRF SIGNAL   N DRY  REAR           PRVTE      W  E                                                     000          00
                            WOODBURN UA         37.02    HILLSBORO-SILV HY      06           0                  N DAY  PDO           PSNGR CAR          01 DRVR NONE   00 F  OR-Y       026           000          29
No      45  9  3.52  -122 52 32.54             014000100S00                1                                                                                                 OR>25

                                                                                                                                   02 NONE    0  STOP
                                                                                                                                      PRVTE      W  E                                                     011          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE   61 F  OR-Y       000           000          00
                                                                                                                                                                             OR<25

03040  N N N N N 09/13/2011 MARION             1    14                          INTER      CROSS   N            N CLR  O-1 L-TURN  01 NONE    0  STRGHT                                                                04
CITY             Tue    5P  WOODBURN           MN    0   EVERGREEN RD           CN                 TRF SIGNAL   N DRY  TURN           PRVTE      N  S                                                     000          00
                            WOODBURN UA         37.02    HILLSBORO-SILV HY      01           0                  N DAY  INJ           PSNGR CAR          01 DRVR INJB   23 M  OTH-Y      020           000          04
No      45  9  3.52  -122 52 32.54             014000100S00                1                                                                                                 OR>25

                                                                                                                                   02 NONE    0  TURN-L
                                                                                                                                      PRVTE      S  W                                                     000          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE   45 M  OTH-Y      000           000          00
                                                                                                                                                                             N-RES

00386  N N N N N 02/03/2012 MARION             1    14                          INTER      CROSS   N            N CLR  ANGL-OTH    01 NONE    0  STRGHT                                                                04
CITY             Fri   10P  WOODBURN           MN    0   EVERGREEN RD           CN                 TRF SIGNAL   N DRY  ANGL           PRVTE      E  W                                                     000          00
                            WOODBURN UA         37.02    HILLSBORO-SILV HY      02           0                  N DLIT INJ           PSNGR CAR          01 DRVR NONE   18 M  OR-Y       000           000          00
No      45  9  3.52  -122 52 32.54             014000100S00                1                                                                                                 OR<25

                                                                                                                                   02 NONE    0  STRGHT
                                                                                                                                      PRVTE      S  N                                                     000          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE   18 M  OR-Y       020           000          02
                                                                                                                                                                             OR<25
                                                                                                                                                        02 PSNG INJC   21 F             000           000          00

01910  N N N     06/09/2012 MARION             1    14                          INTER      3-LEG   N            N CLR  S-OTHER     01 NONE    0  TURN-L                                                                08
NONE             Sat    8P  WOODBURN           MN    0   EVERGREEN RD           CN                 L-GRN-SIG    N DRY  TURN           PRVTE      E  S                                                     000          00
                            WOODBURN UA         37.02    HILLSBORO-SILV HY      02           0                  N DAY  PDO           PSNGR CAR          01 DRVR NONE   39 F  OR-Y       006           000          08
No      45  9  3.52  -122 52 32.54             014000100S00                1                                                                                                 UNK
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140 HILLSBORO-SILVERTON

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

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      S   D
      P   R S W                                       RD#  FC   CONN #                                     INT-TYP                                           SPCL USE
SER#   E A U C O  DATE          COUNTY               CMPT/MLG  FIRST  STREET          RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP      TRLR QTY  MOVE                       A  S
INVEST E L G H R  DAY/TIME      CITY                 MILEPNT   SECOND STREET          DIRECT   LEGS     TRAF-    RNDBT SURF  COLL TYP       OWNER     FROM      PRTC INJ       G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG      URBAN AREA           LRS       INTERSECTION SEQ#      LOCTN    (#LANES) CNTL     DRVWY LIGHT SVRTY      V#  VEH TYPE  TO     P# TYPE SVRTY   E  X  RES   LOC ERROR     ACTN EVENT  CAUSE

                                                                                                                                    02 NONE    0 TURN-L
                                                                                                                                       PRVTE     E  S                                                000         00
                                                                                                                                       PSNGR CAR         01 DRVR NONE  17 F  OR-Y       000      000         00
                                                                                                                                                                             OR<25

01776  N N N      05/16/2015 MARION               1    14                          INTER     CROSS  N              N CLR   ANGL-OTH  01 NONE    0 STRGHT                                                          04
CITY              Sat    9A  WOODBURN             MN    0   EVERGREEN RD           CN               TRF SIGNAL    N DRY   ANGL          PRVTE     S  N                                                000         00
                             WOODBURN UA           37.02    HILLSBORO-SILV HY      02          0                  N DAY   INJ          PSNGR CAR         01 DRVR INJC  42 M  OR-Y       000      000         00
No      45  9  3.52  -122 52 32.54                 014000100S00              1                                                                                                 OR<25

                                                                                                                                    02 NONE    0 STRGHT
                                                                                                                                       PRVTE     E  W                                                000         00
                                                                                                                                       PSNGR CAR         01 DRVR INJC  83 M  OR-Y       020      000         04
                                                                                                                                                                             OR<25

02012  N N N    Y 06/05/2015 MARION               1    14                          INTER     CROSS  N              N CLR   O-1 L-TURN 01 NONE    0 STRGHT                                                        02
CITY              Fri   12P  WOODBURN             MN    0   EVERGREEN RD           CN               TRF SIGNAL    N DRY   TURN          PRVTE     E  W                                                000         00
                             WOODBURN UA           37.02    HILLSBORO-SILV HY      02          0                  N DAY   INJ          PSNGR CAR         01 DRVR NONE  43 M  OTH-Y      000      000         00
No      45  9  3.52  -122 52 32.54                 014000100S00              1                                                                                                 N-RES

                                                                                                                                    02 NONE    0 TURN-L
                                                                                                                                       PRVTE     W  N                                                000         00
                                                                                                                                       PSNGR CAR         01 DRVR INJC  83 F  OR-Y       028,004  000         02
                                                                                                                                                                             OR<25

02934  N N N N N 08/04/2015 MARION                1    14                          INTER     CROSS  N              N CLR   O-1 L-TURN 01 NONE    0 STRGHT                                                        02
CITY              Tue   11P  WOODBURN             MN    0   EVERGREEN RD           CN               TRF SIGNAL    N DRY   TURN          PRVTE     E  W                                                000         00
                             WOODBURN UA           37.02    HILLSBORO-SILV HY      02          0                  N DLIT  INJ          PSNGR CAR         01 DRVR INJC  60 F  OR-Y       000      000         00
No      45  9  3.52  -122 52 32.54                 014000100S00              1                                                                                                 OR<25

                                                                                                                                    02 NONE    0 TURN-L
                                                                                                                                       PRVTE     W  N                                                000         00
                                                                                                                                       PSNGR CAR         01 DRVR INJC  30 M  OR-Y       028,004  000         02
                                                                                                                                                                             OR<25

03313  N N N N N 09/01/2015 MARION                1    14                          INTER     CROSS  N              N CLR   O-1 L-TURN 01 NONE    0 STRGHT                                                   087  02
CITY              Tue    4P  WOODBURN             MN    0   EVERGREEN RD           CN               TRF SIGNAL    N DRY   TURN          PRVTE     E  W                                                000  087    00
                             WOODBURN UA           37.02    HILLSBORO-SILV HY      02          0                  N DAY   INJ          PSNGR CAR         01 DRVR NONE  51 M  OR-Y       000      000         00
No      45  9  3.52  -122 52 32.54                 014000100S00              1                                                                                                 OR<25

                                                                                                                                    02 NONE    0 TURN-L
                                                                                                                                       PRVTE     W  N                                                000  087    00
                                                                                                                                       PSNGR CAR         01 DRVR INJB  84 F  OR-Y       028,004  000         02
                                                                                                                                                                             OR<25

04302  N N N    Y 11/04/2015 MARION               1    14                          INTER     CROSS  N              N CLR   O-1 L-TURN 01 NONE    0 U-TURN                                                        02
CITY              Wed    3P  WOODBURN             MN    0   EVERGREEN RD           CN               TRF SIGNAL    N DRY   TURN          PRVTE     W  W                                                000         00
                             WOODBURN UA           37.02    HILLSBORO-SILV HY      02          0                  N DAY   PDO          PSNGR CAR         01 DRVR NONE  20 M  OR-Y       028      000         02
No      45  9  3.52  -122 52 32.54                 014000100S00              1                                                                                                 OR>25
```

140 HILLSBORO-SILVERTON

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
      S   D
      P   R S W                                 RD#  FC   CONN #                              INT-TYP                                      SPCL USE
SER#  E A U C O  DATE          COUNTY           CMPT/MLG  FIRST  STREET         RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP       TRLR QTY  MOVE                    A  S
INVEST E L G H R DAY/TIME      CITY             MILEPNT   SECOND STREET         DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP        OWNER     FROM       PRTC  INJ    G  E  LICNS PED
UNLOC? D C S L K LAT/LONG      URBAN AREA       LRS       INTERSECTION SEQ#     LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY      V#  VEH TYPE  TO      P#  TYPE  SVRTY  E  X  RES   LOC  ERROR      ACTN EVENT   CAUSE

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     E  W                                                   000          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  74 M OR-Y        000         000          00
                                                                                                                                                                           OR<25

00448  N N N     02/12/2011 MARION          1    14                        INTER     CROSS  N           N CLR   S-1TURN    01 NONE    1 TURN-R                                                                 08
NO RPT           Sat     8P  WOODBURN        MN    0   EVERGREEN RD         CN                TRF SIGNAL  N DRY   TURN          PRVTE     W  S                                                   000          00
                             WOODBURN UA     37.02    HILLSBORO-SILV HY     03         0                  N DLIT  INJ          SEMI TOW          01 DRVR NONE  24 M OTH-Y       006         000          08
No      45  9  3.52  -122 52 32.54           014000100S00              1                                                                                           N-RES

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     W  E                                                   000          00
                                                                                                                                     PSNGR CAR          01 DRVR INJB  24 M OR-Y        000         000          00
                                                                                                                                                                           OR<25

00748  N N N N N 03/08/2011 MARION          1    14                        INTER     CROSS  N           N CLR   S-1TURN    01 NONE    1 TURN-R                                                                 27,06
CITY             Tue     6P  WOODBURN        MN    0   EVERGREEN RD         CN                TRF SIGNAL  N DRY   TURN          PRVTE     W  S                                                   000          00
                             WOODBURN UA     37.02    HILLSBORO-SILV HY     03         0                  N DUSK  PDO          SEMI TOW          01 DRVR NONE  57 M OTH-Y       000         000          00
No      45  9  3.52  -122 52 32.54           014000100S00              1                                                                                           N-RES

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     W  E                                                   031          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  24 F OR-Y        016,031     000          27,06
                                                                                                                                                                           OR<25
                                                                                                                                                        02 PSNG NO<5  01 M             000         000          00
                                                                                                                                                        03 PSNG NO<5  04 F             000         000          00

02649  N N N     08/15/2011 MARION          1    14                        INTER     3-LEG  N           N CLR   O-1 L-TURN 01 NONE    0 STRGHT                                                                 04
CITY             Mon     7P  WOODBURN        MN    0   EVERGREEN RD         CN                TRF SIGNAL  N DRY   TURN          PRVTE     W  E                                                   000          00
                             WOODBURN UA     37.02    HILLSBORO-SILV HY     03         0                  N DAY   PDO          PSNGR CAR          01 DRVR NONE  29 M OR-Y        000         000          00
No      45  9  3.52  -122 52 32.54           014000100S00              1                                                                                           OR>25

                                                                                                                                   02 NONE    0 TURN-L
                                                                                                                                      PRVTE     E  S                                                   000          00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  94 M OR-Y        004,020     000          04
                                                                                                                                                                           OR<25

00633  N N N N N 02/28/2013 MARION          1    14                        INTER     CROSS  N           N CLD   O-1 L-TURN 01 NONE    0 STRGHT                                                                 02
CITY             Thu     8P  WOODBURN        MN    0   EVERGREEN RD         CN                TRF SIGNAL  N WET   TURN          PRVTE     W  E                                                   000          00
                             WOODBURN UA     37.02    HILLSBORO-SILV HY     03         0                  N DLIT  INJ          PSNGR CAR          01 DRVR INJC  41 F OR-Y        000         000          00
No      45  9  3.52  -122 52 32.53           014000100S00              1                                                                                           OR<25

                                                                                                                                   02 NONE    0 TURN-L
                                                                                                                                      PRVTE     E  S                                                   000          00
                                                                                                                                     PSNGR CAR          01 DRVR INJC  62 M OTH-Y       004,028     000          02
                                                                                                                                                                           N-RES

00511  N N N   Y 02/13/2014 MARION          1    14                        INTER     3-LEG  N           N CLD   O-1 L-TURN 01 NONE    0 STRGHT                                                                 04
CITY             Thu     6P  WOODBURN        MN    0   EVERGREEN RD         CN                L-GRN-SIG   N WET   TURN          PRVTE     W  E                                                   000          00
                             WOODBURN UA     37.02    HILLSBORO-SILV HY     03         0                  N DLIT  INJ          PSNGR CAR          01 DRVR NONE  43 M NONE        000         000          00
No      45  9  3.52  -122 52 32.54           014000100S00              1                                                                                           OR<25
                                                                                                                                                        02 PSNG INJC  33 M             000         000          00
```

SER# INVEST UNLOC?	S D / P R S W / E A U C O / E L G H R / D C S L K	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0	TURN-L											
													PRVTE	E S									000		00
													PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		020	000		04
																				OR<25					
															02	PSNG	NO<5	04	F			000	000		00
															03	PSNG	NO<5	01	M			000	000		00
03889	N N N Y	11/01/2014	MARION	1 14		INTER	3-LEG	N	N	CLD	S-STRGHT	01	NONE 0	STRGHT											07
CITY		Sat 3P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		042	000		07
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
												02	NONE 0	STRGHT											
													PRVTE	W E									000		00
													PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		000	000		00
																				OR<25					
02576	N N N N N	07/08/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		Wed 11A	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		000	000		00
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
												02	NONE 0	TURN-L											
													PRVTE	E S									000		00
													PSNGR CAR		01	DRVR	INJB	41	F	OR-Y		028,004	000		02
																				OR<25					
03023	N N N	08/09/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		Sun 11P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		000	000		00
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
												02	NONE 0	TURN-L											
													PRVTE	E S									000		00
													PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		028,004	000		02
																				OR<25					
03582	N N N Y	09/19/2015	MARION	1 14		INTER	CROSS	N	N	CLR	NON-COLL	01	NONE 0	STRGHT										092,001	26
CITY		Sat 11A	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	NCOL		PRVTE	W E									007	092	26
			WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	58	M	OR-Y		000	000		26
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
03695	N N N Y	09/26/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		Sat 6P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000		00
			WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	31	M	OR-Y		000	000		00
No		*45 9 3.52 -122 52 32.54*		014000100S00	1															OR<25					
															02	PSNG	INJB	30	F			000	000		00
															03	PSNG	INJB	02	F			000	000		00
															04	PSNG	INJB	03	M			000	000		00
															05	PSNG	NO<5	01	M			000	000		00

140 HILLSBORO-SILVERTON

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

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      S  D
      P  R S W                               RD#  FC   CONN #                            INT-TYP                                      SPCL USE
SER#  E A U C O  DATE        COUNTY          CMPT/MLG  FIRST  STREET      RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY   MOVE                     A  S
INVEST E L G H R  DAY/TIME   CITY            MILEPNT   SECOND STREET      DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP     OWNER      FROM        PRTC INJ      G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG   URBAN AREA      LRS       INTERSECTION SEQ#  LOCTN   (#LANES) CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE   TO      P# TYPE SVRTY  E  X  RES   LOC ERROR      ACTN EVENT     CAUSE

                                                                                                                   02 NONE   0 TURN-L
                                                                                                                      PRVTE    E  S                                                     000            00
                                                                                                                     PSNGR CAR          01 DRVR INJC  58 M OR-Y       000           000            00
                                                                                                                                                              OR<25
                                                                                                                                        02 PSNG INJB  54 F            028           000            02

04378  N N N     11/07/2015 MARION          1   14                        INTER     CROSS  N          N CLD   O-1 L-TURN 01 NONE   0 STRGHT                                                        02
CITY             Sat     6P WOODBURN        MN    0   EVERGREEN RD        CN               TRF SIGNAL N WET   TURN          PRVTE    W  E                                                     000            00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY   03          0               N DLIT  INJ          PSNGR CAR          01 DRVR NONE  34 M OR-Y       000           000            00
No      45  9  3.52  -122 52 32.54          014000100S00              1                                                                                  OR<25
                                                                                                                                        02 PSNG INJC  26 M            000           000            00
                                                                                                                                        03 PSNG INJC  16 M            000           000            00

                                                                                                                   02 NONE   0 TURN-L
                                                                                                                      PRVTE    E  S                                                     000            00
                                                                                                                     PSNGR CAR          01 DRVR INJC  29 F OR-Y       028,004       000            02
                                                                                                                                                              OR<25
                                                                                                                                        02 PSNG INJC  05 M            000           000            00

04387  N N N     11/07/2015 MARION          1   14                        INTER     CROSS  N          N RAIN  O-1 L-TURN 01 NONE   0 STRGHT                                                        02
CITY             Sat     3P WOODBURN        MN    0   EVERGREEN RD        CN               TRF SIGNAL N WET   TURN          PRVTE    W  E                                                     000            00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY   03          0               N DAY   PDO          PSNGR CAR          01 DRVR NONE  62 F OR-Y       000           000            00
No      45  9  3.52  -122 52 32.54          014000100S00              1                                                                                  OR<25

                                                                                                                   02 NONE   0 TURN-L
                                                                                                                      PRVTE    E  S                                                     000            00
                                                                                                                     PSNGR CAR          01 DRVR NONE  20 F OR-Y       028,004       000            02
                                                                                                                                                              OR<25

04534  N N N     11/17/2015 MARION          1   14                        INTER     CROSS  N          N RAIN  O-1 L-TURN 01 NONE   0 STRGHT                                                        02
CITY             Tue    11A WOODBURN        MN    0   EVERGREEN RD        CN               TRF SIGNAL N WET   TURN          PRVTE    W  E                                                     000            00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY   03          0               N DAY   INJ          PSNGR CAR          01 DRVR INJC  45 M OR-Y       000           000            00
No      45  9  3.52  -122 52 32.54          014000100S00              1                                                                                  OR<25

                                                                                                                   02 NONE   0 TURN-L
                                                                                                                      PRVTE    E  S                                                     000            00
                                                                                                                     PSNGR CAR          01 DRVR NONE  60 F OR-Y       004,028       000            02
                                                                                                                                                              OR<25

05001  N N N     12/13/2015 MARION          1   14                        INTER     CROSS  N          N RAIN  O-1 L-TURN 01 NONE   0 TURN-L                                                        02
CITY             Sun     4P WOODBURN        MN    0   EVERGREEN RD        CN               TRF SIGNAL N WET   TURN          PRVTE    E  S                                                     000            00
                            WOODBURN UA      37.02    HILLSBORO-SILV HY   03          0               N DAY   INJ          PSNGR CAR          01 DRVR INJA  59 F OR-Y       028,004       000            02
No      45  9  3.52  -122 52 32.54          014000100S00              1                                                                                  OR<25

                                                                                                                   02 NONE   0 STRGHT
                                                                                                                      PRVTE    W  E                                                     000            00
                                                                                                                     PSNGR CAR          01 DRVR INJC  27 M NONE       000           000            00
                                                                                                                                                              OR<25
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140 HILLSBORO-SILVERTON

Evergreen Rd & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
       S  D
       P  R S W                                  RD#  FC   CONN #                           INT-TYP                                      SPCL USE
SER#   E A U C O  DATE         COUNTY            CMPT/MLG  FIRST  STREET      RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY   MOVE                        A  S
INVEST E L G H R  DAY/TIME     CITY              MILEPNT   SECOND STREET      DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER      FROM        PRTC  INJ      G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG     URBAN AREA        LRS       INTERSECTION SEQ#  LOCTN   (#LANES) CNTL     DRVWY LIGHT SVRTY     V#  VEH TYPE   TO      P#  TYPE  SVRTY    E  X  RES    LOC  ERROR    ACTN EVENT     CAUSE

01124  N N N N N  04/10/2011   MARION            1    14                      INTER     3-LEG   N            N CLD  ANGL-OTH  01  NONE    0  STRGHT                                                                 04
CITY              Sun   7A     WOODBURN          MN    0   EVERGREEN RD       CN                TRF SIGNAL   N WET  TURN          PRVTE      W  E                                                    000                00
                               WOODBURN UA        37.02    HILLSBORO-SILV HY  04          0                  N DAY  PDO           PSNGR CAR          01  DRVR  NONE    53 F  OR-Y         020      000                04
No      45  9  3.52  -122 52 32.54               014000100S00               1                                                                                      OR<25

                                                                                                                           02  NONE    0  TURN-L
                                                                                                                               PRVTE      S  W                                                    000                00
                                                                                                                               PSNGR CAR          01  DRVR  NONE    61 M  OR-Y         000      000                00
                                                                                                                                                                          OR<25

04063  N N N N N  11/30/2012   MARION            1    14                      INTER     CROSS   N            N RAIN ANGL-OTH  01  NONE    0  TURN-L                                                                 04
CITY              Fri   9P     WOODBURN          MN    0   EVERGREEN RD       CN                TRF SIGNAL   N WET  ANGL          PRVTE      S  W                                                    000                00
                               WOODBURN UA        37.02    HILLSBORO-SILV HY  04          0                  N DLIT PDO           PSNGR CAR          01  DRVR  NONE    28 F  OR-Y         000      000                00
No      45  9  3.52  -122 52 32.54               014000100S00               1                                                                                      OR>25

                                                                                                                           02  NONE    0  STRGHT
                                                                                                                               PRVTE      W  E                                                    000                00
                                                                                                                               PSNGR CAR          01  DRVR  NONE    21 F  OR-Y         020      000                04
                                                                                                                                                                          OR>25

00105  N N N      01/05/2013   MARION            1    14                      INTER     3-LEG   N            N CLR  S-1STOP   01  NONE    0  TURN-L                                                       004       07
NONE              Sat   7P     WOODBURN          MN    0   EVERGREEN RD       CN                TRF SIGNAL   N DRY  REAR          PRVTE      S  W                                                    000                00
                               WOODBURN UA        37.02    HILLSBORO-SILV HY  04          0                  N DLIT PDO           PSNGR CAR          01  DRVR  NONE    00 U  UNK          026      000                07
No      45  9  3.52  -122 52 32.53               014000100S00               1                                                                                      UNK

                                                                                                                           02  NONE    0  STOP
                                                                                                                               PRVTE      S  W                                                    013  004           00
                                                                                                                               PSNGR CAR          01  DRVR  NONE    25 M  OR-Y         000      000                00
                                                                                                                                                                          OR<25

02511  N N N      07/28/2014   MARION            1    14                      INTER     CROSS   N            N CLR  ANGL-OTH  01  NONE    0  TURN-R                                                                 02
CITY              Mon   11A    WOODBURN          MN    0   EVERGREEN RD       CN                TRF SIGNAL   N DRY  TURN          PRVTE      S  E                                                    000                00
                               WOODBURN UA        37.02    HILLSBORO-SILV HY  04          0                  N DAY  PDO           PSNGR CAR          01  DRVR  NONE    75 F  OR-Y         028      000                02
No      45  9  3.52  -122 52 32.54               014000100S00               1                                                                                      OR<25

                                                                                                                           02  NONE    0  STRGHT
                                                                                                                               PRVTE      W  E                                                    000                00
                                                                                                                               PSNGR CAR          01  DRVR  NONE    52 M  OR-Y         000      000                00
                                                                                                                                                                          OR<25
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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Garfield St / Young St & Front St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2014														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2014 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2013														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2013 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	1	1	2	0	0
2012 TOTAL	0	0	2	2	0	0	0	1	1	1	1	2	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	3	4	7	0	3	0	6	1	6	1	7	0	0

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Garfield St / Young St & Front St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03912	N	N	N			11/18/2012	16	FRONT ST	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-L											08
NO RPT						Sun 7P	0	GARFIELD ST	SE		STOP SIGN	N	WET	TURN		PRVTE	NE SE									000		00
No	45 8 32.17					-122 51 24.33		1	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	33	M	OTH-Y		002,007	000		08
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SE NW									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					
02533	N	N	N			07/28/2013	16	FRONT ST	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 0	TURN-L											03
NO RPT						Sun 5P	0	GARFIELD ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NW NE									000		00
No	45 8 32.17					-122 51 24.33		1	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	NONE		021	000		03
																							UNK					
															02	NONE 0	TURN-R											
																PRVTE	SE NE									000		00
																PSNGR CAR		01	DRVR	INJB	71	F	OR-Y		000	000		00
																							OR<25					
02324	N	N	N			07/20/2011	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT						Wed 6P	0	GARFIELD ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE SW									015		00
No	45 8 32.21					-122 51 24.29		1	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		028	000		02
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SE NW									000		00
																PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		000	000		00
																							OR<25					
02900	N	N	N	N	N	08/01/2015	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										091	02
CITY						Sat 4P	0	GARFIELD ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NW SE									000		00
No	45 8 32.16					-122 51 24.34		1	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	92	M	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	NE SW									000	091	00
																PSNGR CAR		01	DRVR	NONE	19	M	NONE		028	000		02
																							N-RES					
																		02	PSNG	INJA	23	M			000	000		00
01607	N	N	N	N	N	05/15/2014	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY						Thu 3P	0	YOUNG ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE SW									000		00
No	45 8 32.16					-122 51 24.34		1	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		028	000		02
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SE NW									000		00
																PSNGR CAR		01	DRVR	INJC	46	M	OR-Y		000	000		00
																							OR<25					
03447	N	N	N	N	N	09/10/2015	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										091	02
CITY						Thu 8A	0	YOUNG ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW NE									000		00
No	45 8 32.16					-122 51 24.34		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	15	F	NONE		028	000		02
																							OR<25					

CITY OF WOODBURN, MARION COUNTY

Garfield St / Young St & Front St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E D	A L C	D R U G S	S C H L	W O R K	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0	TURN-L											
																PRVTE	SE SW									000	091	00
																PSNGR CAR		01	DRVR	NONE	44	F	OR-Y		000	000		00
																							OR<25					
00794	N	N	N			03/02/2012	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NONE						Fri 4P	0	YOUNG ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW NE									000		00
No						*45 8 32.17 -122 51 24.33*		1	04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		021	000		03
																							OR<25					
															02	NONE 0	TURN-L											
																PRVTE	SE SW									000		00
																PSNGR CAR		01	DRVR	NONE	40	M	OR-Y		000	000		00
																							OR<25					

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

Gatch St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	1	1	1	0	0
2015 TOTAL	0	2	0	2	0	3	0	2	0	1	1	1	0	0
YEAR: 2014														
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	0	1	0	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	0	2	0	1	0	0
2014 TOTAL	0	1	2	3	0	1	0	2	0	2	1	1	0	0
YEAR: 2013														
ANGLE	0	0	2	2	0	0	0	2	0	1	1	1	0	0
2013 TOTAL	0	0	2	2	0	0	0	2	0	1	1	1	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	1	0	1
PEDESTRIAN	0	2	0	2	0	2	0	1	1	1	1	1	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	3	2	5	0	3	0	4	1	4	1	4	0	1
FINAL TOTAL	0	6	6	12	0	7	0	10	1	8	4	7	0	1

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Gatch St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E E D	A L C	D R U G S	S C H L	W O R K	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01430	N	Y	N	N	N	05/02/2014	17	GATCH ST	STRGHT		N	N	CLR	PRKD MV	01	NONE 0	STRGHT										32,05
CITY						Fri 10P	170	CLEVELAND ST	NE	(NONE)	NONE	N	DRY	SS-M		PRVTE	NE SW									000	00
No	*45 8 17.05*					*-122 50 58.29*		1	07			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		052,080	000	32,05
										(02)													OR<25				
															02	NONE 0	PRKD-P										
																PRVTE	SW NE									008	00
																PSNGR CAR											
04373	N	N	N			11/06/2015	17	GATCH ST	ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										02,17
CITY						Fri 12P	117	JOHNSON ST	NE	(NONE)	NONE	N	DRY	TURN		PRVTE	W NE									000	00
No	*45 8 28.40*					*-122 50 52.40*		1	08			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		028	028	02,17
										(02)													OR<25				
															02	NONE 0	STRGHT										
																PRVTE	NE SW									000	00
																PSNGR CAR		01	DRVR	INJC	62	M	OR-Y		000	000	00
																							OR<25				
01304	N	N	N	Y		04/22/2014	17	GATCH ST	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY						Tue 3P	0	JOHNSON ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE E									000	00
No	*45 8 27.06*					*-122 50 52.79*		1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	M	NONE		004,028	000	02
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	SW NE									000	00
																PSNGR CAR		01	DRVR	INJB	18	M	NONE		000	000	00
																							OR<25				
04220	N	N	N			11/23/2014	17	GATCH ST	ALLEY		N	N	UNK	S-1TURN	01	NONE 0	STRGHT										06
NONE						Sun 1P	216	LINCOLN ST	S	(NONE)	UNKNOWN	N	UNK	TURN		PRVTE	N S									000	00
No	*45 8 32.26*					*-122 50 52.07*		1	08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	76	M	OR-Y		032	000	06
										(02)													OR<25				
															02	NONE 0	TURN-L										
																PRVTE	N E									019	00
																PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		000	000	00
																							UNK				
04132	N	N	N	Y	N	11/21/2013	17	GATCH ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
CITY						Thu 5P	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	N S									000	00
No	*45 8 34.48*					*-122 50 52.53*		1	01	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	36	F	NONE		021	000	03
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	NE SW									000	00
																PSNGR CAR		01	DRVR	NONE	47	M	OR-Y		000	000	00
																							OR<25				
00662	N	N	N			02/23/2012	17	GATCH ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										02
NONE						Thu 7A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	S SW									000	00
No	*45 8 34.48*					*-122 50 52.53*		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		017,028	000	02
																							OR<25				

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Gatch St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0	STRGHT											
																PRVTE	SW NE									000		00
																PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		000	000		00
																							OR<25					
00634	N	N	N			02/19/2015	17	GATCH ST	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L											02
NONE						Thu 6A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	E S									000		00
No						*45 8 34.45 -122 50 52.52*		1	03	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	47	M	OR-Y		028,004	000		02
																							OR<25					
																		02	PSNG	INJC	00	U			000	000		00
															02	UNKN 0	STRGHT											
																UNKN	W E									000		00
																UNKNOWN		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					
04165	N	N	N	N	N	12/05/2012	16	GATCH ST	INTER	4-LEG	N	N	CLR	PED	01	NONE 0	STRGHT											02
CITY						Wed 5P	0	YOUNG ST	SE		UNKNOWN	N	DRY	PED		PRVTE	SE NW									000		00
No						*45 8 20.53 -122 50 55.94*		1	05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		029	000		02
																							OR<25					
																	UNK	01	PED	INJB	09	M		01	000	000		00
																	SW NE											
02202	N	N	N			07/06/2012	16	GATCH ST	INTER	4-LEG	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										040,058	10
NO RPT						Fri 5P	0	YOUNG ST	SE		UNKNOWN	N	DRY	FIX		PRVTE	SE NW									000	040,058	00
No						*45 8 20.53 -122 50 55.94*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y		080,081	000		10
																							OR<25					
01492	N	N	N	N	N	05/04/2012	17	GATCH ST	STRGHT		N	N	RAIN	PED	01	NONE 0	STRGHT											02,18,19
CITY						Fri 2P	125	YOUNG ST	SW	(NONE)	NONE	N	WET	PED		PRVTE	SW NE									000		00
No						*45 8 19.01 -122 50 56.72*		1	08			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	F	N-VAL		000	000		00
										(02)													OR<25					
																	STRGHT	01	PED	INJB	05	F		04	063,028	043		02,18,19
																	SE NW											
00396	N	N	N	N	N	02/03/2012	16	GATCH ST	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	STRGHT											07
CITY						Fri 8A	0	YOUNG ST	NW		NONE	N	DRY	REAR		PRVTE	NW SE									000		00
No						*45 8 20.53 -122 50 55.94*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		043,042	000		07
																							OR<25					
																		02	PSNG	INJC	25	M			000	000		00
															02	NONE 0	STRGHT											
																PRVTE	NW SE									006		00
																PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		000	000		00
																							OR<25					
04173	N	N	N			11/25/2013	16	GATCH ST	ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY						Mon 4P	357	YOUNG ST	NW	(NONE)	NONE	N	DRY	ANGL		PRVTE	NW SE									000		00
No						*45 8 22.30 -122 51 0.33*		1	08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		000	000		00
										(02)													OR>25					
															02	NONE 0	STRGHT											
																PRVTE	SW NE									018		00
																PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		028	000		02
																							OR<25					

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

Hardcastle Ave & Front St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	3	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	3	0	1	0	1	0	1	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	2	2	4	0	4	0	4	0	3	1	4	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Hardcastle Ave & Front St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S D / P R S W / E A U C O / E L G H R / D C S L K	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04535	N N N N N	12/15/2011	17	FRONT ST	INTER	3-LEG	N	N	CLD	TRAIN	01	NONE 0	TURN-L										015,017	14
CITY		Thu 10A	0	HARDCASTLE AVE	E		WW W/ GATE	N	DRY	ANGL		PRVTE	NE E									013	017	00
No	45 8 45.42	-122 51 7.99		1	05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	84	M	N-VAL		009,025	000		14
																			N-RES					
03189	N N N	09/21/2012	16	FRONT ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Fri 7A	0	HARDCASTLE AVE	SW		STOP SIGN	N	DRY	REAR		PRVTE	SW NE									000		00
No	45 8 45.41	-122 51 8.01		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	48	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SW NE									011		00
												PSNGR CAR		01	DRVR	INJC	34	F	OR-Y		000	000		00
																			OR<25					
														02	PSNG	INJC	14	M			000	000		00
														03	PSNG	INJC	11	F			000	000		00
01785	N N N	04/04/2014	16	FRONT ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE		Fri 8P	0	HARDCASTLE AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	E SW									015		00
No	45 8 45.24	-122 51 8.05		1	01	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		028	000		02
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	NE E									000		00
												PSNGR CAR		01	DRVR	NONE	30	M	OR-Y		000	000		00
																			OR<25					
01427	N N N	04/20/2015	16	FRONT ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY		Mon 8A	0	HARDCASTLE AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW NE									000		00
No	45 8 45.24	-122 51 8.05		1	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		028	000		02
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	E SW									000		00
												PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		000	000		00
																			OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Hardcastle Ave & OR 99E
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	0	1	0	1	0	0
2015 TOTAL	0	2	0	2	0	2	0	1	0	2	0	2	0	0
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	1	2	0	1	1	2	0	0
2014 TOTAL	0	0	3	3	0	0	1	3	0	2	1	3	0	0
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
BACKING	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2013 TOTAL	0	1	2	3	0	1	0	2	1	1	2	3	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	0	2	1	1	2	0	0
2012 TOTAL	0	3	0	3	0	5	0	1	2	2	1	3	0	0
YEAR: 2011														
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2011 TOTAL	0	2	1	3	0	2	0	2	1	3	0	3	0	0
FINAL TOTAL	0	8	6	14	0	10	1	9	4	10	4	14	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

081 PACIFIC HIGHWAY EAST

Hardcastle Ave & OR 99E

January 1, 2011 through December 31, 2015

```
       S   D
       P   R S W                                       RD#  FC   CONN #                        INT-TYP                                   SPCL USE
SER#   E A U C O  DATE       COUNTY                   CMPT/MLG  FIRST  STREET       RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP   TRLR QTY  MOVE                      A  S
INVEST E L G H R  DAY/TIME   CITY                     MILEPNT   SECOND STREET       DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP    OWNER     FROM       PRTC INJ       G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG   URBAN AREA               LRS       INTERSECTION SEQ#   LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY    V# VEH TYPE  TO      P# TYPE SVRTY  E  X  RES   LOC ERROR        ACTN EVENT      CAUSE

02654  N N N      08/15/2011 MARION                   1    14                       INTER     CROSS  N           N CLR   S-1STOP    01 NONE    0 STRGHT                                                             07
NONE              Mon    4P  WOODBURN                 MN    0    HARDCASTLE AVE     NE               TRF SIGNAL  N DRY   REAR          PRVTE     NE SW                                               000            00
                             WOODBURN UA               32.19     PACIFIC HY 99E     06          0                N DAY   INJ          PSNGR CAR          01 DRVR NONE  30 M OR-Y       026        000            07
No      45  8 43.03  -122 50 11.43                    008100100S00               1                                                                                     OR<25

                                                                                                                                  02 NONE    0 STOP
                                                                                                                                     PRVTE     NE SW                                               011            00
                                                                                                                                    PSNGR CAR          01 DRVR INJC  65 M OR-Y       000        000            00
                                                                                                                                                                          OR<25

03101  N N N      09/15/2012 MARION                   1    14                       INTER     CROSS  N           N CLR   S-1STOP    01 NONE    0 STRGHT                                                             07
NONE              Sat    2P  WOODBURN                 MN    0    HARDCASTLE AVE     NE               TRF SIGNAL  N DRY   REAR          PRVTE     NE SW                                               000            00
                             WOODBURN UA               32.19     PACIFIC HY 99E     06          0                N DAY   INJ          PSNGR CAR          01 DRVR NONE  61 M OR-Y       026        000            07
No      45  8 43.03  -122 50 11.43                    008100100S00               1                                                                                     OR>25

                                                                                                                                  02 NONE    0 STOP
                                                                                                                                     PRVTE     NE SW                                               011            00
                                                                                                                                    PSNGR CAR          01 DRVR INJC  31 F OR-Y       000        000            00
                                                                                                                                                                          OR>25
                                                                                                                                                       02 PSNG INJC  35 M            000        000            00
                                                                                                                                                       03 PSNG NO<5  04 M            000        000            00

00270  N N N      01/25/2013 MARION                   1    14                       INTER     CROSS  N           N CLR   O-1STOP    01 NONE    0 BACK                                                               10
NONE              Fri    6P  WOODBURN                 MN    0    HARDCASTLE AVE     NE               TRF SIGNAL  N DRY   BACK          PRVTE     SW NE                                               000            00
                             WOODBURN UA               32.19     PACIFIC HY 99E     06          0                N DLIT  PDO          PSNGR CAR          01 DRVR NONE  50 F OR-Y       011        000            10
No      45  8 43.03  -122 50 11.43                    008100100S00               1                                                                                     OR<25

                                                                                                                                  02 NONE    0 STOP
                                                                                                                                     PRVTE     NE SW                                               011            00
                                                                                                                                    PSNGR CAR          01 DRVR NONE  42 M OR-Y       000        000            00
                                                                                                                                                                          OR<25

02887  N N N N N  08/26/2013 MARION                   1    14                       INTER     CROSS  N           N RAIN  S-1STOP    01 NONE    0 STRGHT                                                             32
CITY              Mon    9P  WOODBURN                 MN    0    HARDCASTLE AVE     NE               TRF SIGNAL  N WET   REAR          PRVTE     NE SW                                               000            00
                             WOODBURN UA               32.19     PACIFIC HY 99E     06          0                N DLIT  INJ          PSNGR CAR          01 DRVR NONE  37 M SUSP       052,026    000            32
No      45  8 43.03  -122 50 11.43                    008100100S00               1                                                                                     OR<25

                                                                                                                                  02 NONE    0 STOP
                                                                                                                                     PRVTE     NE SW                                               011            00
                                                                                                                                    PSNGR CAR          01 DRVR INJC  50 F OR-Y       000        000            00
                                                                                                                                                                          OR<25

02443  N Y Y      07/29/2011 MARION                   1    14                       INTER     CROSS  N           N CLR   PED        01 NONE    0 STRGHT                                                             02,10
CITY              Fri    1P  WOODBURN                 MN    0    HARDCASTLE AVE     SW               TRF SIGNAL  N DRY   PED           PRVTE     S  N                                                000            00
                             WOODBURN UA               32.19     PACIFIC HY 99E     06          0                N DAY   INJ          PSNGR CAR          01 DRVR NONE  71 M UNK        029        000            02
No      45  8 43.03  -122 50 11.43                    008100100S00               1                                                                                     OR<25
                                                                                                                                                STRGHT 01 PED  INJA  06 F        01 000        035            00
                                                                                                                                                W  E
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081 PACIFIC HIGHWAY EAST

Hardcastle Ave & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S D / P R S W / E A U C O / E L G H R / D C S L K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A / G / E	S / E / X	LICNS / RES	PED / LOC	ERROR	ACTN EVENT	CAUSE
03196	N N N	08/17/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										17,29
CITY		Mon 5P	WOODBURN	MN 0	HARDCASTLE AVE	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000	00
			WOODBURN UA	32.19	PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		026	028	17,29
No		*45 8 43.03 -122 50 11.43*		008100100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	SW NE									011	00
													PSNGR CAR		01	DRVR	INJC	35	M	OTH-Y		000	000	00
																				OR<25				
04513	N N N	12/26/2011	MARION	1 14		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-R										02
NONE		Mon 12P	WOODBURN	MN 0	HARDCASTLE AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE W									016	00
			WOODBURN UA	32.19	PACIFIC HY 99E	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		028	000	02
No		*45 8 43.03 -122 50 11.43*		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	E W									000	00
													PSNGR CAR		01	DRVR	NONE	60	M	OR-Y		000	000	00
																				OR<25				
00345	N N N N N	01/29/2012	MARION	1 14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										04
STATE		Sun 2P	WOODBURN	MN 0	HARDCASTLE AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE SW									000	00
			WOODBURN UA	32.19	PACIFIC HY 99E	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		020	000	04
No		*45 8 43.03 -122 50 11.43*		008100100S00	1															OR<25				
												02	NONE 0	TURN-L										
													PRVTE	E SW									000	00
													PSNGR CAR		01	DRVR	NONE	31	F	OR-Y		000	000	00
																				OR>25				
															02	PSNG	INJC	55	F			000	000	00
04386	N N N	12/20/2012	MARION	1 14		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-R										08
NONE		Thu 7A	WOODBURN	MN 0	HARDCASTLE AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE W									000	00
			WOODBURN UA	32.19	PACIFIC HY 99E	01	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	48	F	OR-Y		097	000	00
No		*45 8 43.03 -122 50 11.43*		008100100S00	1															OR<25				
															02	PSNG	INJC	12	F			000	000	00
												02	NONE 0	TURN-L										
													UNKN	W NE									000	00
													PSNGR CAR		01	DRVR	NONE	00	U	UNK		097	000	00
																				UNK				
05280	N N N N N	12/30/2015	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		Wed 1P	WOODBURN	MN 0	HARDCASTLE AVE	CN		TRF SIGNAL	N	UNK	TURN		PRVTE	SW W									000	00
			WOODBURN UA	32.19	PACIFIC HY 99E	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	86	M	OR-Y		028,004	000	02
No		*45 8 43.03 -122 50 11.43*		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	NE SW									000	00
													PSNGR CAR		01	DRVR	INJC	34	M	OR-Y		000	000	00
																				OR<25				

081 PACIFIC HIGHWAY EAST

Hardcastle Ave & OR 99E
January 1, 2011 through December 31, 2015

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       S   D
       P   R S W                                RD#  FC   CONN #                        INT-TYP                                      SPCL USE
SER#   E A U C O  DATE          COUNTY          CMPT/MLG  FIRST  STREET       RD CHAR  (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                     A  S
INVEST E L G H R  DAY/TIME      CITY            MILEPNT   SECOND STREET       DIRECT    LEGS     TRAF-    RNDBT SURF  COLL TYP     OWNER     FROM       PRTC INJ      G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG      URBAN AREA      LRS       INTERSECTION SEQ#   LOCTN    (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE  TO      P# TYPE SVRTY  E  X  RES    LOC  ERROR          ACTN EVENT        CAUSE

00948  N N N N N  03/28/2013    MARION          1    14                       INTER     CROSS    N            N CLR  ANGL-OTH   01 NONE    0 STRGHT                                                                 04
CITY              Thu     9A    WOODBURN        MN    0   HARDCASTLE AVE      CN                 TRF SIGNAL   N DRY  ANGL          PRVTE     E  W                                                   000           00
                                WOODBURN UA      32.19    PACIFIC HY 99E      02          0                   N DAY  PDO           PSNGR CAR           01 DRVR NONE  43 M NONE         000           000           00
No       45  8 43.03  -122 50 11.43             008100100S00              1                                                                                          OR<25
                                                                                                                                                       02 PSNG NO<5  01 M              000           000           00
                                                                                                                                                       03 PSNG NO<5  01 F              000           000           00

                                                                                                                            02 NONE    0 STRGHT
                                                                                                                               PRVTE     SW NE                                                  000           00
                                                                                                                               PSNGR CAR           01 DRVR NONE  16 M OR-Y         020           000           04
                                                                                                                                                                     OR<25

03222  N N N      09/19/2014    MARION          1    14                       INTER     CROSS    N            N CLR  ANGL-OTH   01 NONE    0 STRGHT                                                                 04
NO RPT            Fri     1P    WOODBURN        MN    0   HARDCASTLE AVE      CN                 TRF SIGNAL   N DRY  ANGL          PRVTE     NE SW                                                  000           00
                                WOODBURN UA      32.19    PACIFIC HY 99E      03          0                   N DAY  PDO           PSNGR CAR           01 DRVR NONE  49 F OR-Y         097           000           00
No       45  8 43.03  -122 50 11.43             008100100S00              1                                                                                          OR<25

                                                                                                                            02 NONE    0 STRGHT
                                                                                                                               PRVTE     W  E                                                   000           00
                                                                                                                               PSNGR CAR           01 DRVR NONE  26 M OR-Y         097           000           00
                                                                                                                                                                     OR<25

00625  N N N N N  02/22/2014    MARION          1    14                       INTER     CROSS    N            N CLR  O-1 L-TURN 01 NONE    0 TURN-L                                                                 02
CITY              Sat     9P    WOODBURN        MN    0   HARDCASTLE AVE      CN                 FLASHBCN-A   N DRY  TURN          PRVTE     NE E                                                   000           00
                                WOODBURN UA      32.19    PACIFIC HY 99E      04          0                   N DLIT PDO           PSNGR CAR           01 DRVR NONE  17 F OR-Y         028           000           02
No       45  8 43.03  -122 50 11.43             008100100S00              1                                                                                          OR<25

                                                                                                                            02 NONE    0 STRGHT
                                                                                                                               PRVTE     SW NE                                                  000           00
                                                                                                                               PSNGR CAR           01 DRVR NONE  31 F OR-Y         000           000           00
                                                                                                                                                                     OR<25
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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Hayes St

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
FIXED / OTHER OBJECT	0	1	1	2	0	1	0	1	1	0	2	1	0	2
2015 TOTAL	0	1	1	2	0	1	0	1	1	0	2	1	0	2
YEAR: 2014														
ANGLE	0	1	0	1	0	1	0	1	0	0	1	1	0	0
REAR-END	0	0	2	2	0	0	0	1	0	2	0	1	0	0
TURNING MOVEMENTS	0	1	4	5	0	1	0	3	2	5	0	3	0	0
2014 TOTAL	0	2	6	8	0	2	0	5	2	7	1	5	0	0
YEAR: 2013														
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	1	0	0	0	1
REAR-END	0	0	2	2	0	0	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2013 TOTAL	0	2	3	5	0	2	0	5	0	5	0	4	0	1
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
PARKING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2012 TOTAL	0	0	2	2	0	0	0	2	0	2	0	1	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	0	1	1	0	1	0	0
2011 TOTAL	0	2	1	3	0	3	0	1	1	3	0	3	0	0
FINAL TOTAL	0	7	13	20	0	8	0	14	4	17	3	14	0	3

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

CITY OF WOODBURN, MARION COUNTY

Hayes St

January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E E D / A L C / D R U G S / S C H / W O R K	DATE / DAY/TIME / LAT/LONG	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00394	N N N	02/03/2012	17	CASCADE DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NONE		Fri 3P	0	W HAYES ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	E W									000		00
No		*45 8 46.35 -122 52 14.94*		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	87	M	OR-Y		097	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	E W									000		00
												PSNGR CAR		01	DRVR	NONE	75	F	OR-Y		097	000		00
																			OR<25					
00153	N N N	01/16/2011	17	EVERGREEN RD	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											03
CITY		Sun 1P	0	HAYES ST	CN		STOP SIGN	N	WET	TURN		PRVTE	S N									000		00
No		*45 8 50.71 -122 52 32.62*		1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	42	F	OTH-Y		021	000		03
																			N-RES					
											02	NONE 0	TURN-L											
												PRVTE	N E									015		00
												PSNGR CAR		01	DRVR	INJC	87	F	OR-Y		000	000		00
																			OR<25					
														02	PSNG	INJB	87	F			000	000		00
01321	N N N	04/16/2014	17	EVERGREEN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NO RPT		Wed 9P	0	HAYES ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	S N									000		00
No		*45 8 50.61 -122 52 32.71*		1	04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	00	U	UNK		021	000		03
																			UNK					
											02	NONE 0	STRGHT											
												PRVTE	W E									000		00
												PSNGR CAR		01	DRVR	INJB	43	F	OR-Y		000	000		00
																			OR<25					
00676	N N N	02/03/2011	19	HAYES ST	INTER	CROSS	N	N	UNK	ANGL-OTH	01	NONE 0	STRGHT											02
NONE		Thu 3P	0	5TH ST	CN		STOP SIGN	N	UNK	ANGL		PRVTE	SE NW									000		00
No		*45 8 42.64 -122 51 35.76*		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	74	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	SW NE									015		00
												PSNGR CAR		01	DRVR	NONE	54	F	OR-Y		028	000		02
																			OR<25					
00097	N N N N N	01/11/2015	17	HAYES ST	STRGHT		N	Y	FOG	FIX OBJ	01	NONE 0	STRGHT										091	17
CITY		Sun 2A	48	CLACKAMAS CIR	SE	(NONE)	NONE	N	WET	FIX		PRVTE	NW SE									000	091	00
No		*45 8 47.64 -122 52 22.94*		1	05			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	31	M	OR-Y		081	028		17
						(02)													OR<25					
00201	N N N Y	01/20/2014	17	HAYES ST	ALLEY		N	N	CLR	S-OTHER	01	NONE 0	TURN-L											29
NO RPT		Mon 4P	224	COZY WAY	W	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	E S									019		00
No		*45 8 46.17 -122 52 1.89*		1	07			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	22	F	OR-Y		019,042	000		29
						(02)													OR<25					
											02	NONE 0	TURN-L											
												PRVTE	E S									019		00
												PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		000	000		00
																			OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Hayes St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00785	N	N	N			03/04/2012	16	HAYES ST	STRGHT		N	N	CLR	PRKD MV	01	NONE 0	PARKNG											02
NONE						Sun 11A	69	FRONT ST	NE	(NONE)	UNKNOWN	N	DRY	PARK		PRVTE	SW NE									008		00
No						*45 8 34.58 -122 51 21.35*		1	07			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		018,028	000		02
										(02)													OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SW NE									000		00
																PSNGR CAR		01	DRVR	NONE	53	M	OR-Y		000	000		00
																							OR<25					
03141	N	N	N			09/14/2013	16	HAYES ST	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY						Sat 12P	0	SETTLEMIER AVE	NE		NONE	N	DRY	REAR		PRVTE	NE SW									000		00
No						*45 8 44.61 -122 51 39.01*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE SW									012		00
																PSNGR CAR		01	DRVR	NONE	47	F	OR-Y		000	000		00
																							OR<25					
00871	N	N	N	N	N	03/17/2014	16	HAYES ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						Mon 5P	0	SETTLEMIER AVE	NE		STOP SIGN	N	DRY	REAR		PRVTE	NE SW									000		00
No						*45 8 44.63 -122 51 38.96*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE SW									012		00
																PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	NO<5	01	M			000	000		00
02138	N	N	N			06/28/2013	16	HAYES ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Fri 3P	0	SETTLEMIER AVE	SW		UNKNOWN	N	DRY	REAR		PRVTE	SW NE									000		00
No						*45 8 45.75 -122 51 38.62*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	40	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SW NE									012		00
																PSNGR CAR		01	DRVR	NONE	22	F	OR-Y		000	000		00
																							OR<25					
00416	Y	N	N	N	N	02/06/2014	16	HAYES ST	INTER	3-LEG	N	N	SNOW	ANGL-STP	01	NONE 0	TURN-R										124	01
CITY						Thu 4P	0	SETTLEMIER AVE	NW		STOP SIGN	N	SNO	TURN		PRVTE	NE NW									000	124	00
No						*45 8 45.72 -122 51 38.66*		2	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		047,080	017		01
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NW SE									011		00
																PSNGR CAR		01	DRVR	NONE	47	F	OR-Y		000	000		00
																							OR<25					
01186	N	N	N	Y		04/13/2014	16	HAYES ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY						Sun 6P	0	SETTLEMIER AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE SW									000		00
No						*45 8 44.63 -122 51 38.96*		1	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		000	000		00
																							OR<25					

CITY OF WOODBURN, MARION COUNTY

Hayes St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															02	NONE 0	TURN-L										
																PRVTE	SW NW									000	00
																PSNGR CAR		01	DRVR	NONE	22	F	N-VAL		004,028	000	02
																							OR<25				
03655	N	N	N	Y		10/17/2014	16	HAYES ST	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY						Fri 5P	0	SETTLEMIER AVE	CN		STOP SIGN	N	WET	TURN		PRVTE	NW NE									000	00
No						45 8 45.72 -122 51 38.66		1	02	1		Y	DAY	PDO		PSNGR CAR		01	DRVR	NONE	33	F	NONE		000	000	00
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	SE SW									018	00
																PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		028	000	02
																							OR<25				
																		02	PSNG	NO<5	01	M			000	000	00
01675	N	N	N			05/25/2011	16	HAYES ST	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
CITY						Wed 5P	0	SETTLEMIER AVE	CN		UNKNOWN	N	DRY	REAR		PRVTE	NE SW									000	00
No						45 8 45.78 -122 51 38.61		1	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NE SW									011	00
																PSNGR CAR		01	DRVR	INJC	52	F	OR-Y		000	000	00
																							OR<25				
03105	N	N	N			09/08/2014	17	HAYES ST	STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Mon 7A	78	SMITH DR	W	(NONE)	UNKNOWN	N	UNK	REAR		PRVTE	W E									000	00
No						45 8 46.00 -122 51 54.26		1	08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		026	000	07
										(02)													OR<25				
															02	UNKN 0	STOP										
																UNKN	W E									011	00
																UNKNOWN		01	DRVR	NONE	00	U	UNK		000	000	00
																							UNK				
03309	N	N	N			09/25/2013	17	HAYES ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										02
NO RPT						Wed 6P	0	SMITH DR	CN		STOP SIGN	N	DRY	TURN		PRVTE	S W									015	00
No						45 8 45.99 -122 51 52.77		1	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		028	000	02
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	E S									000	00
																PSNGR CAR		01	DRVR	INJB	53	F	OTH-Y		000	000	00
																							N-RES				
93317	N	N	N			09/26/2013	17	HAYES ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
CITY						Thu 6P	0	SMITH DR	CN		STOP SIGN	N	DRY	TURN		PRVTE	S N									015	00
No						45 8 45.99 -122 51 52.77		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		028	000	02
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	E S									000	00
																PSNGR CAR		01	DRVR	NONE	53	F	OTH-Y		000	000	00
																							N-RES				

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Hayes St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E A U C O / D R S W / E L G H R / D C S L K	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01934	N N N Y	06/11/2014	17	W HAYES ST	ALLEY		N	N	CLR	S-1TURN	01	NONE 0	STRGHT											06
CITY		Wed 2P	482	CASCADE DR	E	(NONE)	NONE	N	DRY	TURN		PRVTE	E W									000		00
No		45 8 46.17 -122 52 8.09		1	05			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y		032	000		06
						(02)													OR<25					
											02	NONE 0	TURN-L											
												PRVTE	E S									019		00
												OTHER		01	DRVR	NONE	47	M	OR-Y		000	000		00
																			OR<25					
00639	N N N	02/20/2015	19	W HAYES ST	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										062	16
CITY		Fri 2A	0	W HARVARD DR	N		STOP SIGN	N	DRY	FIX		PRVTE	UN UN									000	062	00
No		45 8 50.64 -122 52 44.37		1	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	30	F	EXP		081	025		16
																			OR<25					
03646	N N N N N	10/20/2013	19	W HAYES ST	STRGHT		N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										040,062	27
CITY		Sun 6P	300	W HARVARD DR	E	(NONE)	UNKNOWN	N	DRY	FIX		PRVTE	E W									000	040,062	00
No		45 8 50.77 -122 52 39.82		1	07			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	27	M	NONE		016,080,081	017		27
						(02)													OR<25					
														02	PSNG	NO<5	04	M			000	000		00

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

Lincoln St & Front St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2012 TOTAL	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR: 2011														
ANGLE	0	2	0	2	0	3	0	2	0	1	1	2	0	0
2011 TOTAL	0	2	0	2	0	3	0	2	0	1	1	2	0	0
FINAL TOTAL	0	3	2	5	0	4	0	4	1	3	2	5	0	0

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

CITY OF WOODBURN, MARION COUNTY

Lincoln St & Front St

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED ALC DRUGS SCHL WORK	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04338	N N N	12/18/2012	17	FRONT ST	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	10
CITY		Tue 7A	0	LINCOLN ST	SW		STOP SIGN	N	WET	REAR		PRVTE	SW NE									000		00
No	*45 8 37.96*	*-122 51 17.19*		1	06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OTH-Y		017,026	000		10
																			N-RES					
											02	NONE 0	STOP											
												PRVTE	SW NE									011	013	00
												PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		000	000		00
																			OR<25					
											03	NONE 0	STOP											
												PRVTE	SW NE									022		00
												PSNGR CAR		01	DRVR	INJC	51	M	OR-Y		000	000		00
																			OR>25					
02629	N Y N	08/13/2011	16	FRONT ST	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT										040,062,100	33,03
CITY		Sat 3A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE SW									000		00
No	*45 8 37.97*	*-122 51 17.17*		1	01	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		051,021	000		33,03
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	E W									000		00
												PSNGR CAR		01	DRVR	INJB	39	F	OR-Y		000	000		00
																			OR<25					
														02	PSNG	INJB	34	M			000	000		00
00113	N N N	01/11/2012	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT		Wed 11A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SW NE									000		00
No	*45 8 37.96*	*-122 51 17.19*		1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	NW SE									015		00
												PSNGR CAR		01	DRVR	NONE	63	M	OR-Y		028	000		02
																			OR<25					
01519	N N N N N	04/26/2015	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY		Sun 9A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NW SE									000		00
No	*45 8 37.92*	*-122 51 17.14*		1	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	NE SW									000		00
												PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		000	000		00
																			OR<25					
01818	N N N N N	06/06/2011	16	FRONT ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
CITY		Mon 9A	0	LINCOLN ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NW SE									015		00
No	*45 8 37.97*	*-122 51 17.17*		1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	SW NE									000		00
												PSNGR CAR		01	DRVR	INJC	21	F	OTH-Y		021	000		03
																			N-RES					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Lincoln St & OR 99E

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2014														
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2014 TOTAL	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR: 2013														
TURNING MOVEMENTS	0	1	2	3	0	2	0	1	2	2	1	3	0	0
2013 TOTAL	0	1	2	3	0	2	0	1	2	2	1	3	0	0
YEAR: 2012														
REAR-END	0	1	1	2	0	2	2	1	1	1	1	2	0	0
2012 TOTAL	0	1	1	2	0	2	2	1	1	1	1	2	0	0
YEAR: 2011														
REAR-END	0	1	1	2	0	2	0	2	0	2	0	2	0	0
2011 TOTAL	0	1	1	2	0	2	0	2	0	2	0	2	0	0
FINAL TOTAL	0	5	5	10	0	8	2	6	4	7	3	10	0	0

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

081 PACIFIC HIGHWAY EAST

Lincoln St & OR 99E
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S D P R S W E A U C O E L G H R D C S L K	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01142	N N N	04/11/2011	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE		Mon 8A	WOODBURN	MN 0	LINCOLN ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000	00
			WOODBURN UA	32.41	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		026	000	07
No		*45 8 33.48 -122 50 20.08*		008100100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	NE SW									011	00
													PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		000	000	00
																				OR>25				
04507	N N N	12/31/2012	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
CITY		Mon 11A	WOODBURN	MN 0	LINCOLN ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000	00
			WOODBURN UA	32.41	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		026	000	07
No		*45 8 33.48 -122 50 20.08*		008100100S00	1															OR<25				
												02	NONE 1	STOP										
													PRVTE	NE SW									011	00
													SEMI TOW		01	DRVR	NONE	31	M	OR-Y		000	000	00
																				OR<25				
03475	N N N N N	10/06/2014	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY		Mon 11A	WOODBURN	MN 0	LINCOLN ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000	00
			WOODBURN UA	32.41	PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	91	M	OR-Y		043,026	000	07
No		*45 8 33.48 -122 50 20.08*		008100100S00	1															OR<25				
															02	PSNG	INJC	58	F			000	000	00
												02	UNKN 0	STOP										
													UNKN	NE SW									011	00
													UNKNOWN		01	DRVR	NONE	00	U	UNK		000	000	00
																				UNK				
01354	N N N	04/28/2011	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE		Thu 5P	WOODBURN	MN 0	LINCOLN ST	SW		UNKNOWN	N	DRY	REAR		PRVTE	NE SW									000	00
			WOODBURN UA	32.41	PACIFIC HY 99E	05	0		Y	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	07
No		*45 8 33.48 -122 50 20.08*		008100100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	NE SW									011	00
													PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		000	000	00
																				OR<25				
															02	PSNG	INJC	04	M			000	000	00
03639	N N N N N	10/16/2014	MARION	1 14		INTER	CROSS	N	N	CLD	PED	01	NONE 0	TURN-L										02
CITY		Thu 7A	WOODBURN	MN 0	LINCOLN ST	SW		TRF SIGNAL	N	DRY	PED		PRVTE	E SW									000	00
			WOODBURN UA	32.41	PACIFIC HY 99E	05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	31	M	OTH-Y		029	000	02
No		*45 8 33.48 -122 50 20.08*		008100100S00	1															N-RES				
														STRGHT	01	PED	INJB	48	F		01	000	000	00
														W E										

081 PACIFIC HIGHWAY EAST

Lincoln St & OR 99E
January 1, 2011 through December 31, 2015

```
      S   D
      P   R S W                                       RD#  FC   CONN #                             INT-TYP                                        SPCL USE
SER#   E A U C O  DATE           COUNTY               CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP      TRLR QTY  MOVE                     A  S
INVEST E L G H R  DAY/TIME       CITY                 MILEPNT   SECOND STREET        DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP       OWNER     FROM         PRTC  INJ   G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG       URBAN AREA           LRS       INTERSECTION SEQ#    LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY      V# VEH TYPE   TO       P# TYPE  SVRTY E  X  RES   LOC  ERROR        ACTN EVENT      CAUSE

00295  N N N      01/24/2012  MARION              1    14                         INTER      CROSS  N           N RAIN  S-1STOP    01 NONE    0  STRGHT                                                                 07
NO RPT            Tue     6A  WOODBURN            MN    0   LINCOLN ST            SW                TRF SIGNAL  N WET   REAR          PRVTE       SW NE                                                 000              00
                              WOODBURN UA          32.41    PACIFIC HY 99E        06             0              N DLIT  INJ          PSNGR CAR             01 DRVR  INJC  67  F  OR-Y        026        000              07
No     45  8 33.48  -122 50 20.08                 008100100S00                1                                                                                           OR<25

                                                                                                                                   02 NONE    0  STOP
                                                                                                                                      PRVTE       SW NE                                                 011  013         00
                                                                                                                                     PSNGR CAR             01 DRVR  INJB  26  F  OR-Y        000        000              00
                                                                                                                                                                                  OR<25

                                                                                                                                   03 NONE    1  STOP
                                                                                                                                      PRVTE       SW NE                                                 022              00
                                                                                                                                     SEMI TOW              01 DRVR  NONE  61  M  OR-Y        000        000              00
                                                                                                                                                                                  OR>25

00560  N N N      02/22/2013  MARION              1    14                         INTER      CROSS  N           N RAIN  O-1 L-TURN 01 NONE    0  STRGHT                                                                 02
NONE              Fri     7P  WOODBURN            MN    0   LINCOLN ST            CN                TRF SIGNAL  N WET   TURN          PRVTE       NE SW                                                 000              00
                              WOODBURN UA          32.41    PACIFIC HY 99E        01             0              N DLIT  PDO          PSNGR CAR             01 DRVR  NONE  00  M  UNK         000        000              00
No     45  8 33.48  -122 50 20.08                 008100100S00                1                                                                                           UNK

                                                                                                                                   02 NONE    0  TURN-L
                                                                                                                                      PRVTE       SW W                                                  000              00
                                                                                                                                     PSNGR CAR             01 DRVR  NONE  27  M  OR-Y        004,028    000              02
                                                                                                                                                                                  OR<25

03572  N N N N N  10/14/2013  MARION              1    14                         INTER      CROSS  N           N CLR   O-1 L-TURN 01 NONE    0  STRGHT                                                                 02
CITY              Mon     3P  WOODBURN            MN    0   LINCOLN ST            CN                TRF SIGNAL  N DRY   TURN          PRVTE       NE SW                                                 000              00
                              WOODBURN UA          32.41    PACIFIC HY 99E        01             0              N DAY   PDO          PSNGR CAR             01 DRVR  NONE  51  M  OR-Y        000        000              00
No     45  8 33.48  -122 50 20.08                 008100100S00                1                                                                                           OR<25

                                                                                                                                   02 NONE    0  TURN-L
                                                                                                                                      PRVTE       SW W                                                  000              00
                                                                                                                                     PSNGR CAR             01 DRVR  NONE  57  F  OR-Y        004,028    000              02
                                                                                                                                                                                  OR<25

00267  N N N N N  01/25/2013  MARION              1    14                         INTER      CROSS  N           N CLD   ANGL-OTH   01 NONE    0  STRGHT                                                                 04
CITY              Fri    11A  WOODBURN            MN    0   LINCOLN ST            CN                TRF SIGNAL  N WET   TURN          PRVTE       NE SW                                                 000              00
                              WOODBURN UA          32.41    PACIFIC HY 99E        03             0              N DAY   INJ          PSNGR CAR             01 DRVR  NONE  48  M  SUSP        020        000              04
No     45  8 33.48  -122 50 20.08                 008100100S00                1                                                                                           OR<25
                                                                                                                                                           02 PSNG  INJC  00  F              000        000              00

                                                                                                                                   02 NONE    0  TURN-L
                                                                                                                                      PRVTE       W  NE                                                 000              00
                                                                                                                                     PSNGR CAR             01 DRVR  INJC  59  M  OR-Y        000        000              00
                                                                                                                                                                                  OR<25

04927  N N N N N  12/08/2015  MARION              1    14                         INTER      CROSS  N           N RAIN  O-1 L-TURN 01 NONE    0  STRGHT                                                                 02
CITY              Tue    10P  WOODBURN            MN    0   LINCOLN ST            CN                TRF SIGNAL  N WET   TURN          PRVTE       SW NE                                                 000              00
                              WOODBURN UA          32.41    PACIFIC HY 99E        04             0              N DLIT  PDO          PSNGR CAR             01 DRVR  NONE  56  M  OR-Y        000        000              00
No     45  8 33.48  -122 50 20.08                 008100100S00                1                                                                                           OR<25
```

SER# INVEST UNLOC?	S P E D / D R S W / E A U C O / E L G H R / D C S L K	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02	NONE 0	TURN-L										
													PRVTE	NE E									000	00
													PSNGR CAR		01	DRVR	NONE	24	M	OR-Y		028,004	000	02
																				OR<25				

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Meridian Dr / 5th St & OR 214

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	3	0	0	1	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	3	0	0	1	1	0	1	0	0
YEAR: 2014														
REAR-END	0	1	1	2	0	1	0	1	1	2	0	2	0	0
2014 TOTAL	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2013 TOTAL	0	1	2	3	0	1	0	2	1	3	0	3	0	0
YEAR: 2012														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2012 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2011														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2011 TOTAL	0	1	0	1	0	2	0	1	0	1	0	1	0	0
FINAL TOTAL	0	5	4	9	0	8	0	6	3	9	0	9	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON

Meridian Dr / 5th St & OR 214
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E D: E A U C O / E L G H R / D C S L K (SPEED, DRUG, ALCOHOL, WORK)	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V# SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P# PRTC TYPE INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03173	N N N N N	09/20/2012	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07,27
CITY		Thu 3P	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		UNKNOWN	N	DRY	REAR	PRVTE	NE SW							000		00
			WOODBURN UA	38.13	MERIDIAN DR	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR NONE	17	M	OR-Y		043,016,026	000		07,27
No		*45 9 1.51 -122 51 15.64*		014000100S00	1												OR<25					
												02 NONE 0	STOP									
												PRVTE	NE SW							011		00
												PSNGR CAR		01 DRVR INJC	25	M	OR-Y		000	000		00
																	OR<25					
04354	N N N	11/06/2014	MARION	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
NONE		Thu 10A	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	WET	REAR	PRVTE	NE SW							000		00
			WOODBURN UA	38.13	MERIDIAN DR	06	0		N	DAY	PDO	PSNGR CAR		01 DRVR NONE	22	F	OR-Y		026	000		07
No		*45 9 1.51 -122 51 15.64*		014000100S00	1												OR<25					
												02 NONE 0	STOP									
												PRVTE	NE SW							011		00
												PSNGR CAR		01 DRVR NONE	00	F	OR-Y		000	000		00
																	UNK					
03664	N N N	10/31/2011	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07
NO RPT		Mon 4P	WOODBURN	MN 0	HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	REAR	PRVTE	E W							000		00
			WOODBURN UA	38.13	MERIDIAN DR	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR NONE	00	U	UNK		026	000		07
No		*45 9 1.51 -122 51 15.64*		014000100S00	1												UNK					
												02 NONE 0	STOP									
												PRVTE	E W							011		00
												PSNGR CAR		01 DRVR INJC	38	F	OR-Y		000	000		00
																	OR<25					
														02 PSNG INJC	06	M			000	000		00
03944	N N N N N	11/05/2014	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT								013	07
CITY		Wed 3P	WOODBURN	MN 0	HILLSBORO-SILV HY	SE		TRF SIGNAL	N	DRY	REAR	PRVTE	SE NW							000		00
			WOODBURN UA	38.13	5TH ST	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR NONE	36	F	OR-Y		043,026	000		07
No		*45 9 1.51 -122 51 15.64*		014000100S00	1												OR<25					
												02 NONE 0	STOP									
												PRVTE	SE NW							011	013	00
												PSNGR CAR		01 DRVR NONE	63	M	OR-Y		000	000		00
																	OR<25					
												03 NONE 0	STOP									
												PRVTE	SE NW							022		00
												PSNGR CAR		01 DRVR INJC	52	M	OR-Y		000	022		00
																	OR<25					
05032	N N N	12/14/2015	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT									32,07
STATE		Mon 3P	WOODBURN	MN 0	HILLSBORO-SILV HY	SE		STOP SIGN	N	WET	REAR	PRVTE	SE NW							000		00
			WOODBURN UA	38.13	5TH ST	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR NONE	24	M	OR-Y		052,026	000		32,07
No		*45 9 1.51 -122 51 15.64*		014000100S00	1												OR<25					
														02 PSNG INJC	22	M			000	000		00

140 HILLSBORO-SILVERTON

Meridian Dr / 5th St & OR 214
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S D / P R S W / E A U C O / E L G H R / D C S L K	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	AGE	SEX	LICNS / RES	PED / LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0	STOP											
													PRVTE	SE NW									012		00
													PSNGR CAR		01	DRVR	INJC	78	M	OR-Y		000	000		00
																				OR<25					
															02	PSNG	INJC	74	F			000	000		00
03281	N N N	09/23/2013	MARION	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										013	07
NO RPT		Mon 5P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	REAR		PRVTE	W E									000		00
			WOODBURN UA	38.13	MERIDIAN DR	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		026	000		07
No		45 9 1.51 -122 51 15.64		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	W E									011	013	00
													PSNGR CAR		01	DRVR	NONE	78	M	OR-Y		000	000		00
																				OR<25					
												03	NONE 0	STOP											
													PRVTE	W E									022		00
													PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		000	000		00
																				UNK					
01209	N N N	04/09/2012	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07,10
NONE		Mon 5P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	DRY	REAR		PRVTE	SW NE									000		00
			WOODBURN UA	38.13	MERIDIAN DR	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		07
No		45 9 1.51 -122 51 15.64		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	SW NE									011		00
													PSNGR CAR		01	DRVR	NONE	38	F	OR-Y		009	000		10
																				OR<25					
04500	N N N N N	12/14/2013	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											04
CITY		Sat 1P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	SW NE									000		00
			WOODBURN UA	38.13	MERIDIAN DR	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	75	M	OR-Y		000	000		00
No		45 9 1.51 -122 51 15.64		014000100S00	1															OR<25					
												02	NONE 0	TURN-L											
													PRVTE	NE SE									000		00
													PSNGR CAR		01	DRVR	NONE	74	F	OR-Y		020,004	000		00
																				OR<25					
02339	N N N N N	07/13/2013	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY		Sat 6A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW NE									000		00
			WOODBURN UA	38.13	MERIDIAN DR	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	M	OR-Y		020	000		04
No		45 9 1.51 -122 51 15.64		014000100S00	1															OR<25					
												02	NONE 0	TURN-L											
													PRVTE	SE SW									000		00
													PSNGR CAR		01	DRVR	INJB	21	M	OR-Y		000	000		00
																				OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 214 & Front - Hood CN

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR: 2013														
TURNING MOVEMENTS	0	1	0	1	0	2	0	0	1	1	0	1	0	0
2013 TOTAL	0	1	0	1	0	2	0	0	1	1	0	1	0	0
YEAR: 2012														
BACKING	0	0	1	1	0	0	0	0	1	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	2	2	0	0	0	1	1	2	0	2	0	0
YEAR: 2011														
BACKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	1	0	1	0	2	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2011 TOTAL	0	1	2	3	0	2	0	2	1	2	1	3	0	0
FINAL TOTAL	0	2	5	7	0	4	0	4	3	5	2	7	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON

OR 214 & Front - Hood CN
January 1, 2011 through December 31, 2015

```
       S  D
       P  R S W                                    RD#  FC   CONN #                              INT-TYP                                          SPCL USE
SER#   E A U C O  DATE         COUNTY              CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                    A  S
INVEST E L G H R  DAY/TIME     CITY                MILEPNT   SECOND STREET        DIRECT   LEGS     TRAF-    RNDBT SURF  COLL TYP     OWNER     FROM       PRTC INJ     G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG     URBAN AREA          LRS       INTERSECTION SEQ#    LOCTN    (#LANES) CNTL     DRVWY LIGHT SVRTY      V# VEH TYPE TO      P# TYPE SVRTY  E  X  RES    LOC ERROR        ACTN EVENT      CAUSE

03866  Y N N N N 11/02/2013  MARION              1    14                          INTER    3-LEG    N            N CLD   ANGL-OTH   01 NONE    0 TURN-L                                                124    01
CITY             Sat     9A  WOODBURN            MN    0   FRONT - HOOD CN        E                 STOP SIGN    N WET   TURN          PRVTE      NE E                                              000  124    00
                             WOODBURN UA         38.56     HILLSBORO-SILV HY      06         1                   N DAY   INJ          PSNGR CAR         01 DRVR NONE  18  M  OR-Y       047,080    000         01
No      45  9  7.03  -122 50 46.33               014000100S00               1                                                                                         OR<25

                                                                                                                                    02 NONE    0 STRGHT
                                                                                                                                       PRVTE      E  W                                              000         00
                                                                                                                                      PSNGR CAR         01 DRVR INJC  34  M  OR-Y       000        000         00
                                                                                                                                                                             OR>25
                                                                                                                                                        02 PSNG INJC  40  M             000        000         00

02979  N N N     09/08/2011  MARION              1    14                          INTER    3-LEG    N            N CLR   O-1 L-TURN 01 NONE    0 TURN-L                                                       02
NONE             Thu     6A  WOODBURN            MN    0   FRONT - HOOD CN        CN                UNKNOWN      N DRY   TURN          PRVTE      W  NE                                             000         00
                             WOODBURN UA         38.56     HILLSBORO-SILV HY      02         1                   N DAWN  PDO          PSNGR CAR         01 DRVR NONE  24  M  OR-Y       004,028    000         02
No      45  9  7.03  -122 50 46.33               014000100S00               1                                                                                         OR<25

                                                                                                                                    02 NONE    0 STRGHT
                                                                                                                                       PRVTE      E  W                                              000         00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  31  F  OR-Y       000        000         00
                                                                                                                                                                             OR<25

04060  N N N     10/22/2015  MARION              1    14                          INTER    3-LEG    N            N CLR   O-1 L-TURN 01 NONE    0 TURN-L                                                       02
CITY             Thu     7A  WOODBURN            MN    0   FRONT - HOOD CN        CN                STOP SIGN    N DRY   TURN          PRVTE      W  NE                                             000         00
                             WOODBURN UA         38.56     HILLSBORO-SILV HY      02         1                   N DAWN  PDO          PSNGR CAR         01 DRVR NONE  24  M  OR-Y       028,004    000         02
No      45  9  7.03  -122 50 46.33               014000100S00               1                                                                                         OR<25

                                                                                                                                    02 NONE    0 STRGHT
                                                                                                                                       PRVTE      E  W                                              000         00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  28  M  OR-Y       000        000         00
                                                                                                                                                                             OR<25
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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 214 & OR 211 & OR 99E

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	1	0	1	0	4	0	0	1	0	1	1	0	0
BACKING	0	1	0	1	0	1	0	0	1	1	0	1	0	0
REAR-END	0	1	7	8	0	1	2	6	2	6	2	8	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	1	1	0	1	0	1	0	0
2015 TOTAL	0	3	8	11	0	6	3	7	4	8	3	11	0	0
YEAR: 2014														
HEAD-ON	0	1	0	1	0	2	0	1	0	1	0	1	0	0
PEDESTRIAN	0	2	0	2	0	2	0	2	0	2	0	2	0	0
REAR-END	0	1	1	2	0	6	0	1	1	2	0	2	0	0
2014 TOTAL	0	4	1	5	0	10	0	4	1	5	0	5	0	0
YEAR: 2013														
REAR-END	0	4	4	8	0	5	0	6	2	5	3	8	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
2013 TOTAL	0	5	5	10	0	6	0	7	3	6	4	10	0	0
YEAR: 2012														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2012 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2011														
REAR-END	0	3	2	5	0	4	0	3	2	3	2	5	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	0	2	0	2	2	0	0
2011 TOTAL	0	3	4	7	0	4	0	3	4	3	4	7	0	0
FINAL TOTAL	0	16	19	35	0	27	3	23	12	24	11	35	0	0

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

081 PACIFIC HIGHWAY EAST

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

```
      S  D
      P  R S W                                         RD#  FC   CONN #                                  INT-TYP                                          SPCL USE
SER#  E A U C O  DATE          COUNTY                  CMPT/MLG  FIRST  STREET           RD CHAR  (MEDIAN)  INT-REL  OFFRD  WTHR   CRASH TYP     TRLR QTY   MOVE                           A  S
INVEST E L G H R DAY/TIME      CITY                    MILEPNT   SECOND STREET           DIRECT     LEGS    TRAF-    RNDBT  SURF   COLL TYP      OWNER      FROM        PRTC  INJ          G  E  LICNS  PED
UNLOC? D C S L K LAT/LONG      URBAN AREA              LRS       INTERSECTION SEQ#       LOCTN    (#LANES)  CNTL     DRVWY  LIGHT  SVRTY      V# VEH TYPE  TO     P#  TYPE  SVRTY        E  X  RES    LOC  ERROR     ACTN EVENT    CAUSE

02222  N N N     07/05/2014   MARION                  1    14                           INTER      CROSS    N                N    CLR    S-1STOP    01 NONE   0 STRGHT                                                     013     07
CITY             Sat    2P    WOODBURN                MN    0   HILLSBORO-SILV HY       NE                  L-GRN-SIG        N    DRY    REAR          PRVTE     NE SW                                               000              00
                              WOODBURN UA              31.70    PACIFIC HY 99E          06           1                       N    DAY    INJ           PSNGR CAR          01 DRVR  NONE  46 M NONE        043,026   000              07
No      45  9  4.66  -122 49 52.38                    008100100S00            1                                                                                                     OR<25

                                                                                                                                               02 NONE   0 STOP
                                                                                                                                                  PRVTE     NE SW                                               012  013         00
                                                                                                                                                  PSNGR CAR          01 DRVR  INJC  32 F OR-Y        000       000              00
                                                                                                                                                                                          OR<25
                                                                                                                                                                     02 PSNG  INJC  08 M             000       000              00
                                                                                                                                                                     03 PSNG  INJC  11 F             000       000              00
                                                                                                                                                                     04 PSNG  INJC  04 M             000       000              00
                                                                                                                                                                     05 PSNG  INJC  23 F             000       000              00

                                                                                                                                               03 NONE   0 STOP
                                                                                                                                                  PRVTE     NE SW                                               022              00
                                                                                                                                                  PSNGR CAR          01 DRVR  INJC  73 F OR-Y        000       000              00
                                                                                                                                                                                          OR<25

02591  N N N N N 08/02/2014   MARION                  1    14                           INTER      CROSS    N                N    CLR    O-1STOP    01 NONE   0 STRGHT                                                              10
CITY             Sat    12P   WOODBURN                MN    0   HILLSBORO-SILV HY       NE                  TRF SIGNAL       N    DRY    HEAD          PRVTE     SW NE                                               000              00
                              WOODBURN UA              31.70    PACIFIC HY 99E          06           1                       N    DAY    INJ           PSNGR CAR          01 DRVR  INJC  36 M SUSP        080       000              10
No      45  9  4.66  -122 49 52.38                    008100100S00            1                                                                                                     OR<25

                                                                                                                                               02 NONE   0 STOP
                                                                                                                                                  PRVTE     NE SW                                               011              00
                                                                                                                                                  PSNGR CAR          01 DRVR  INJB  56 F OR-Y        000       000              00
                                                                                                                                                                                          OR<25

03793  N N N     10/26/2014   MARION                  1    14                           INTER      CROSS    N                N    RAIN   S-1STOP    01 NONE   0 STRGHT                                                              07
NO RPT           Sun    4P    WOODBURN                MN    0   HILLSBORO-SILV HY       NE                  TRF SIGNAL       N    WET    REAR          PRVTE     NE SW                                               000              00
                              WOODBURN UA              31.70    PACIFIC HY 99E          06           1                       N    DAY    PDO           PSNGR CAR          01 DRVR  NONE  00 M OR-Y        026       000              07
No      45  9  4.66  -122 49 52.38                    008100100S00            1                                                                                                     UNK

                                                                                                                                               02 NONE   0 STOP
                                                                                                                                                  PRVTE     NE SW                                               011              00
                                                                                                                                                  PSNGR CAR          01 DRVR  NONE  37 F OR-Y        000       000              00
                                                                                                                                                                                          OR<25

02858  N N N     07/24/2015   MARION                  1    14                           INTER      CROSS    N                N    CLR    S-1STOP    01 NONE   0 STRGHT                                                              29
NONE             Fri    UNK   WOODBURN                MN    0   HILLSBORO-SILV HY       NE                  TRF SIGNAL       N    DRY    REAR          PRVTE     NE SW                                               000              00
                              WOODBURN UA              31.70    PACIFIC HY 99E          06           1                       N    DAY    PDO           PSNGR CAR          01 DRVR  NONE  51 F OR-Y        026       000              29
No      45  9  4.66  -122 49 52.38                    008100100S00            1                                                                                                     OR<25

                                                                                                                                               02 NONE   0 STOP
                                                                                                                                                  PRVTE     NE SW                                               011              00
                                                                                                                                                  PSNGR CAR          01 DRVR  NONE  00 M OR-Y        000       000              00
                                                                                                                                                                                          UNK
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081 PACIFIC HIGHWAY EAST
OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

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       S  D
       P  R S W                                  RD#  FC   CONN #                              INT-TYP                                       SPCL USE
SER#   E A U C O DATE          COUNTY            CMPT/MLG FIRST  STREET          RD CHAR (MEDIAN)  INT-REL OFFRD WTHR  CRASH TYP   TRLR QTY  MOVE                      A  S
INVEST E L G H R DAY/TIME      CITY              MILEPNT  SECOND STREET          DIRECT    LEGS    TRAF-   RNDBT SURF  COLL TYP    OWNER     FROM       PRTC INJ      G  E  LICNS PED
UNLOC? D C S L K LAT/LONG      URBAN AREA        LRS      INTERSECTION SEQ#      LOCTN   (#LANES) CNTL    DRVWY LIGHT SVRTY    V# VEH TYPE  TO    P# TYPE SVRTY   E  X  RES   LOC ERROR       ACTN EVENT    CAUSE

03475  N Y N N N 09/11/2015 MARION           1    14                            INTER    CROSS  N            N CLR  S-1STOP   01 NONE   0 STRGHT                                                  013       07
CITY             Fri    8P  WOODBURN         MN    0   HILLSBORO-SILV HY        NE              TRF SIGNAL   N DRY  REAR         PRVTE     NE SW                                          000             00
                            WOODBURN UA       31.70    PACIFIC HY 99E           06         1                 N DLIT PDO         PSNGR CAR        01 DRVR NONE  67 M OR-Y       043,026      000             07
No       45  9  4.66  -122 49 52.38          008100100S00              1                                                                                      OR<25

                                                                                                                          02 NONE   0 STOP
                                                                                                                             PRVTE     NE SW                                          011  013        00
                                                                                                                            PSNGR CAR        01 DRVR NONE  27 F OR-Y       000          022             00
                                                                                                                                                                  OR<25
                                                                                                                                             02 PSNG NO<5  01 M            000          000             00

                                                                                                                          03 UNKN   0 STOP
                                                                                                                             UNKN      NE SW                                          011             00
                                                                                                                            PSNGR CAR        01 DRVR NONE  00 U UNK        000          000             00
                                                                                                                                                                  UNK

03823  N N N     11/12/2012 MARION           1    14                            INTER    CROSS  N            N CLR  S-1STOP   01 NONE   0 STRGHT                                                            07
NO RPT           Mon    8A  WOODBURN         MN    0   WOODBURN-ESTACADA H      S               R-GRN-SIG    N DRY  REAR         PRVTE     S  N                                           000             00
                            WOODBURN UA       31.70    PACIFIC HY 99E           06         1                 N DAY  PDO         PSNGR CAR        01 DRVR NONE  00 M OR-Y       026          000             07
No       45  9  4.66  -122 49 52.38          008100100S00              1                                                                                      OR<25

                                                                                                                          02 NONE   0 STOP
                                                                                                                             PRVTE     S  N                                           011             00
                                                                                                                            PSNGR CAR        01 DRVR NONE  65 M OR-Y       000          000             00
                                                                                                                                                                  OR>25

00115  Y N N N N 01/11/2013 MARION           1    14                            INTER    CROSS  N            N SLT  S-1STOP   01 NONE   0 STRGHT                                                            01
CITY             Fri    4A  WOODBURN         MN    0   WOODBURN-ESTACADA H      S               TRF SIGNAL   N ICE  REAR         PRVTE     S  N                                           000             00
                            WOODBURN UA       31.70    PACIFIC HY 99E           06         1                 N DLIT INJ         PSNGR CAR        01 DRVR NONE  34 F OR-Y       047,026      000             01
No       45  9  4.66  -122 49 52.38          008100100S00              1                                                                                      OR<25

                                                                                                                          02 NONE   0 STOP
                                                                                                                             PRVTE     S  N                                           011             00
                                                                                                                            PSNGR CAR        01 DRVR INJC  36 M OR-Y       000          000             00
                                                                                                                                                                  OR<25

00538  N N N     02/20/2013 MARION           1    14                            INTER    CROSS  N            N CLR  S-1STOP   01 NONE   0 STRGHT                                                            27
NONE             Wed    5P  WOODBURN         MN    0   WOODBURN-ESTACADA H      S               TRF SIGNAL   N DRY  REAR         PRVTE     S  N                                           000             00
                            WOODBURN UA       31.70    PACIFIC HY 99E           06         1                 N DUSK PDO         PSNGR CAR        01 DRVR NONE  27 M OR-Y       016,026      000             27
No       45  9  4.66  -122 49 52.38          008100100S00              1                                                                                      OR<25

                                                                                                                          02 NONE   0 STOP
                                                                                                                             PRVTE     S  N                                           011             00
                                                                                                                            PSNGR CAR        01 DRVR NONE  62 M OTH-Y      000          000             00
                                                                                                                                                                  N-RES

02555  N N N N N 07/29/2013 MARION           1    14                            INTER    3-LEG  N            N CLR  ANGL-OTH  01 NONE   0 TURN-R                                                            02
CITY             Mon    9A  WOODBURN         MN    0   HILLSBORO-SILV HY        SW              STOP SIGN    N DRY  TURN         PRVTE     W  SW                                          015             00
                            WOODBURN UA       31.70    PACIFIC HY 99E           03         1                 N DAY  PDO         PSNGR CAR        01 DRVR NONE  19 F OR-Y       028          000             02
No       45  9  4.66  -122 49 52.38          008100100S00              1                                                                                      OR<25
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081 PACIFIC HIGHWAY EAST   OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

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      S   D
      P   R S W                                  RD#  FC   CONN #                        INT-TYP                                    SPCL USE
SER#  E A U C O  DATE          COUNTY            CMPT/MLG  FIRST  STREET     RD CHAR  (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP    TRLR QTY  MOVE                     A  S
INVEST E L G H R DAY/TIME      CITY              MILEPNT   SECOND STREET     DIRECT   LEGS      TRAF-    RNDBT SURF  COLL TYP     OWNER     FROM      PRTC  INJ      G  E  LICNS PED
UNLOC? D C S L K LAT/LONG      URBAN AREA        LRS       INTERSECTION SEQ# LOCTN    (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE  TO     P# TYPE  SVRTY    E  X  RES   LOC  ERROR        ACTN EVENT      CAUSE

                                                                                                                          02 NONE    0 STRGHT
                                                                                                                             PRVTE     NE SW                                                   000              00
                                                                                                                             PSNGR CAR          01 DRVR NONE  26 F OR-Y       000          000              00
                                                                                                                                                                   OR<25

00208  N N N     01/21/2011 MARION            1    14                     INTER     CROSS  N          N CLD   S-1STOP    01 NONE    0 TURN-R                                                                07
NONE             Fri   10A  WOODBURN          MN    0   HILLSBORO-SILV HY SW               STOP SIGN  N WET   REAR          PRVTE     W  SW                                                  000              00
                            WOODBURN UA       31.70     PACIFIC HY 99E    09          1               N DAY   INJ           PSNGR CAR          01 DRVR NONE  32 M OR-Y       026          000              07
No     45  9  4.66  -122 49 52.38             008100100S00            1                                                                                            OR<25

                                                                                                                          02 NONE    0 STOP
                                                                                                                             PRVTE     W  SW                                                   011              00
                                                                                                                             PSNGR CAR          01 DRVR INJC  63 F OR-Y       000          000              00
                                                                                                                                                                   OR<25

02716  N N N N N 08/13/2014 MARION            1    14                     INTER     CROSS  N          N CLR   PED        01 NONE    0 STRGHT                                                                02
CITY             Wed    2P  WOODBURN          MN    0   HILLSBORO-SILV HY SW               STOP SIGN  N DRY   PED           PRVTE     NW SE                                                  015              00
                            WOODBURN UA       31.70     PACIFIC HY 99E    09          1               N DAY   INJ           PSNGR CAR          01 DRVR NONE  57 F OR-Y       029          000              02
No     45  9  4.66  -122 49 52.38             008100100S00            1                                                                                            OR<25
                                                                                                                                       STRGHT 01 PED  INJC  38 F          01  000          000              00
                                                                                                                                       W  E

03521  N N N N N 10/10/2013 MARION            1    14                     INTER     CROSS  N          N CLD   O-1 L-TURN 01 NONE    0 STRGHT                                                                02
CITY             Thu    6A  WOODBURN          MN    0   HILLSBORO-SILV HY CN               TRF SIGNAL N WET   TURN          PRVTE     E  W                                                   000              00
                            WOODBURN UA       31.70     PACIFIC HY 99E    02          1               N DAWN  INJ           PSNGR CAR          01 DRVR INJC  33 M OR-Y       000          000              00
No     45  9  4.66  -122 49 52.38             008100100S00            1                                                                                            OR<25

                                                                                                                          02 NONE    0 TURN-L
                                                                                                                             PRVTE     W  NE                                                   000              00
                                                                                                                             PSNGR CAR          01 DRVR NONE  23 M OR-Y       004,028      000              02
                                                                                                                                                                   OR>25

01709  N N N     05/11/2015 MARION            1    14                     INTER     CROSS  N          N CLR   ANGL-OTH   01 NONE    0 TURN-R                                                                02
CITY             Mon   12P  WOODBURN          MN    0   WOODBURN-ESTACADA H CN             TRF SIGNAL N DRY   TURN          PRVTE     E  N                                                   000              00
                            WOODBURN UA       31.70     PACIFIC HY 99E    02          1               N DAY   PDO           PSNGR CAR          01 DRVR NONE  19 F OR-Y       028          000              02
No     45  9  4.66  -122 49 52.38             008100100S00            1                                                                                            OR<25

                                                                                                                          02 NONE    1 STRGHT
                                                                                                                             PRVTE     S  N                                                    000              00
                                                                                                                             SEMI TOW           01 DRVR NONE  30 M OTH-Y      000          000              00
                                                                                                                                                                   N-RES

04469  N N N     11/13/2015 MARION            1    14                     INTER     CROSS  N          N RAIN  ANGL-OTH   01 NONE    0 STRGHT                                                     013        27,04
CITY             Fri    8P  WOODBURN          MN    0   WOODBURN-ESTACADA H CN             TRF SIGNAL N WET   ANGL          PRVTE     E  W                                                   000              00
                            WOODBURN UA       31.70     PACIFIC HY 99E    02          0               N DLIT  INJ           PSNGR CAR          01 DRVR NONE  68 M OR-Y       016,020      038              27,04
No     45  9  4.66  -122 49 52.38             008100100S00            1                                                                                            OR<25
                                                                                                                                                02 PSNG INJC  70 F            000          000              00

                                                                                                                          02 NONE    0 STRGHT
                                                                                                                             PRVTE     S  N                                                    000  013         00
                                                                                                                             PSNGR CAR          01 DRVR INJC  49 M OR-Y       000          022              00
                                                                                                                                                                   OR<25
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081 PACIFIC HIGHWAY EAST

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

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      S   D
      P   R S W                                RD#  FC   CONN #                          INT-TYP                                         SPCL USE
SER#  E A U C O  DATE        COUNTY            CMPT/MLG  FIRST  STREET       RD CHAR  (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP      TRLR QTY  MOVE                    A  S
INVEST E L G H R DAY/TIME    CITY              MILEPNT   SECOND STREET       DIRECT     LEGS    TRAF-    RNDBT SURF  COLL TYP       OWNER     FROM      PRTC INJ      G  E  LICNS PED
UNLOC? D C S L K LAT/LONG    URBAN AREA        LRS       INTERSECTION SEQ#   LOCTN    (#LANES)  CNTL     DRVWY LIGHT SVRTY       V# VEH TYPE  TO     P# TYPE SVRTY  E  X  RES   LOC ERROR         ACTN EVENT        CAUSE
                                                                                                                                                     02 PSNG INJC  10 M            000           000               00
                                                                                                                                                     03 PSNG INJC  17 M            000           000               00

                                                                                                                         03 NONE    0 STRGHT
                                                                                                                            PRVTE     S  N                                       000               00
                                                                                                                            PSNGR CAR              01 DRVR NONE  71 M OR-Y      000           000               00
                                                                                                                                                                 OR<25

00703  N N N     03/03/2011  MARION            1    14                       INTER     CROSS   N          N RAIN O-1 L-TURN 01 NONE    0 TURN-L                                                     04
CITY             Thu    6A   WOODBURN          MN    0   WOODBURN-ESTACADA H CN                TRF SIGNAL N WET  TURN          PRVTE     NE E                                        000               00
                             WOODBURN UA        31.70    PACIFIC HY 99E      04          1              N DAWN PDO           PSNGR CAR              01 DRVR NONE  54 M OR-Y      000           000               00
No      45  9  4.66  -122 49 52.38             008100100S00              1                                                                                      OR<25

                                                                                                                         02 NONE    0 STRGHT
                                                                                                                            PRVTE     SW NE                                      000               00
                                                                                                                            PSNGR CAR              01 DRVR NONE  33 F OR-Y      020           000               04
                                                                                                                                                                 OR<25
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140 HILLSBORO-SILVERTON

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

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       S  D
       P  R S W                                      RD#  FC   CONN #                       INT-TYP                                   SPCL USE
SER#   E A U C O  DATE         COUNTY                CMPT/MLG  FIRST  STREET      RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                     A  S
INVEST E L G H R  DAY/TIME     CITY                  MILEPNT   SECOND STREET      DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM       PRTC INJ    G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG     URBAN AREA            LRS       INTERSECTION SEQ#  LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE  TO      P# TYPE SVRTY  E  X  RES   LOC ERROR          ACTN EVENT         CAUSE

01047  N N N      04/06/2013   MARION                1    14                      INTER     CROSS   N            N CLR   S-1STOP   01 NONE    0 STRGHT                                                                07
NONE              Sat     9A   WOODBURN              MN    0   HILLSBORO-SILV HY  W                 TRF SIGNAL   N DRY   REAR         PRVTE     W  E                                          000                00
                               WOODBURN UA            39.27    PACIFIC HY 99E     06          0                  N DAY   PDO         PSNGR CAR          01 DRVR NONE  00 M OR-Y        026     000                07
No      45  9  4.70  -122 49 53.90                   014000100S00               1                                                                                  UNK

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     W  E                                          011                00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  64 F OR-Y        000     000                00
                                                                                                                                                                           OR<25

00013  N N N      01/04/2011   MARION                1    14                      INTER     CROSS   N            N CLR   S-1STOP   01 NONE    0 STRGHT                                                                07
NONE              Tue     7P   WOODBURN              MN    0   HILLSBORO-SILV HY  W                 TRF SIGNAL   N DRY   REAR         PRVTE     W  E                                          000                00
                               WOODBURN UA            39.28    PACIFIC HY 99E     06          1                  N DLIT  INJ         PSNGR CAR          01 DRVR NONE  42 F OR-Y        026     000                07
No      45  9  4.68  -122 49 53.14                   014000100S00               1                                                                                  OR<25

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     W  E                                          011                00
                                                                                                                                     PSNGR CAR          01 DRVR INJC  39 F OR-Y        000     000                00
                                                                                                                                                                           OR<25

00688  N N N      03/05/2013   MARION                1    14                      INTER     CROSS   N            N RAIN  S-1STOP   01 NONE    0 TURN-R                                                                07
NO RPT            Tue     6P   WOODBURN              MN    0   HILLSBORO-SILV HY  SW                R-GRN-SIG    N WET   REAR         PRVTE     W  S                                          000                00
                               WOODBURN UA            39.29    PACIFIC HY 99E     09          1                  N DUSK  PDO         PSNGR CAR          01 DRVR NONE  27 F OR-Y        026     000                07
No      45  9  4.66  -122 49 52.38                   014000100S00               1                                                                                  OR<25

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     W  S                                          013                00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  61 M OR-Y        000     000                00
                                                                                                                                                                           OR<25

01463  N N N      05/08/2013   MARION                1    14                      INTER     CROSS   N            N CLR   S-1STOP   01 NONE    0 TURN-R                                                                07
NONE              Wed    12P   WOODBURN              MN    0   HILLSBORO-SILV HY  SW                STOP SIGN    N DRY   REAR         PRVTE     W  S                                          000                00
                               WOODBURN UA            39.29    PACIFIC HY 99E     09          1                  N DAY   INJ         PSNGR CAR          01 DRVR NONE  76 F OR-Y        026     000                07
No      45  9  4.66  -122 49 52.38                   014000100S00               1                                                                                  OR>25

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     W  S                                          013                00
                                                                                                                                     PSNGR CAR          01 DRVR INJC  60 F OR-Y        000     000                00
                                                                                                                                                                           OR<25
                                                                                                                                                        02 PSNG INJC  51 F             000     000                00

01920  N N N      06/12/2013   MARION                1    14                      INTER     CROSS   N            N CLR   S-1STOP   01 NONE    0 TURN-R                                                                07
NONE              Wed    11A   WOODBURN              MN    0   HILLSBORO-SILV HY  SW                STOP SIGN    N DRY   REAR         PRVTE     W  SW                                         000                00
                               WOODBURN UA            39.29    PACIFIC HY 99E     09          1                  N DAY   PDO         PSNGR CAR          01 DRVR NONE  00 F UNK         026     000                07
No      45  9  4.66  -122 49 52.38                   014000100S00               1                                                                                  UNK

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     W  SW                                         011                00
                                                                                                                                     PSNGR CAR          01 DRVR NONE  63 F OR-Y        000     000                00
                                                                                                                                                                           OR<25
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140 HILLSBORO-SILVERTON

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E E L D C / D R A U G S / S C H L / W O R K	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00457	N N N N N	02/12/2011	MARION	1 14		INTER	CROSS	N	N	RAIN	S-OTHER	01	NONE 0	TURN-L										08
CITY		Sat 7P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	TURN		PRVTE	SW W									000	00
			WOODBURN UA	39.29	PACIFIC HY 99E	05	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		001,007	000	08
No		45 9 4.66 -122 49 52.38		014000100S00	1															OR<25				
												02	NONE 0	TURN-L										
													PRVTE	SW W									000	00
													PSNGR CAR		01	DRVR	NONE	61	F	OR-Y		000	000	00
																				OR<25				
02293	N N N N N	07/17/2011	MARION	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										32,07
STATE		Sun 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	REAR		PRVTE	W E									000	00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	M	SUSP		052,043,026	000	32,07
No		45 9 4.66 -122 49 52.38		014000100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	W E									011	00
													PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		000	000	00
																				OR<25				
02573	N N N	08/10/2011	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE		Wed 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	90	F	OR-Y		026	000	07
No		45 9 4.66 -122 49 52.38		014000100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	W E									011	00
													PSNGR CAR		01	DRVR	INJC	43	F	OR-Y		000	000	00
																				OR<25				
															02	PSNG	INJC	81	F			000	000	00
01912	N N N	06/10/2012	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27
NONE		Sun 6P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	F	OTH-Y		016,026	000	27
No		45 9 4.66 -122 49 52.38		014000100S00	1															N-RES				
												02	NONE 0	STOP										
													PRVTE	W E									011	00
													PSNGR CAR		01	DRVR	INJB	25	F	OR-Y		000	000	00
																				OR<25				
00603	N N N	02/09/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		Mon UNK	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		026	000	29
No		45 9 4.66 -122 49 52.38		014000100S00	1															UNK				
												02	NONE 0	STOP										
													PRVTE	W E									011	00
													PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		000	000	00
																				UNK				

140 HILLSBORO-SILVERTON

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E E D / R A L C S L / S U G H L / W C H R K / O R K (E A U C O / E L G H R / D C S L K)	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01653	N N N N N	05/07/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY		Thu 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		043,026	000		07
No		*45 9 4.66 -122 49 52.38*		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	W E									011		00
													PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		000	000		00
																				OR>25					
05183	N N N N N	12/23/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1STOP	01	NONE 0	BACK											10
CITY		Wed 1P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	BACK		PRVTE	E W									000		00
			WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		011	000		10
No		*45 9 4.66 -122 49 52.38*		014000100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	W E									011		00
													PSNGR CAR		01	DRVR	INJC	31	F	OR-Y		000	000		00
																				OR<25					

161 WOODBURN-ESTACADA

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E A U C O / D R S W / E L G H R / D C S L K	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	AGE	SEX	LICNS / RES	PED / LOC	ERROR	ACTN	EVENT	CAUSE
04291	N N N	12/13/2011	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Tue 9P	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OTH-Y		026	000		07
No		45 9 4.66 -122 49 52.38		016100100S00		1															N-RES					
													02	NONE 0	STOP											
														PRVTE	E W									011		00
														PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		000	000		00
																					OR<25					
00037	N N N	01/04/2013	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Fri 3P	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		07
No		45 9 4.66 -122 49 52.38		016100100S00		1															OR<25					
													02	NONE 0	STOP											
														PRVTE	E W									011		00
														PSNGR CAR		01	DRVR	INJB	38	M	OR-Y		000	000		00
																					OR<25					
02652	N N N	08/09/2013	MARION	1	14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY		Fri 8P	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	U	UNK		026	000		07
No		45 9 4.66 -122 49 52.38		016100100S00		1															UNK					
													02	NONE 0	STOP											
														PRVTE	E W									011		00
														PSNGR CAR		01	DRVR	INJC	44	M	OR-Y		000	000		00
																					OR<25					
01950	N N N N N	06/13/2014	MARION	1	14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	TURN-R											02
CITY		Fri 10A	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		UNKNOWN	N	DRY	PED		PRVTE	E N									000		00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		029	000		02
No		45 9 4.66 -122 49 52.38		016100100S00		1															OR<25					
															STRGHT	01	PED	INJB	15	M		01	000	000		00
															S N											
01257	N N N N N	04/08/2015	MARION	1	16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 1	STRGHT										054	07
CITY		Wed 7A	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000	054	00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	67	M	OR-Y		043,026	000		07
No		45 9 4.66 -122 49 52.38		016100100S00		1															OR<25					
													02	NONE 0	STOP											
														PRVTE	E W									011		00
														PSNGR CAR		01	DRVR	INJC	47	M	OR-Y		000	000		00
																					OR<25					
01315	N N N	04/12/2015	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT		Sun 5P	WOODBURN	MN	0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
			WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		29
No		45 9 4.66 -122 49 52.38		016100100S00		1															OR<25					

161 WOODBURN-ESTACADA

OR 214 & OR 211 & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P D / E A U C O / E L G H R / D C S L K (R S W)	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02	NONE 0	STOP										
													PRVTE	E W									011	00
													PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		000	000	00
																				OR<25				
01586	N N N	04/18/2015	MARION	1 16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		Sat 7P	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000	00
			WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000	29
No		*45 9 4.66 -122 49 52.38*		016100100S00	1															OR<25				
												02	NONE 0	STOP										
													PRVTE	E W									011	00
													PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		000	000	00
																				OR<25				
01713	N N N N N	05/12/2015	MARION	1 16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
CITY		Tue 11A	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000	00
			WOODBURN UA	0.00	PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		043,026	000	07
No		*45 9 4.66 -122 49 52.38*		016100100S00	1															OR<25				
												02	NONE 1	STOP										
													PRVTE	E W									011	00
													SEMI TOW		01	DRVR	NONE	23	M	OR-Y		000	000	00
																				OR<25				

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Park Ave & OR 214 Hillsboro-Silverton Hwy (140)

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	1	1	2	0	1	0	1	1	1	1	2	0	0
REAR-END	0	1	1	2	0	2	0	2	0	2	0	2	0	0
2015 TOTAL	0	2	2	4	0	3	0	3	1	3	1	4	0	0
YEAR: 2014														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2014 TOTAL	0	1	2	3	0	1	0	3	0	3	0	3	0	0
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	1	1	2	0	4	0	1	1	2	0	2	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	5	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	3	0	1	0	1	0	1	0	0
2013 TOTAL	0	3	2	5	0	12	0	4	1	4	1	5	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	0	2	2	0	0	0	2	0	2	0	2	0	0
2011 TOTAL	0	0	3	3	0	0	0	3	0	3	0	3	0	0
FINAL TOTAL	0	7	9	16	0	17	0	14	2	14	2	16	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

140 HILLSBORO-SILVERTON

Park Ave & OR 214 Hillsboro-Silverton Hwy (140)

January 1, 2011 through December 31, 2015

```
       S   D
       P   R S W                                    RD#  FC   CONN #                         INT-TYP                                       SPCL USE
SER#   E A U C O  DATE        COUNTY                CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                  A  S
INVEST E L G H R  DAY/TIME    CITY                  MILEPNT   SECOND STREET        DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM      PRTC  INJ   G  E  LICNS  PED
UNLOC? D C S L K  LAT/LONG    URBAN AREA            LRS       INTERSECTION SEQ#    LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY      V# VEH TYPE  TO     P# TYPE  SVRTY E  X  RES    LOC  ERROR      ACTN EVENT    CAUSE

00703  N N N N N  02/27/2012  MARION                1    14                        INTER      3-LEG  N            N CLR   S-1STOP    01 NONE    0  STRGHT                                                               07
CITY              Mon   12P   WOODBURN              MN    0   HILLSBORO-SILV HY    E                 SP PED SIG   N DRY   REAR          PRVTE     W  E                                                   000           00
                              WOODBURN UA            38.82    PARK AVE             06           0                 N DAY   INJ          PSNGR CAR           01 DRVR NONE   61 F  OR-Y         043,026    000           07
No      45  9  5.57  -122 50 27.82                  014000100S00               1                                                                                     OR>25

                                                                                                                                     02 NONE    0  STOP
                                                                                                                                        PRVTE     W  E                                                   011           00
                                                                                                                                       PSNGR CAR           01 DRVR INJC   35 F  OR-Y         000        000           00
                                                                                                                                                                                 OR>25

04196  N N N      11/26/2013  MARION                1    14                        INTER      3-LEG  N            N CLR   S-STRGHT   01 NONE    0  STRGHT                                                               32,13
CITY              Tue    1P   WOODBURN              MN    0   HILLSBORO-SILV HY    E                 UNKNOWN      N DRY   SS-O          PRVTE     E  W                                                   000           00
                              WOODBURN UA            38.82    PARK AVE             06           0                 N DAY   INJ          PSNGR CAR           01 DRVR NONE   39 M  OR-Y         052,045    000           32,13
No      45  9  5.57  -122 50 27.82                  014000100S00               1                                                                                     OR<25

                                                                                                                                     02 NONE    0  STRGHT
                                                                                                                                        PRVTE     E  W                                                   000           00
                                                                                                                                       PSNGR CAR           01 DRVR INJC   40 M  OR-Y         000        000           00
                                                                                                                                                                                 OR<25
                                                                                                                                                           02 PSNG INJC   61 F               000        000           00
                                                                                                                                                           03 PSNG INJC   09 F               000        000           00
                                                                                                                                                           04 PSNG INJC   01 M               000        000           00
                                                                                                                                                           05 PSNG INJC   32 F               000        000           00

02443  N N N N N  07/22/2014  MARION                1    14                        INTER      3-LEG  N            N CLR   S-1STOP    01 NONE    0  STRGHT                                                     089       07
CITY              Tue    3P   WOODBURN              MN    0   HILLSBORO-SILV HY    E                 STOP SIGN    N DRY   REAR          PRVTE     E  W                                                   000  089      24
                              WOODBURN UA            38.82    PARK AVE             06           0                 N DAY   INJ          PSNGR CAR           01 DRVR NONE   00 U  UNK          026        000           07
No      45  9  5.57  -122 50 27.82                  014000100S00               1                                                                                     UNK

                                                                                                                                     02 NONE    0  STOP
                                                                                                                                        PRVTE     E  W                                                   011           00
                                                                                                                                       PSNGR CAR           01 DRVR INJB   59 F  OR-Y         000        000           00
                                                                                                                                                                                 OR<25

01827  N N N      05/20/2015  MARION                1    14                        INTER      3-LEG  N            N CLR   S-1STOP    01 NONE    0  STRGHT                                                     004       29
NONE              Wed   11A   WOODBURN              MN    0   HILLSBORO-SILV HY    E                 SP PED SIG   N DRY   REAR          PRVTE     E  W                                                   000           00
                              WOODBURN UA            38.82    PARK AVE             06           0                 N DAY   PDO          PSNGR CAR           01 DRVR NONE   36 F  OR-Y         026        000           29
No      45  9  5.57  -122 50 27.82                  014000100S00               1                                                                                     OR<25
                                                                                                                                                           02 PSNG NO<5   02 M               000        000           00
                                                                                                                                                           03 PSNG NO<5   04 M               000        000           00

                                                                                                                                     02 NONE    0  STOP
                                                                                                                                        PRVTE     E  W                                                   011  004      00
                                                                                                                                       PSNGR CAR           01 DRVR NONE   89 M  OR-Y         000        000           00
                                                                                                                                                                                 OR<25

03207  N N N      08/24/2015  MARION                1    14                        INTER      3-LEG  N            N CLR   S-1STOP    01 NONE    0  STRGHT                                                     004       07
NONE              Mon    1P   WOODBURN              MN    0   HILLSBORO-SILV HY    E                 STOP SIGN    N DRY   REAR          PRVTE     E  W                                                   000           00
                              WOODBURN UA            38.82    PARK AVE             06           0                 N DAY   INJ          PSNGR CAR           01 DRVR NONE   37 M  OR-Y         026        000           07
No      45  9  5.57  -122 50 27.82                  014000100S00               1                                                                                     OR<25
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140 HILLSBORO-SILVERTON

Park Ave & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P R S W / E A U C O / E L G H R / D C S L K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V# SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02 NONE 0	STOP											
												PRVTE	E W									011	004	00
												PSNGR CAR		01	DRVR	INJC	70	F	OR-Y		000	000		00
																			OR<25					
														02	PSNG	INJC	64	F			000	000		00
04441	N N N	12/23/2011	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										004	27
NONE		Fri 11A	WOODBURN	MN 0	HILLSBORO-SILV HY	W		SP PED SIG	N	DRY	REAR	PRVTE	W E									000		00
			WOODBURN UA	38.82	PARK AVE	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	44	F	OR-Y		016,026	000		27
No		*45 9 5.57 -122 50 27.82*		014000100S00	1														OR<25					
												02 NONE 0	STOP											
												PRVTE	W E									011	004	00
												PSNGR CAR		01	DRVR	NONE	62	F	OR-Y		000	000		00
																			OR<25					
00314	N N N	01/28/2013	MARION	1 14		INTER	3-LEG	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT										004	07
NO RPT		Mon 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		SP PED SIG	N	WET	REAR	PRVTE	W E									000		00
			WOODBURN UA	38.82	PARK AVE	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		026	000		07
No		*45 9 5.57 -122 50 27.82*		014000100S00	1														OR>25					
												02 NONE 0	STOP											
												PRVTE	W E									011	004	00
												PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		000	000		00
																			OR<25					
02198	N N N N N	07/02/2013	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										004	07,27
CITY		Tue 12P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		SP PED SIG	N	DRY	REAR	PRVTE	W E									000		00
			WOODBURN UA	38.82	PARK AVE	06	0		N	DAY	INJ	PSNGR CAR		01	DRVR	INJC	41	F	OTH-Y		043,016,026	000		07,27
No		*45 9 5.57 -122 50 27.82*		014000100S00	1														OR<25					
												02 NONE 0	STOP											
												PRVTE	W E									011	004	00
												PSNGR CAR		01	DRVR	INJC	38	F	EXP		000	000		00
																			OR>25					
														02	PSNG	INJC	20	F			000	000		00
														03	PSNG	INJC	14	F			000	000		00
02895	N N N	08/25/2014	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										004	07
NO RPT		Mon 4P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		STOP SIGN	N	DRY	REAR	PRVTE	W E									000		00
			WOODBURN UA	38.82	PARK AVE	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		026	000		07
No		*45 9 5.57 -122 50 27.82*		014000100S00	1														OR<25					
												02 NONE 0	STOP											
												PRVTE	W E									011	004	00
												PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		000	000		00
																			OR<25					
01908	N N N	06/14/2011	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										004	07
CITY		Tue 4P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		REG-SIGN	N	DRY	REAR	PRVTE	E W									000		00
			WOODBURN UA	38.82	PARK AVE	01	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	85	M	OR-Y		043,026	000		07
No		*45 9 5.57 -122 50 27.82*		014000100S00	1														OR<25					

140 HILLSBORO-SILVERTON

Park Ave & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

```
      S   D
      P   R S W                                     RD#  FC   CONN #                                   INT-TYP                                               SPCL USE
SER#   E A U C O  DATE           COUNTY              CMPT/MLG FIRST  STREET         RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                    A  S
INVEST E L G H R  DAY/TIME       CITY                MILEPNT  SECOND STREET         DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM       PRTC INJ     G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG       URBAN AREA          LRS      INTERSECTION SEQ#     LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY      V# VEH TYPE  TO      P# TYPE SVRTY  E  X  RES   LOC ERROR         ACTN EVENT      CAUSE

                                                                                                                                   02 NONE    0 STOP
                                                                                                                                      PRVTE     E  W                                                    011  004          00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  42  M  OR-Y        000            000               00
                                                                                                                                                                             OR<25

02597  N N N N N 08/04/2013 MARION           1    14                        INTER     3-LEG  N             N CLR   ANGL-OTH   01 NONE    0 STRGHT                                                                      03
CITY            Sun   10P  WOODBURN          MN    0  HILLSBORO-SILV HY     CN               STOP SIGN     N DRY   ANGL          PRVTE     E  W                                                    000               00
                           WOODBURN UA        38.82   PARK AVE              02         0                   N DLIT  PDO           PSNGR CAR         01 DRVR NONE  49  F  OR-Y        000            000               00
No      45  9  5.57  -122 50 27.82           014000100S00              1                                                                                             OR<25

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     S  N                                                    000               00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  46  F  OR-Y        021            000               03
                                                                                                                                                                             OR<25

01091  N N N N N 03/25/2015 MARION           1    14                        INTER     3-LEG  N             N CLD   ANGL-OTH   01 NONE    0 STRGHT                                                                      02
CITY            Wed    2P  WOODBURN          MN    0  HILLSBORO-SILV HY     CN               STOP SIGN     N DRY   ANGL          PRVTE     E  W                                                    000               00
                           WOODBURN UA        38.82   PARK AVE              02         0                   Y DAY   INJ           PSNGR CAR         01 DRVR INJC  55  F  OR-Y        000            000               00
No      45  9  5.57  -122 50 27.82           014000100S00              1                                                                                             OR<25

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     S  N                                                    019               00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  26  F  OR-Y        028            000               02
                                                                                                                                                                             OR<25

02760  N N N N N 08/16/2013 MARION           1    14                        INTER     3-LEG  N             N CLR   O-1 L-TURN 01 NONE    0 TURN-L                                                                      32,02
CITY            Fri    5P  WOODBURN          MN    0  HILLSBORO-SILV HY     CN               UNKNOWN       N DRY   TURN          PRVTE     E  S                                                    000               00
                           WOODBURN UA        38.82   PARK AVE              03         0                   N DAY   INJ           PSNGR CAR         01 DRVR INJC  23  F  N-VAL       052,004,028    000               32,02
No      45  9  5.57  -122 50 27.82           014000100S00              1                                                                                             OR<25

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     W  E                                                    000               00
                                                                                                                                      PSNGR CAR         01 DRVR INJB  53  M  OR-Y        000            000               00
                                                                                                                                                                             OR<25
                                                                                                                                                        02 PSNG INJB  45  F              000            000               00

02254  N N N N N 07/14/2011 MARION           1    14                        INTER     3-LEG  N             N CLR   ANGL-OTH   01 NONE    0 STRGHT                                                                      02
CITY            Thu    1P  WOODBURN          MN    0  HILLSBORO-SILV HY     CN               STOP SIGN     N DRY   ANGL          PRVTE     W  E                                                    000               00
                           WOODBURN UA        38.82   PARK AVE              04         0                   N DAY   PDO           PSNGR CAR         01 DRVR NONE  61  M  OR-Y        000            000               00
No      45  9  5.57  -122 50 27.82           014000100S00              1                                                                                             OR<25

                                                                                                                                   02 NONE    0 STRGHT
                                                                                                                                      PRVTE     S  N                                                    000               00
                                                                                                                                      PSNGR CAR         01 DRVR NONE  59  F  OR-Y        028            000               02
                                                                                                                                                                             OR<25

01690  N N N N N 05/22/2014 MARION           1    14                        INTER     3-LEG  N             N CLR   ANGL-OTH   01 NONE    0 TURN-L                                                                      02
NONE            Thu    6A  WOODBURN          MN    0  HILLSBORO-SILV HY     CN               STOP SIGN     N DRY   TURN          PRVTE     S  W                                                    000               00
                           WOODBURN UA        38.82   PARK AVE              04         0                   N DAY   PDO           PSNGR CAR         01 DRVR NONE  78  F  OR-Y        028            000               02
No      45  9  5.57  -122 50 27.82           014000100S00              1                                                                                             OR<25
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140 HILLSBORO-SILVERTON

Park Ave & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E D / E A U C O / E L G H R / D C S L K (SPEC, DRS W)	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02	NONE 0	STRGHT										
													PRVTE	W E									000	00
													PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		000	000	00
																				OR<25				
00462	N N N	02/08/2015	MARION	1 14		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										02
NO RPT		Sun 3A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	WET	ANGL		PRVTE	W E									000	00
			WOODBURN UA	38.82	PARK AVE	04	0		Y	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		000	000	00
No		*45 9 5.57 -122 50 27.82*		014000100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	S N									019	00
													PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		028	000	02
																				OR<25				

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Parr Rd & Settlemier Ave

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
ANGLE	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2014 TOTAL	0	1	0	1	0	2	0	0	1	0	1	1	0	0
FINAL TOTAL	0	2	0	2	0	3	0	1	1	1	1	2	0	0

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Parr Rd & Settlemier Ave
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E E D	A L C	D R U G S	S C H L	W O R K	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04688	N	N	N	N	N	12/27/2014	16	PARR ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											27,03
CITY						Sat 5P	0	SETTLEMIER AVE	CN		STOP SIGN	N	WET	ANGL		PRVTE	W E									000		00
No						*45 8 9.29 -122 51 54.33*		1	03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		016,021	030		27,03
																							OR<25					
																		02	PSNG	NO<5	01	F			000	000		00
															02	NONE 0	STRGHT											
																PRVTE	NE SW									000		00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJB	51	F			000	000		00
																		03	PSNG	INJB	18	F			000	000		00
01296	N	N	N	N	N	04/10/2015	16	PARR ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R										093	27,02
CITY						Fri 7A	0	SETTLEMIER AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	W SW									000		00
No						*45 8 9.25 -122 51 54.35*		1	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		016,028	038	093	27,02
																							OR<25					
																		02	PSNG	NO<5	01	M			000	000		00
															02	NONE 0	STRGHT											
																PRVTE	NE SW									000		00
																PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJC	32	F			000	000		00

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

Willow St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2013														
BACKING	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2013 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	1	0	1	0	0	1	0	0	1
2012 TOTAL	0	1	0	1	0	1	0	1	0	0	1	0	0	1
FINAL TOTAL	0	1	2	3	0	1	0	2	1	2	1	1	0	1

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

140 HILLSBORO-SILVERTON

Willow St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPED	ALC	DRUG	SCHL	WORK	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03967 CITY No	Y	N	N			11/06/2014 Thu 7A *45 9 3.49 -122 53 31.34*	MARION WOODBURN WOODBURN UA	1 14 MN 0 36.24 014000100S00	 HILLSBORO-SILV HY WILLOW AVE 1	INTER CN 04	3-LEG 0	N STOP SIGN	N N N	RAIN WET DAY	S-1TURN REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E									 000		30,27,07 00
																			01	DRVR	NONE	58	M	OR-Y OR<25		016,050,042	038		30,27,07
																02	NONE 0 PRVTE PSNGR CAR	TURN-L W N									 000		 00
																			01	DRVR	NONE	25	F	OR-Y OR<25		000	000		00
																			02	PSNG	NO<5	04	M			000	000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Woodland Ave & OR 214 Hillsboro-Silverton Hwy (140)

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2014 TOTAL	0	0	2	2	0	0	0	2	0	1	1	2	0	0
FINAL TOTAL	0	0	2	2	0	0	0	2	0	1	1	2	0	0

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

140 HILLSBORO-SILVERTON

Woodland Ave & OR 214 Hillsboro-Silverton Hwy (140)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E E D / D A L C / R U G S / S C H L / W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01097	N N N	04/05/2014	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
NONE		Sat 10A	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	E W									000	00
			WOODBURN UA	36.52		WOODLAND AVE	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	F	OR-Y		097	000	00
No		*45 9 3.71 -122 53 10.85*		014000100S00		1															OR<25				
													02	NONE 0	STRGHT										
														PRVTE	N S									000	00
														PSNGR CAR		01	DRVR	NONE	00	M	UNK		097	000	00
																					UNK				
00672	N N N	02/27/2014	MARION	1	14		INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	U-TURN										08
NONE		Thu 7P	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W W									000	00
			WOODBURN UA	36.52		WOODLAND AVE	03	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		008,006	000	08
No		*45 9 3.71 -122 53 10.85*		014000100S00		1															OR<25				
													02	NONE 0	TURN-L										
														PRVTE	W N									000	00
														PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	00
																					UNK				

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

Young St & OR 99E
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	2	0	2	0	3	0	2	0	1	1	2	0	0
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	2	3	5	0	2	2	2	3	3	2	5	0	0
2015 TOTAL	0	4	4	8	0	5	2	4	4	4	4	8	0	0
YEAR: 2014														
ANGLE	0	2	0	2	0	3	0	1	1	2	0	2	0	0
PEDESTRIAN	0	1	0	1	0	1	0	1	0	0	1	1	0	0
REAR-END	0	1	0	1	0	2	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	3	3	0	0	0	2	1	1	2	3	0	0
2014 TOTAL	0	4	3	7	0	6	0	4	3	4	3	7	0	0
YEAR: 2013														
ANGLE	0	3	0	3	0	4	0	3	0	2	1	3	0	0
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	1	0	1
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	2	0	2	0	0
2013 TOTAL	0	4	2	6	0	5	0	5	1	5	1	6	0	1
YEAR: 2012														
ANGLE	0	0	2	2	0	0	0	1	1	0	2	2	0	0
REAR-END	0	1	1	2	0	1	0	1	0	2	0	2	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	1	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	1	2	1	2	3	0	0
2012 TOTAL	0	2	6	8	0	2	1	4	3	4	4	8	0	0
YEAR: 2011														
ANGLE	0	0	2	2	0	0	0	1	1	2	0	2	0	0
BACKING	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	3	0	3	0	5	0	3	0	1	2	3	0	0
2011 TOTAL	0	4	3	7	0	6	0	6	1	4	3	7	0	0
FINAL TOTAL	0	18	18	36	0	24	3	23	12	21	15	36	0	1

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

081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S P E L D / D R A C U S G C R H S W O R L K	DATE DAY/TIME *LAT/LONG*	COUNTY CITY URBAN AREA	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00833	N N N	03/06/2015	MARION	1 14		INTER	CROSS	N	N	FOG	S-OTHER	01	NONE 1	TURN-R											08
CITY		Fri 8A	WOODBURN	MN 0	PACIFIC HY 99E	NE		TRF SIGNAL	N	DRY	TURN		PRVTE	SE NE									000		00
			WOODBURN UA	32.87	YOUNG ST	05	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	35	M	SUSP		006	000		08
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															N-RES					
												02	NONE 0	TURN-R											
													PRVTE	SE NE									000		00
													PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																				OR<25					
															02	PSNG	NO<5	02	M			000	000		00
03671	N Y N N N	10/18/2014	MARION	1 14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	STRGHT											04,18,19
CITY		Sat 8P	WOODBURN	MN 0	PACIFIC HY 99E	NE		TRF SIGNAL	N	DRY	PED		PRVTE	NE SW									000		00
			WOODBURN UA	32.87	YOUNG ST	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		000	000		00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25					
														STRGHT	01	PED	INJA	49	M		01	020	000		04,18,19
														NW SE											
04645	N N N N N	12/23/2014	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY		Tue 8A	WOODBURN	MN 0	PACIFIC HY 99E	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE SW									000		00
			WOODBURN UA	32.87	YOUNG ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		043,026	000		07
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25					
												02	NONE 0	STOP											
													PRVTE	NE SW									011		00
													PSNGR CAR		01	DRVR	INJC	26	F	NONE		000	000		00
																				OR<25					
															02	PSNG	INJC	49	F			000	000		00
04655	N N N N N	12/27/2013	MARION	1 14		INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										092,053	26
CITY		Fri 1P	WOODBURN	MN 0	PACIFIC HY 99E	SW		TRF SIGNAL	N	DRY	FIX		PRVTE	NE SW									007	092,053	26
			WOODBURN UA	32.87	YOUNG ST	05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		080,081	000		00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25					
02317	N N N	07/19/2011	MARION	1 14		INTER		N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE		Tue 1P	WOODBURN	MN 0	PACIFIC HY 99E	SW		L-GRN-SIG	N	DRY	ANGL		PRVTE	NW SE									018		00
			WOODBURN UA	32.87	YOUNG ST	06	0		Y	DAY	PDO		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		028	000		02
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR>25					
												02	NONE 0	STOP											
													PRVTE	SW NE									011		00
													PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		000	000		00
																				OR>25					
02917	N N N	09/04/2011	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Sun 12P	WOODBURN	MN 0	PACIFIC HY 99E	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
			WOODBURN UA	32.87	YOUNG ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		026	000		07
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25					
															02	PSNG	NO<5	01	M			000	000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

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      S  D
      P  R S W                                RD#  FC   CONN #                            INT-TYP                                    SPCL USE
SER#   E A U C O  DATE          COUNTY         CMPT/MLG  FIRST  STREET       RD CHAR  (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY   MOVE                       A  S
INVEST E L G H R  DAY/TIME      CITY           MILEPNT   SECOND STREET       DIRECT      LEGS   TRAF-    RNDBT SURF  COLL TYP      OWNER      FROM       PRTC INJ     G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG      URBAN AREA     LRS       INTERSECTION SEQ#   LOCTN    (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE   TO      P# TYPE SVRTY   E  X  RES   LOC  ERROR       ACTN EVENT     CAUSE

                                                                                                                            02 NONE   0  STOP
                                                                                                                               PRVTE     SW NE                                                 011            00
                                                                                                                              PSNGR CAR           01 DRVR NONE  20  F  OR-Y         000          000            00
                                                                                                                                                                     OR<25
                                                                                                                                                  02 PSNG INJC  15  F               000          000            00

04058  N N N N N  11/30/2011  MARION         1    14                         INTER     CROSS   N             N CLR   O-1STOP    01 NONE   0  BACK                                                               10
CITY              Wed    7P   WOODBURN       MN    0   PACIFIC HY 99E        SW                L-GRN-SIG     N DRY   BACK          PRVTE     NE SW                                                 000            00
                              WOODBURN UA     32.87    YOUNG ST              06           0                  N DLIT  PDO          PSNGR CAR           01 DRVR NONE  46  M  OTH-Y        011          000            10
No      45  8 13.29  -122 50 38.07           008100100S00               1                                                                                                    N-RES

                                                                                                                            02 NONE   0  STOP
                                                                                                                               PRVTE     SW NE                                                 011            00
                                                                                                                              PSNGR CAR           01 DRVR NONE  26  M  OR-Y         000          000            00
                                                                                                                                                                     OR<25

02074  N N N      06/24/2012  MARION         1    14                         INTER     CROSS   N             N UNK   S-1STOP    01 NONE   0  STRGHT                                                             07
NONE              Sun    1P   WOODBURN       MN    0   PACIFIC HY 99E        SW                TRF SIGNAL    N UNK   REAR          PRVTE     SW NE                                                 000            00
                              WOODBURN UA     32.87    YOUNG ST              06           0                  N DAY   PDO          PSNGR CAR           01 DRVR NONE  81  M  OR-Y         026          000            07
No      45  8 13.29  -122 50 38.07           008100100S00               1                                                                                                    OR<25

                                                                                                                            02 NONE   0  STOP
                                                                                                                               PRVTE     SW NE                                                 011            00
                                                                                                                              PSNGR CAR           01 DRVR NONE  48  F  OR-Y         000          000            00
                                                                                                                                                                     OR<25

02750  N N N      08/16/2012  MARION         1    14                         INTER     CROSS   N             N CLR   S-1STOP    01 NONE   0  STRGHT                                                             07
NO RPT            Thu    8P   WOODBURN       MN    0   PACIFIC HY 99E        SW                TRF SIGNAL    N DRY   REAR          PRVTE     SW NE                                                 000            00
                              WOODBURN UA     32.87    YOUNG ST              06           0                  N DAY   INJ          PSNGR CAR           01 DRVR INJB  32  M  OR-Y         026          000            07
No      45  8 13.29  -122 50 38.07           008100100S00               1                                                                                                    OR<25

                                                                                                                            02 NONE   0  STOP
                                                                                                                               PRVTE     SW NE                                                 011            00
                                                                                                                              PSNGR CAR           01 DRVR NONE  35  M  OR-Y         000          000            00
                                                                                                                                                                     OR<25

03288  N N N N N  09/23/2014  MARION         1    14                         INTER     CROSS   N             N RAIN  ANGL-STP   01 NONE   0  TURN-R                                                             08
CITY              Tue    9P   WOODBURN       MN    0   PACIFIC HY 99E        NW                L-GRN-SIG     N WET   TURN          PRVTE     NE NW                                                 000            00
                              WOODBURN UA     32.87    YOUNG ST              06           0                  N DLIT  PDO          PSNGR CAR           01 DRVR NONE  00  M  UNK          001          000            08
No      45  8 13.29  -122 50 38.07           008100100S00               1                                                                                                    OR<25

                                                                                                                            02 NONE   0  STOP
                                                                                                                               PRVTE     NW SE                                                 012            00
                                                                                                                              PSNGR CAR           01 DRVR NONE  00  M  UNK          000          000            00
                                                                                                                                                                     OR<25

04255  N N N N N  12/11/2011  MARION         1    14                         INTER     CROSS   N             N CLD   O-1 L-TURN 01 NONE   0  STRGHT                                                    013      02
CITY              Sun    5P   WOODBURN       MN    0   PACIFIC HY 99E        CN                TRF SIGNAL    N DRY   TURN          PRVTE     NE SW                                                 000            00
                              WOODBURN UA     32.87    YOUNG ST              01           0                  N DUSK  INJ          PSNGR CAR           01 DRVR NONE  50  M  OR-Y         000          000            00
No      45  8 13.29  -122 50 38.07           008100100S00               1                                                                                                    OR<25
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081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E D / E A U C O / E L G H R / R S W D C S L K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL / TRAF- CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V# / SPCL USE TRLR QTY / OWNER / VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02 NONE 0	TURN-L										
												PRVTE	SW NW									000	00
												PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		004,028	000	02
																			OR<25				
														02	PSNG	INJB	19	F			000	000	00
												03 NONE 0	STOP										
												PRVTE	NW SE									022	00
												PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		000	000	00
																			OR<25				
00726	N N N	02/29/2012	MARION	1 14		INTER	CROSS	N	N	SNOW	ANGL-OTH	01 NONE 0	STRGHT										04
NONE		Wed 6A	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	SNO	ANGL	PRVTE	SE NW									000	00
			WOODBURN UA	32.87	YOUNG ST	02	0		N	DAWN	PDO	PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		097	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1														OR<25				
												02 NONE 0	STRGHT										
												PRVTE	SW NE									000	00
												PSNGR CAR		01	DRVR	NONE	00	M	UNK		097	000	00
																			OR<25				
00929	N N N	03/16/2012	MARION	1 14		INTER	CROSS	N	N	CLR	S-OTHER	01 NONE 1	TURN-R										06
NO RPT		Fri 10A	WOODBURN	MN 0	PACIFIC HY 99E	CN		UNKNOWN	N	DRY	SS-O	PRVTE	SE NE									000	00
			WOODBURN UA	32.87	YOUNG ST	02	0		N	DAY	PDO	SEMI TOW		01	DRVR	NONE	58	M	OTH-Y		001	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1														N-RES				
												02 NONE 0	TURN-R										
												PRVTE	SE NE									031	00
												PSNGR CAR		01	DRVR	NONE	62	F	OR-Y		031	000	06
																			OR<25				
03306	N N N	10/01/2012	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT										04
NONE		Mon UNK	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	SE NW									000	00
			WOODBURN UA	32.87	YOUNG ST	02	0		N	DLIT	PDO	PSNGR CAR		01	DRVR	NONE	00	U	UNK		020	000	04
No		*45 8 13.29 -122 50 38.07*		008100100S00	1														UNK				
												02 NONE 0	STRGHT										
												PRVTE	SW NE									000	00
												PSNGR CAR		01	DRVR	NONE	44	M	OR-Y		000	000	00
																			OR<25				
00659	N N N N N	02/21/2015	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT									013	04
CITY		Sat 9A	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	02	0		N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		020	000	04
No		*45 8 13.29 -122 50 38.07*		008100100S00	1														OR<25				
												02 NONE 0	STRGHT										
												PRVTE	SE NW									000 013	00
												PSNGR CAR		01	DRVR	INJB	58	F	OR-Y		000	000	00
																			OR<25				
														02	PSNG	INJC	61	M			000	000	00

```
      S   D
      P   R S W                           RD#  FC   CONN #                          INT-TYP                                  SPCL USE
SER#  E A U C O  DATE       COUNTY        CMPT/MLG  FIRST  STREET      RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP      TRLR QTY  MOVE                    A  S
INVEST E L G H R DAY/TIME   CITY          MILEPNT   SECOND STREET      DIRECT    LEGS    TRAF-    RNDBT SURF  COLL TYP       OWNER     FROM        PRTC INJ    G  E  LICNS PED
UNLOC? D C S L K LAT/LONG   URBAN AREA    LRS       INTERSECTION SEQ#  LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V# VEH TYPE  TO       P# TYPE SVRTY  E  X  RES   LOC ERROR      ACTN EVENT     CAUSE

                                                                                                                        03 NONE   0 STOP
                                                                                                                           PRVTE     NW SE                                                  011            00
                                                                                                                           PSNGR CAR          01 DRVR NONE  36 M NONE      000               000            00
                                                                                                                                                                 OR<25

00968  N N N     03/20/2015 MARION        1    14                      INTER     CROSS   N            N CLR  O-OTHER    01 NONE   0 TURN-L                                                                 02
NONE             Fri     6A WOODBURN      MN    0   PACIFIC HY 99E     CN                TRF SIGNAL   N DRY  TURN          PRVTE     NW NE                                                  000            00
                            WOODBURN UA    32.87    YOUNG ST           02          0                  N DAY  PDO           PSNGR CAR          01 DRVR NONE  86 F UNK       028,004           000            02
No     45  8 13.29  -122 50 38.07         008100100S00             1                                                                                     OR<25

                                                                                                                        02 UNKN   0 TURN-R
                                                                                                                           UNKN      SE NE                                                  000            00
                                                                                                                           UNKNOWN            01 DRVR NONE  00 M UNK       000               000            00
                                                                                                                                                                 OR<25

04079  N N N N N 10/23/2015 MARION        1    14                      INTER     CROSS   N            N CLR  ANGL-OTH   01 NONE   0 STRGHT                                                                 04
CITY             Fri     7P WOODBURN      MN    0   PACIFIC HY 99E     CN                TRF SIGNAL   N DRY  ANGL          PRVTE     SW NE                                                  000            00
                            WOODBURN UA    32.87    YOUNG ST           02          0                  N DLIT INJ           PSNGR CAR          01 DRVR NONE  37 M NONE      020               000            04
No     45  8 13.29  -122 50 38.07         008100100S00             1                                                                                     OR<25

                                                                                                                        02 NONE   0 STRGHT
                                                                                                                           PRVTE     SE NW                                                  000            00
                                                                                                                           PSNGR CAR          01 DRVR INJB  39 F OR-Y      000               000            00
                                                                                                                                                                 OR<25

04841  N N N     12/05/2015 MARION        1    14                      INTER     CROSS   N            N CLR  O-1 L-TURN 01 NONE   0 TURN-L                                                                 02
NONE             Sat     3A WOODBURN      MN    0   PACIFIC HY 99E     CN                TRF SIGNAL   N WET  TURN          PRVTE     NW NE                                                  000            00
                            WOODBURN UA    32.87    YOUNG ST           02          0                  N DLIT PDO           PSNGR CAR          01 DRVR NONE  43 M OR-Y      028,004           000            02
No     45  8 13.29  -122 50 38.07         008100100S00             1                                                                                     OR<25

                                                                                                                        02 NONE   0 STRGHT
                                                                                                                           PRVTE     SE NW                                                  000            00
                                                                                                                           PSNGR CAR          01 DRVR NONE  00 M UNK       000               000            00
                                                                                                                                                                 UNK

00439  N N N     02/11/2011 MARION        1    14                      INTER     CROSS   N            N CLD  O-1 L-TURN 01 NONE   0 TURN-L                                                                 02
CITY             Fri     8P WOODBURN      MN    0   PACIFIC HY 99E     CN                TRF SIGNAL   N DRY  TURN          PRVTE     SE SW                                                  000            00
                            WOODBURN UA    32.87    YOUNG ST           03          0                  N DLIT INJ           PSNGR CAR          01 DRVR INJC  32 F OR-Y      004,028           000            02
No     45  8 13.29  -122 50 38.07         008100100S00             1                                                                                     OR<25
                                                                                                                                              02 PSNG INJC  29 F           000               000            00

                                                                                                                        02 NONE   0 STRGHT
                                                                                                                           PRVTE     NW SE                                                  000            00
                                                                                                                           PSNGR CAR          01 DRVR INJB  52 F OR-Y      000               000            00
                                                                                                                                                                 OR<25

02471  N N N N N 08/01/2011 MARION        1    14                      INTER     3-LEG   N            N CLR  O-1 L-TURN 01 NONE   0 STRGHT                                                       013       02
CITY             Mon    12P WOODBURN      MN    0   PACIFIC HY 99E     CN                TRF SIGNAL   N DRY  TURN          PRVTE     NW SE                                                  000            00
                            WOODBURN UA    32.87    YOUNG ST           03          0                  N DAY  INJ           PSNGR CAR          01 DRVR INJC  41 F OR-Y      000               000            00
No     45  8 13.29  -122 50 38.07         008100100S00             1                                                                                     OR<25
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081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E D / R A U C / S L G H / W C S L / O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P# PRTC TYPE INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0	TURN-L									
													PRVTE	SE SW							000	013	00
													PSNGR CAR		01 DRVR NONE	16	M	OR-Y		004,028	000		02
																		OR<25					
												03	NONE 0	STOP									
													PRVTE	NE SW							022		00
													PSNGR CAR		01 DRVR NONE	34	M	OR-Y		000	000		00
																		OR<25					
04074	N N N	11/30/2011	MARION	1 14		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT									04
CITY		Wed 7A	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	SE NW							000		00
			WOODBURN UA	32.87	YOUNG ST	03	0		N	DAY	PDO		PSNGR CAR		01 DRVR NONE	57	M	OR-Y		000	000		00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1													OR<25					
												02	NONE 0	STRGHT									
													PRVTE	NE SW							000		00
													PSNGR CAR		01 DRVR NONE	59	M	OR-Y		020	000		04
																		OR>25					
00348	N N N	01/29/2012	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT									04
NONE		Sun 6P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE SW							000		00
			WOODBURN UA	32.87	YOUNG ST	03	0		N	DLIT	PDO		PSNGR CAR		01 DRVR NONE	19	M	OR-Y		020	000		04
No		*45 8 13.29 -122 50 38.07*		008100100S00	1													OR<25					
												02	NONE 0	TURN-L									
													PRVTE	SW NW							000		00
													PSNGR CAR		01 DRVR NONE	30	F	OR-Y		000	000		00
																		OR<25					
															02 PSNG NO<5	02	M			000	000		00
															03 PSNG NO<5	03	F			000	000		00
01642	N N N N N	05/16/2012	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT									02
CITY		Wed 2P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW SE							000		00
			WOODBURN UA	32.87	YOUNG ST	03	0		N	DAY	INJ		PSNGR CAR		01 DRVR INJC	33	F	OR-Y		000	000		00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1													OR<25					
												02	NONE 0	TURN-L									
													PRVTE	SE SW							000		00
													PSNGR CAR		01 DRVR NONE	48	M	OR-Y		004,028	000		02
																		OR>25					
00044	N N N	01/04/2013	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT									04
CITY		Fri 6P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NW SE							000		00
			WOODBURN UA	32.87	YOUNG ST	03	0		N	DLIT	INJ		PSNGR CAR		01 DRVR NONE	44	M	OR-Y		097	000		00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1													OR>25					
												02	NONE 0	STRGHT									
													PRVTE	NE SW							000		00
													PSNGR CAR		01 DRVR INJC	39	F	OR-Y		097	000		00
																		OR<25					
															02 PSNG INJC	15	M			000	000		00

081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E A U C O / D E L G H R / D C S L K (S P R S W)	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															03	PSNG	NO<5	04	M			000	000	00
04221	N N N	11/23/2014	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
NONE		Sun 4P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE SW									000	00
			WOODBURN UA	32.87	YOUNG ST	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK		028,004	000	02
No		45 8 13.29 -122 50 38.07		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	NW SE									000	00
													PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		000	000	00
																				OR<25				
04119	N N N N N	12/02/2012	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		Sun 7P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE SE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		004,028	000	02
No		45 8 13.29 -122 50 38.07		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	SW NE									000	00
													PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		000	000	00
																				OR<25				
00397	N N N	02/07/2013	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE		Thu 3P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		000	000	00
No		45 8 13.29 -122 50 38.07		008100100S00	1															OR>25				
												02	NONE 0	TURN-L										
													PRVTE	NE SE									000	00
													PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		004,028	000	02
																				OR>25				
02249	Y N N N N	07/07/2013	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04,30
CITY		Sun 3P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	NONE		020,050	000	04,30
No		45 8 13.29 -122 50 38.07		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	NW SE									000	00
													PSNGR CAR		01	DRVR	INJC	28	M	OR-Y		000	000	00
																				OR<25				
02560	N N N N N	07/30/2013	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		Tue 6A	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	29	M	OR-Y		020	000	04
No		45 8 13.29 -122 50 38.07		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	NW SE									000	00
													PSNGR CAR		01	DRVR	NONE	63	M	OR-Y		000	000	00
																				OR<25				

081 PACIFIC HIGHWAY EAST

Young St & OR 99E
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	S P E E D / D A L C / R U G S / S C H L / W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03162	N N N N N	09/16/2013	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		Mon 5P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		000	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25				
															02	PSNG	INJC	24	M			000	000	00
												02	NONE 0	TURN-L										
													PRVTE	NE SE									000	00
													PSNGR CAR		01	DRVR	NONE	85	M	OR-Y		004,028	000	02
																				OR>25				
00937	N N N N N	03/22/2014	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		Sat 6P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NW SE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	22	M	SUSP		097	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25				
												02	NONE 0	STRGHT										
													PRVTE	SW NE									000	00
													PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		097	000	00
																				OR<25				
03676	N N N	10/18/2014	MARION	1 14		INTER	CROSS	N	N	FOG	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE		Sat 10P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y		000	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25				
												02	NONE 0	TURN-L										
													PRVTE	NE SE									000	00
													PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		004,028	000	02
																				OR<25				
04658	N N N	11/23/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										04
CITY		Mon 4P	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW NE									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJB	71	F	OR-Y		097	000	00
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR<25				
												02	NONE 0	TURN-L										
													PRVTE	NE SE									000	00
													PSNGR CAR		01	DRVR	NONE	60	F	OR-Y		097	000	00
																				OR>25				
05162	N N N	12/22/2015	MARION	1 14		INTER	CROSS	N	N	CLD	S-OTHER	01	NONE 1	TURN-R										08
CITY		Tue 8A	WOODBURN	MN 0	PACIFIC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW E									000	00
			WOODBURN UA	32.87	YOUNG ST	04	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	61	M	OR-Y		006	000	08
No		*45 8 13.29 -122 50 38.07*		008100100S00	1															OR>25				
												02	NONE 0	TURN-R										
													PRVTE	SW E									000	00
													PSNGR CAR		01	DRVR	INJC	60	F	OR-Y		000	000	00
																				OR<25				

140 HILLSBORO-SILVERTON

Young St & OR 99E
January 1, 2011 through December 31, 2015

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       S   D
       P   R S W                                  RD#  FC   CONN #                          INT-TYP                                    SPCL USE
SER#   E A U C O  DATE       COUNTY               CMPT/MLG  FIRST  STREET        RD CHAR (MEDIAN)  INT-REL  OFFRD WTHR  CRASH TYP     TRLR QTY  MOVE                    A  S
INVEST E L G H R  DAY/TIME   CITY                 MILEPNT   SECOND STREET        DIRECT     LEGS   TRAF-    RNDBT SURF  COLL TYP      OWNER     FROM      PRTC INJ      G  E  LICNS PED
UNLOC? D C S L K  LAT/LONG   URBAN AREA           LRS       INTERSECTION SEQ#    LOCTN   (#LANES)  CNTL     DRVWY LIGHT SVRTY     V#  VEH TYPE  TO     P# TYPE SVRTY  E  X  RES   LOC  ERROR         ACTN EVENT        CAUSE

00379  N N N N N 02/06/2014  MARION               1    14                        INTER     CROSS   N            N SNOW  ANGL-OTH  01 NONE    0  STRGHT                                                      013          04
CITY             Thu     3P  WOODBURN             MN    0   PACIFIC HY 99E       CN                TRF SIGNAL   N SNO   ANGL          PRVTE     NE SW                                                  000  013          00
                             WOODBURN UA           39.31    YOUNG ST             03          0                  N DAY   INJ          PSNGR CAR         01 DRVR NONE   20  F  OTH-Y       020          000               04
No      45  8 13.29  -122 50 38.07                014000100S00               1                                                                                           OR<25

                                                                                                                                  02 NONE    0  STRGHT
                                                                                                                                     PRVTE     NW SE                                                  000               00
                                                                                                                                    PSNGR CAR         01 DRVR INJC   25  M  OR-Y        000          000               00
                                                                                                                                                                             OR<25

                                                                                                                                  03 NONE    0  STOP
                                                                                                                                     PRVTE     SW NE                                                  011  013          00
                                                                                                                                    PSNGR CAR         01 DRVR INJC   60  M  OR-Y        000          000               00
                                                                                                                                                                             OR<25

                                                                                                                                  04 NONE    0  STOP
                                                                                                                                     PRVTE     SW NE                                                  011               00
                                                                                                                                    PSNGR CAR         01 DRVR NONE   51  F  OR-Y        000          000               00
                                                                                                                                                                             OR<25
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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF WOODBURN, MARION COUNTY

Young St & OR 99E

January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE DAY/TIME *LAT/LONG*	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04984	N	N	N			12/11/2015	16	PACIFIC HY 99E	INTER	CROSS	N	N	RAIN	S-1STOP	01	UNKN 0	STRGHT										29
NONE						Fri 7P	0	YOUNG ST	NW		TRF SIGNAL	N	WET	REAR		UNKN	NW SE									000	00
No						*45 8 13.30 -122 50 38.09*		1	06	0		N	DLIT	PDO		UNKNOWN		01	DRVR	NONE	00	U	UNK		026	000	29
																							UNK				
															02	NONE 0	STOP										
																PRVTE	NW SE									011	00
																PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		000	000	00
																							OR<25				
																		02	PSNG	NO<5	03	M			000	000	00
																		03	PSNG	NO<5	01	F			000	000	00

ACTION CODE TRANSLATION LIST

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

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

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

CRASH TYPE CODE TRANSLATION LIST

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

DRIVER LICENSE CODE TRANSLATION LIST

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

DRIVER RESIDENCE CODE TRANSLATION LIST

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

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHI(
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

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

HIGHWAY COMPONENT TRANSLATION LIST

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

INJURY SEVERITY CODE TRANSLATION LIST

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

LIGHT CONDITION CODE TRANSLATION LIST

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

MEDIAN TYPE CODE TRANSLATION LIST

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

MILEAGE TYPE CODE TRANSLATION LIST

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

MOVEMENT TYPE CODE TRANSLATION LIST

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

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

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

PARTICIPANT TYPE CODE TRANSLATION LIST

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

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

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

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

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

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

TECHNICAL MEMORANDUM #4

Future Systems Conditions

Woodburn Transportation System Plan Update

Date:	March 29, 2019	Project #: 21071.4
To:	Chris Kerr & Eric Liljequist, City of Woodburn Michael Duncan, Oregon Department of Transportation, Region 2 Technical Advisory Committee and Community Advisory Committee	
From:	Matt Hughart and Molly McCormick, Kittleson & Associates, Inc.	
Subject:	Technical Memo #4: Future Systems Conditions (Subtask 4.1)	

This memorandum documents the future transportation system conditions within the City of Woodburn and its urban growth boundary. The information presented in this memorandum will serve as a baseline for evaluating transportation system needs and identifying potential solutions for the Transportation System Plan (TSP) update, in coordination with the analysis conducted under existing system conditions in *Technical Memo #3: Existing Conditions Inventory and Analysis*.

FUTURE TRAVEL FORECASTING PROCESS

Woodburn's 2040 traffic volume forecasts were developed using the following steps and components:

- Woodburn's travel demand forecast model was updated and used as the main tool to project future travel conditions on the study area infrastructure.
- The travel demand model was refined to reflect existing and fiscally constrained future circulation infrastructure.
- Portland State University Population Research Center (PRC) population forecast and employment data for the year 2040 were incorporated into the travel demand model based on feedback from city staff.

Woodburn Travel Demand Model

A travel demand forecast model was originally built for the City of Woodburn's existing transportation system plan. Using the expertise of the Oregon Department of Transportation's (ODOT) Transportation Planning Analysis Unit (TPAU), this forecasting model was updated and used to help identify future travel demand through the year 2040. The model includes all state highways, and local arterials, collectors, and significant local streets within and surrounding the TSP study area.

Land Use Forecasts

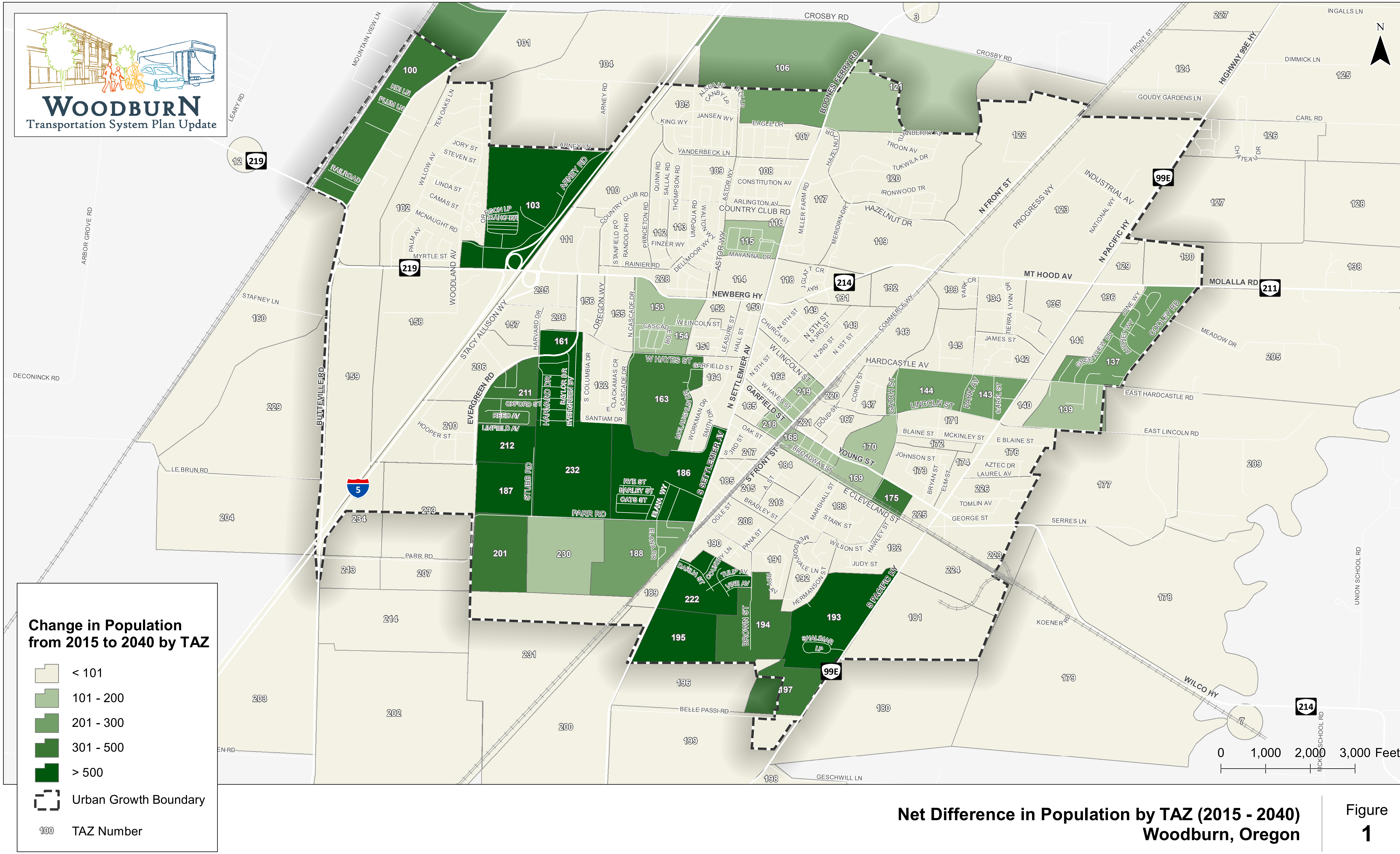
Land use plays an important role in developing a comprehensive transportation system. The amount of land that is planned to be developed, the type of land uses, and how the land uses are mixed together have a direct impact on how the transportation system will function in the future.

Based on feedback from city and project team staff, land use assumptions for base and future year conditions were incorporated into the travel demand model. The data includes base year 2015 and forecast year 2040 population, household, and employment estimates for the city by Transportation Analysis Zone (TAZ). There are 137 TAZs included within the Woodburn travel demand model. Figures 1, 2, and 3 illustrate the TAZs and the population, household, and employment changes expected between base year 2015 and forecast year 2040. Table 1 summarizes the overall system TAZ data for base year 2015 and forecast year 2040 conditions. As shown in Table 1, the growth in population and households over the 25-year period is expected to be approximately 2% per year while the growth in employment is expected to be closer to 3% per year.

Table 1: Woodburn UGB Land Use Summary

Land Use	2015	2040	Change	Percent Change
Population	25,610	38,802	+13,192	+51.5%
Households	8,428	12,428	+4,000	+47.5%
Employment	10,452	17,748	+7,296	+69.8%

As land uses change in proportion to each other (i.e. there is a significant increase in employment relative to household growth), there will be a shift in the overall operation of the transportation system. Retail land uses generate a higher number of trips per acre of land than residential and other land uses. The location and design of retail land uses in a community can greatly affect transportation system operation. Additionally, if a community is homogeneous in land use character (i.e. all employment or all residential), the transportation system must support significant trips coming to or from the community rather than within the community. Typically, there should be a mix of residential, commercial, and employment type land uses so that some residents may work and shop locally, reducing the need for residents to travel long distances. The data shown in Table 1 indicates that significant growth is expected in Woodburn in the coming years, particularly employment opportunities.

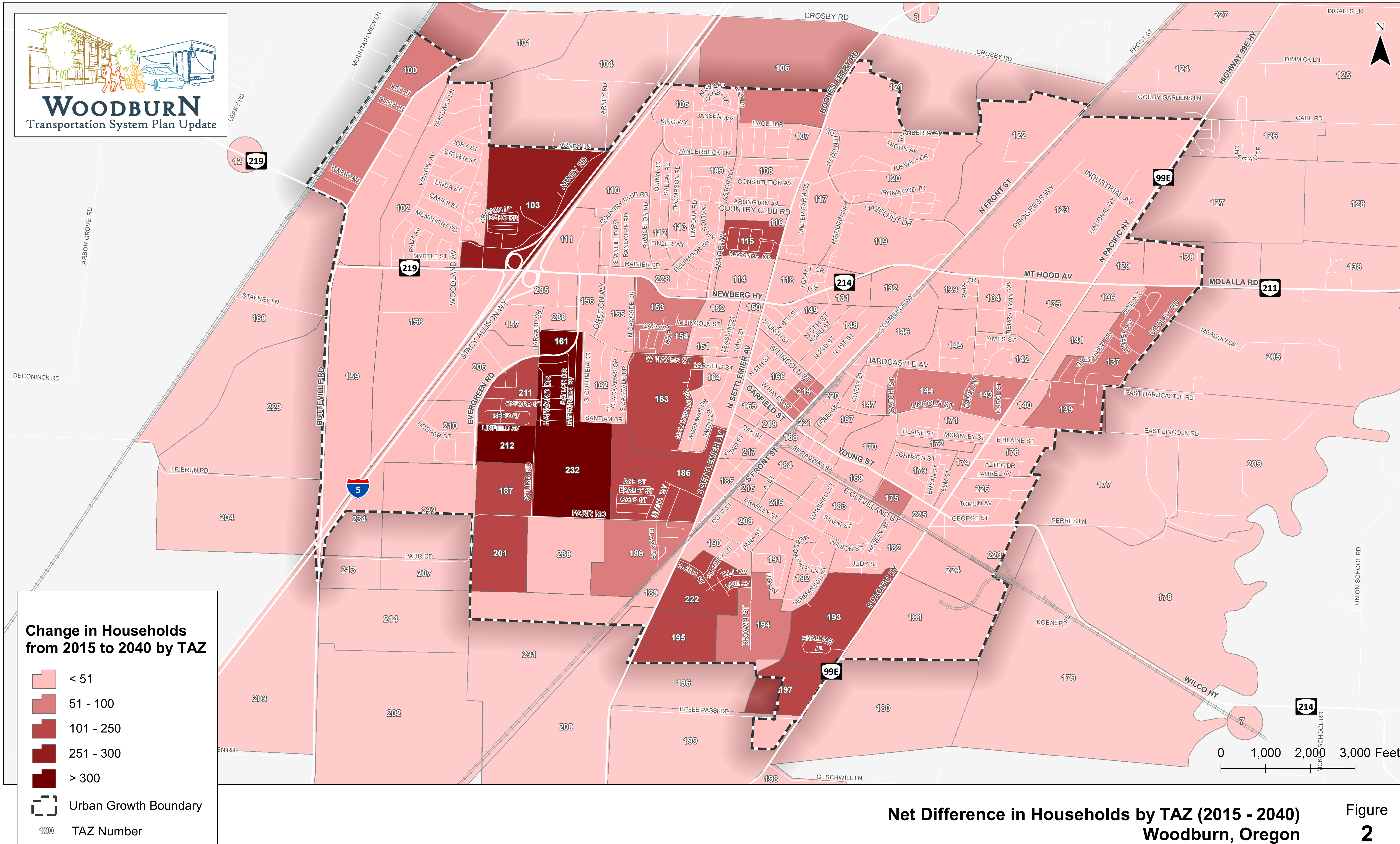


Net Difference in Population by TAZ (2015 - 2040)
Woodburn, Oregon

Figure
1

H:\21\21071 - Woodburn TSP Update\gis\TM4\TAZ Population No Build.mxd - mmccormick - 11:24 AM 2/4/2019

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation, TPAU

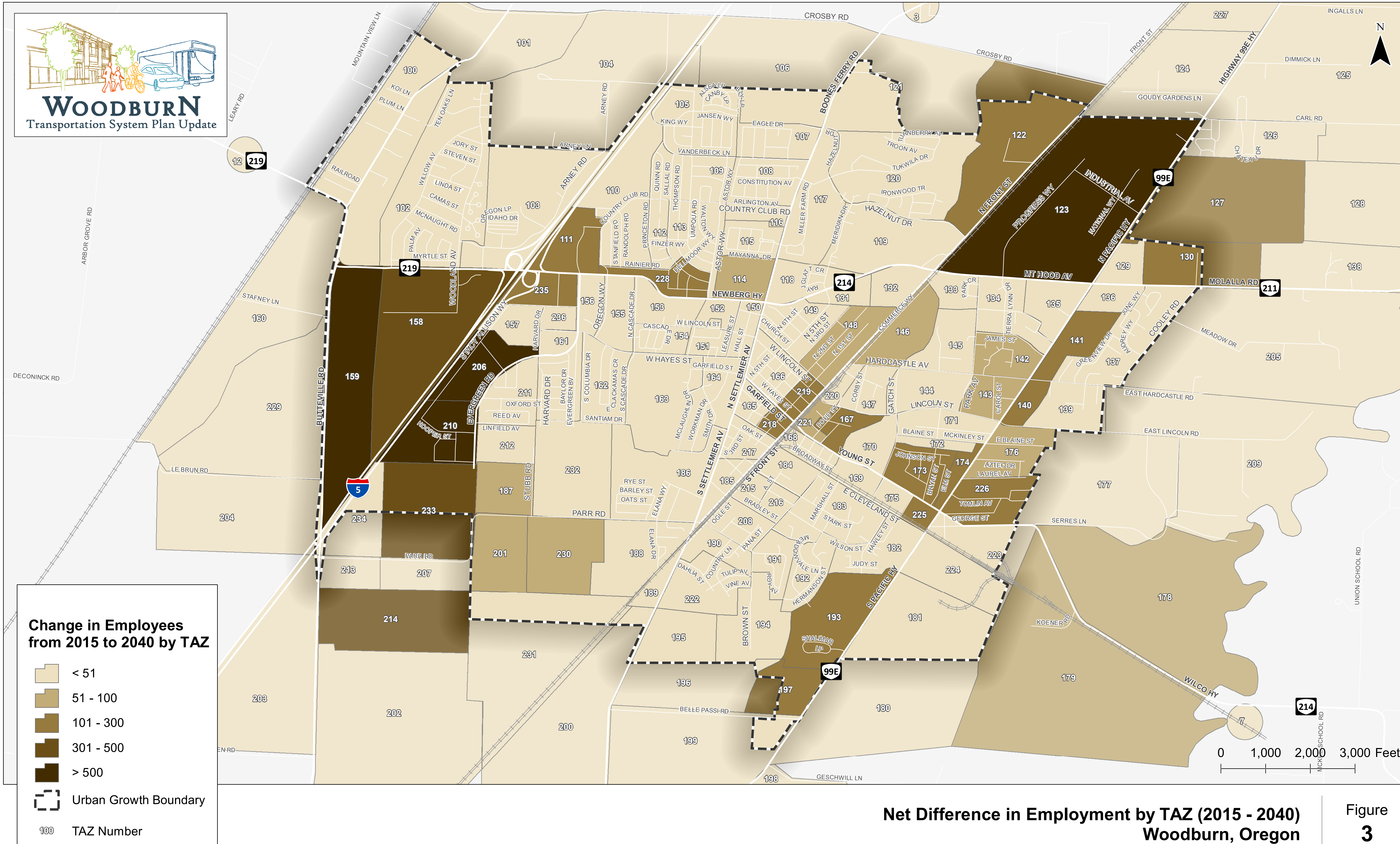


Net Difference in Households by TAZ (2015 - 2040)
Woodburn, Oregon

Figure
2

H:\21\21071 - Woodburn TSP Update\gis\TM4\TAZ Households No Build.mxd - mmccormick - 11:24 AM 2/4/2019

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation, TPAU



Net Difference in Employment by TAZ (2015 - 2040)
Woodburn, Oregon

Figure 3

H:\21\21071 - Woodburn TSP Update\gis\TM4\TAZ Employment No Build.mxd - mmccormick - 11:25 AM 2/4/2019

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation, TPAU

FUTURE NO-BUILD SCENARIO

The following sections summarize the additional analysis completed under the future no-build scenario conditions.

Multi-modal Future Analysis

Although Bicycle Level of Traffic Stress (BLTS) analysis, Pedestrian Level of Traffic Stress (PLTS) analysis, and qualitative multimodal assessment for transit modes were completed under existing conditions in *Technical Memo #3: Existing Conditions Inventory and Analysis*, these methodologies do not rely on volume characteristics to complete the analyses. Therefore, the no-build scenario that does not propose geometric, posted speed, illumination, or other physical changes to the transportation system does not alter the results of these assessments. All modal systems will be further analyzed for needs and potential alternative solutions in *Technical Memo #5: Alternatives Analysis and Funding Program.*

Bicycle Level of Traffic Stress Analysis

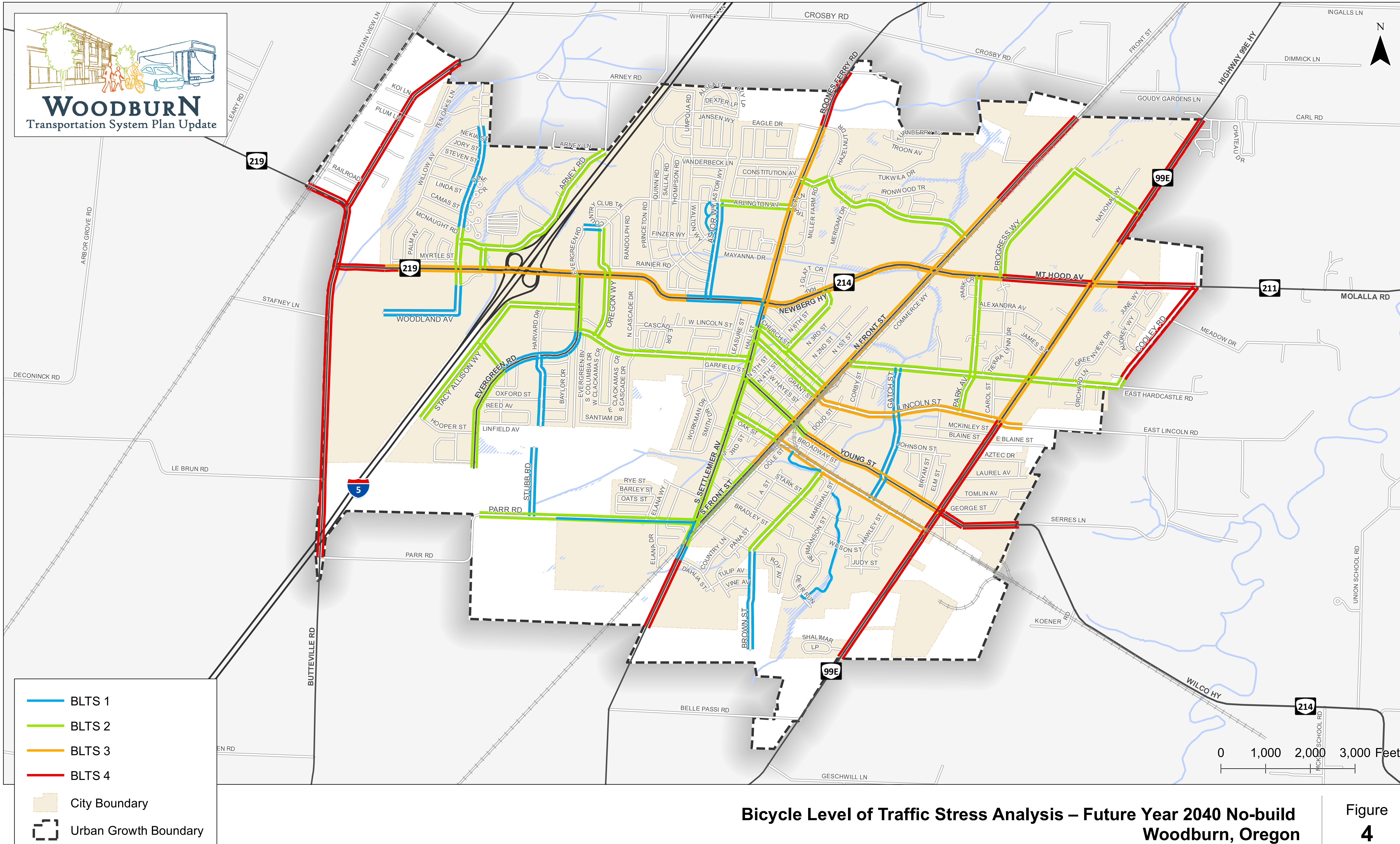
Figure 4 illustrates the results of the BLTS analysis for Woodburn's major arterial, minor arterial, service collector, and access streets. The BLTS calculations are summarized in *Technical Memo #3: Existing Conditions Inventory and Analysis*.

A majority of the segments rated BLTS 3 have striped bicycle lanes; however, the bike lanes are too narrow for roadways conditions. Several segments with striped bike lanes were rated BLTS 4 due to a lack of buffering and/or speed conditions; all of which are located on OR 99E. Other segments evaluated as shared roadways were rated BLTS 3 or BLTS 4 due to speed conditions.

Pedestrian Level of Traffic Stress Analysis

Figure 5 illustrates the results of the PLTS analysis for Woodburn's major arterial, minor arterial, service collector, and access streets, which is unchanged from the existing conditions results. The PLTS calculations are summarized in *Technical Memo #3: Existing Conditions Inventory and Analysis*.

Several road segments are rated PLTS 3 due to having curb-tight sidewalks on roadways with speeds of 30 mph or higher. In order for these segments to be rated LTS 2, the speeds would need to be reduced to 25 mph or a buffer would need to be installed between the sidewalk and vehicle travel lane. A majority of the segments rated PLTS 4 have no sidewalks or other pedestrian facilities to accommodate pedestrians. In order for these segments to be rated PLTS 2, sidewalks with appropriate sidewalk and buffer widths would need to be installed along the full length of the roadway.

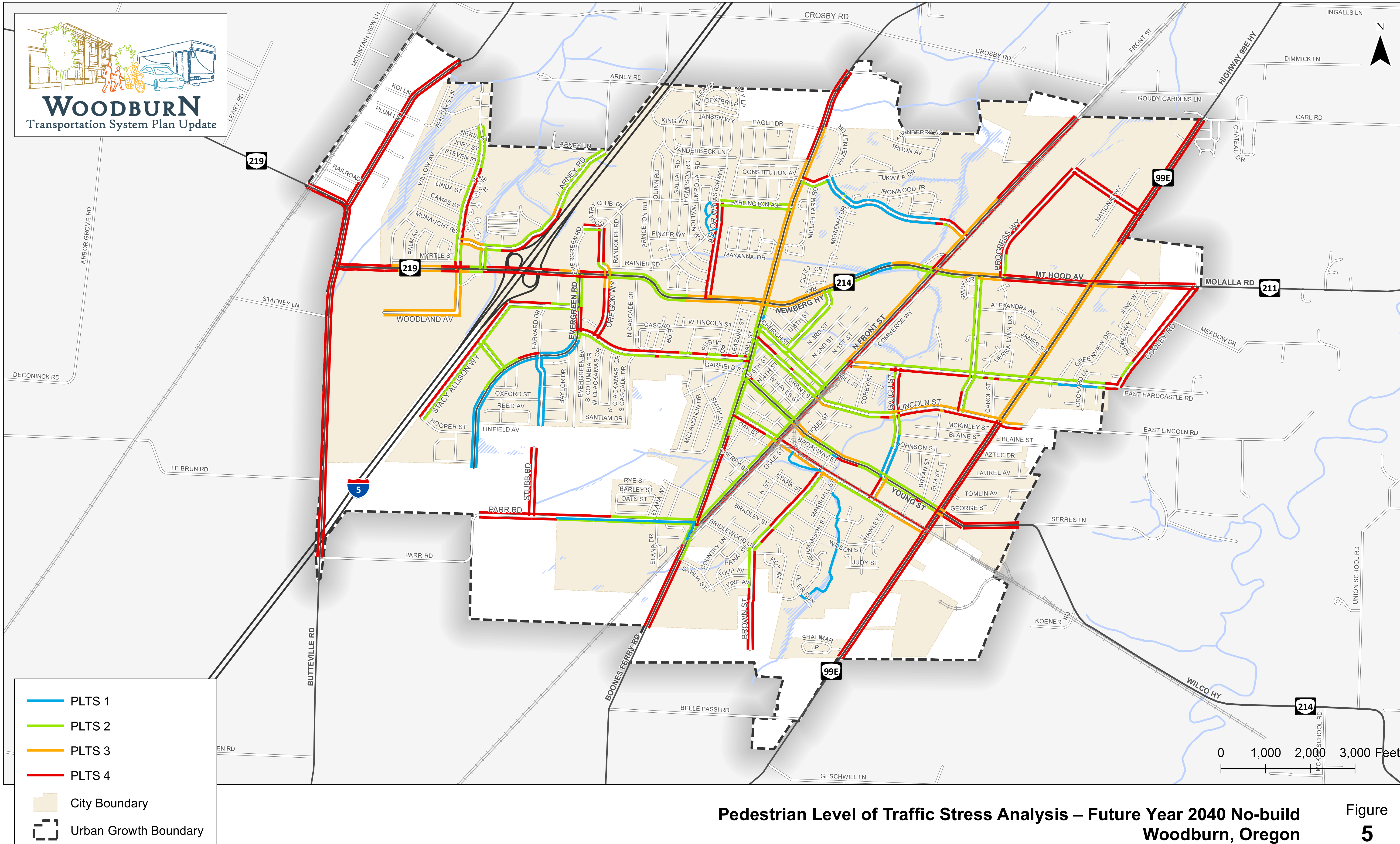


Bicycle Level of Traffic Stress Analysis – Future Year 2040 No-build
Woodburn, Oregon

Figure
4

H:\21\21071 - Woodburn TSP Update\gis\04 Bicycle Level of Traffic Stress - 2040 no build.mxd - mmccormick - 12:05 AM 2/21/2019

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn



Pedestrian Level of Traffic Stress Analysis – Future Year 2040 No-build
Woodburn, Oregon

Figure 5

H:\21\21071 - Woodburn TSP Update\gis\05 Pedestrian Level of Traffic Stress - 2040 no build.mxd - mmccormick - 12:08 AM 2/21/2019

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn

Qualitative (Multimodal) Assessment for Transit Modes

A transit qualitative multimodal assessment was conducted in accordance with the methodology described in ODOT's APM. Transit factors that should be considered are frequency and on-time reliability, schedule speed/travel times, transit stop amenities, and connecting pedestrian/bicycle network. This methodology applies a rating system similar to that used for pavement conditions; excellent, good, fair, poor.

Frequency and On-time Reliability

From the user's perspective, *frequency* determines how many times an hour a user has access to transit service, assuming that service is provided within acceptable walking distance and at the times the user wishes to travel. Frequency also helps determine the convenience of transit service to riders and is one component of overall transit trip time (helping to determine the wait time at a stop). Table 2 summarizes the ratings for frequency and on-time reliability for the three transit routes serving Woodburn.

Table 2: Frequency and On-time Reliability Rating

Provider	Routes	Service Frequency	Rating
Woodburn Transit Service	City Loop	60 minutes[1]	Fair
Cherriots Regional	10X Woodburn/Salem Express	120 to 150 minutes[1]	Poor
Canby Area Transit	99	60 to 150 minutes[1]	Poor

1. No service is provided on Saturday or Sunday.

All three routes that provide service to Woodburn operate on long headways that can create extended wait times at stops if users do not accurately time their travel.

Schedule Speed/Travel Times

Schedule speed and travel time refer to the time it takes to complete a transit route in full and the length of time between stops. Table 3 summarizes the ratings for schedule speed and travel time.

Table 3: Schedule Speed/Travel Times Rating

Provider	Routes	Number of Stops	Route Travel Time	Rating
Woodburn Transit Service	City Loop	53 (loop)	60 minutes	Fair
Cherriots Regional	10X Woodburn/Salem Express	7 (there and back)	50 minutes	Fair
Canby Area Transit	99	9 (there and back)	45 minutes	Fair

Woodburn Transit Service provides a loop route that goes to 53 stops in approximately 60 minutes. Cherriots Regional provides a bus route that goes out to Salem and back to Woodburn. In one direction, the route goes to 7 stops in approximately 50 minutes. Canby Area Transit provides a bus route that goes out to Oregon City Transit Center and back to Woodburn. In one direction, the route goes to 9 stops in approximately 45 minutes.

Future Traffic Operations

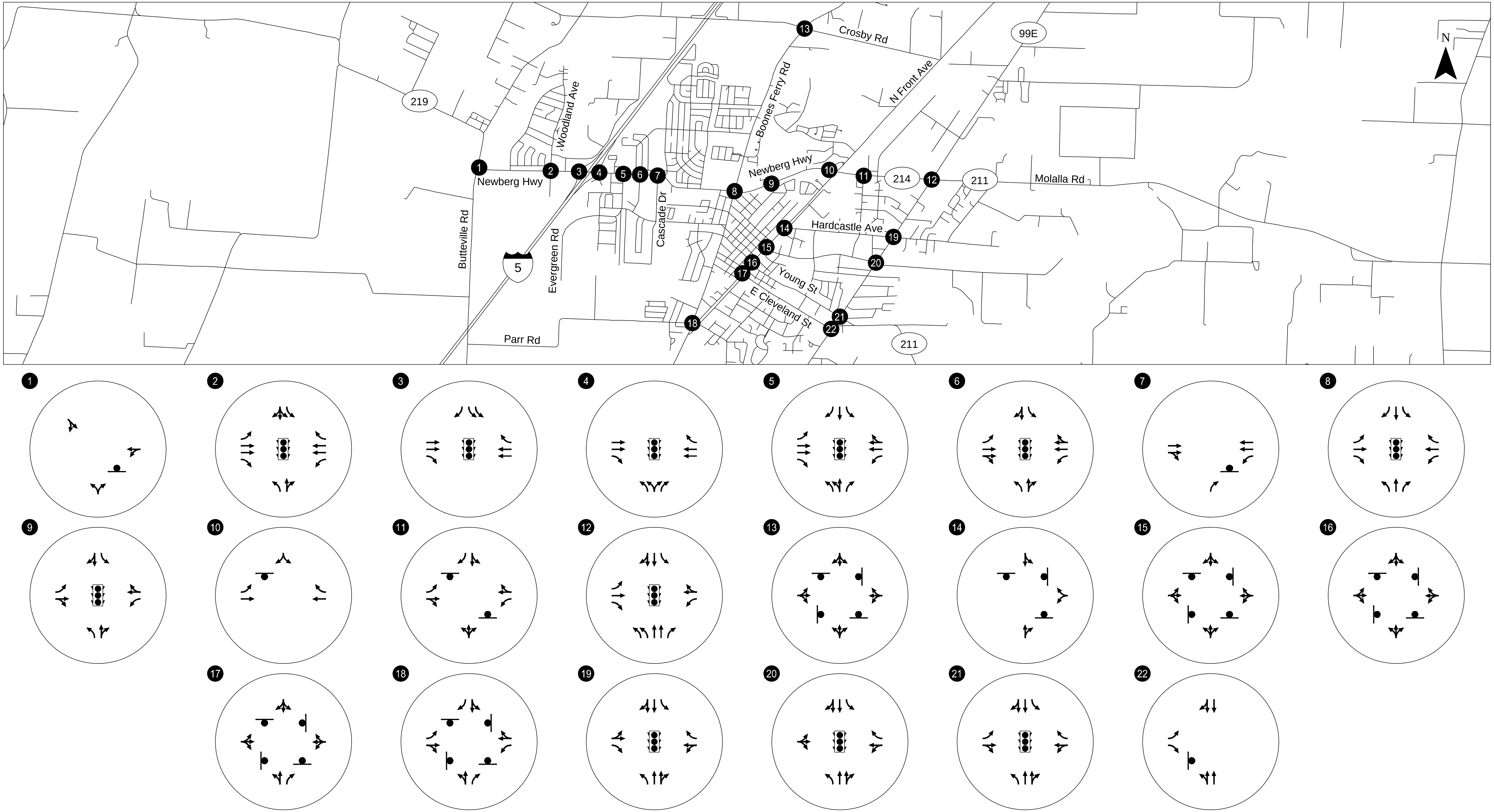
Traffic operations were evaluated at 22 study intersections in accordance with the assumptions and methodologies identified in the methodology memo provided in *Attachment "A"* as well as the updated July 2018 Version 2 of ODOT's Analysis Procedures Manual (APM) Section 5.9.

Forecast Traffic Volumes and Peak Hour Operations

Forecast traffic volumes were developed for the study intersections based on the existing traffic counts and information provided in the Woodburn travel demand model. The travel demand model provides base year 2015 and forecast year 2040 traffic volume projections that reflect anticipated land use changes and planned transportation improvements within the study area. The forecast traffic volumes were developed by applying the post-processing methodology presented in the National Cooperative Highway Research Program (NCHRP) Report 255 *Highway Traffic Data for Urbanized Area Project Planning and Design*, in conjunction with engineering judgment and knowledge of the study area. *Attachment "B" contains the travel demand model data provided by TPAU.*

Figure 6 illustrates the location and no-build lane configurations of the study intersections. Figure 7 illustrates the year 2040 forecast traffic volumes at the study intersections during the weekday p.m. peak hour. Figure 7 and Table 4 summarize the results of the future traffic operations analysis at the study intersections under year 2040 traffic conditions. *Attachment "C" contains the year 2040 future no-build traffic conditions worksheets.*

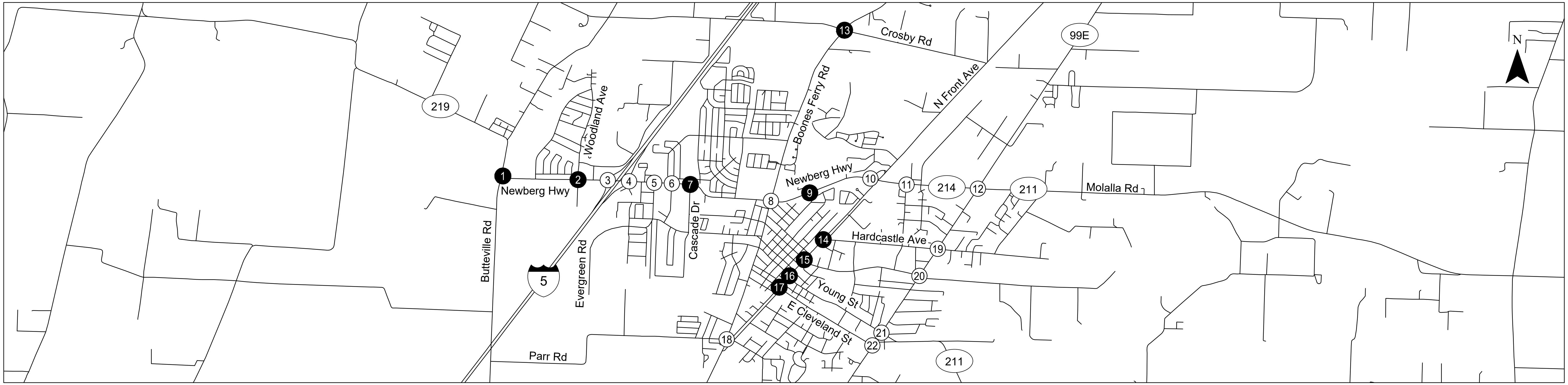
As shown in Table 4, 14 study intersections are forecast to exceed their acceptable mobility standards and targets under year 2040 forecast traffic conditions. Four of these intersections were also exceeding their mobility standards and targets under existing conditions. Additional information about the operations issues identified at these study intersections is provided below.

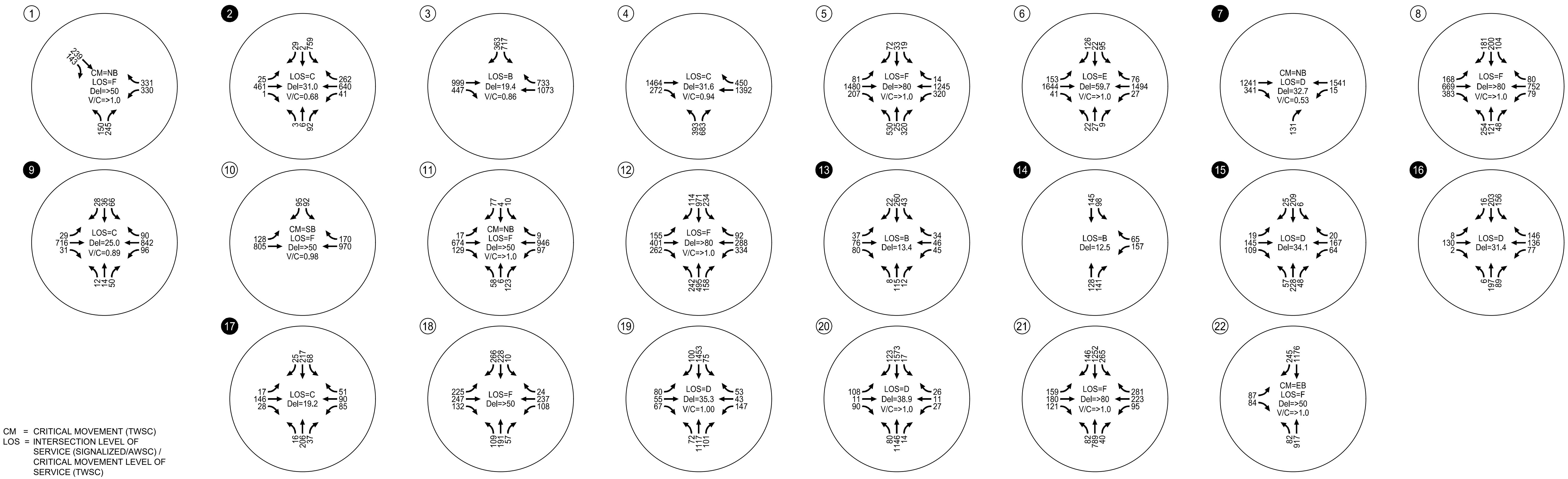


- STUDY INTERSECTIONS
- STOP SIGN
- TRAFFIC SIGNAL

Future No-Build Scenario Lane Configurations and Traffic Control Devices
Woodburn, Oregon

Figure
6





CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWC = TWO-WAY STOP CONTROL
AWSC= ALL-WAY STOP CONTROL

(##) - INTERSECTION DOES MEET TARGET/STANDARD

(##) - INTERSECTION DOES NOT MEET TARGET/STANDARD

Future Year 2040 No-Build Traffic Operations
Woodburn, Oregon

Figure
7

Table 4: Future Year 2040 Weekday PM Peak Hour Intersection Operations

Map ID	Intersection	Level of Service (LOS)	Delay (Sec)	Volume/ Capacity (V/C)	Mobility Target/ Operations Standard		Target/ Standard Met?
					Agency	Maximum	
	Signalized Intersections						
2	OR 219/Woodland Avenue	C	31.0	0.68	ODOT	v/c 0.95	Yes
3	OR 214/I-5 Southbound Ramp	B	19.4	0.86	ODOT	v/c 0.85	*No*
4	OR 214/I-5 Northbound Ramp	C	31.6	0.94	ODOT	v/c 0.85	*No*
5	OR 214/Evergreen Road	F	>80.0	1.15	ODOT	v/c 0.95	*No*
6	OR 214/Oregon Way/Country Club Road	E	59.7	1.01	ODOT	v/c 0.95	*No*
8	OR 214/Boones Ferry Road NE	F	>80.0	1.17	ODOT	v/c 0.95	*No*
9	OR 214/Meridian Drive/5th Street	C	25.0	0.89	ODOT	v/c 0.95	Yes
12	OR 214/OR 211/OR 99E	F	>80.0	1.22	ODOT	v/c 0.95	*No*
19	OR 99E/Hardcastle Avenue	D	35.3	1.00	ODOT	v/c 0.90	*No*
20	OR 99E/Lincoln Street	D	38.9	1.02	ODOT	v/c 0.90	*No*
21	OR 99E/Young Street	F	>80.0	1.15	ODOT	v/c 0.90	*No*
	Unsignalized Intersections						
1	Butteville Road/OR 219	F	>50.0	2.17	ODOT	v/c 0.90	*No*
7	Cascade Drive/OR 214	D	32.7	0.53	ODOT	v/c 0.95	Yes
10	Front Street/OR 214	F	>50.0	3.37	ODOT	v/c 0.95	*No*
11	Park Avenue/OR 214	F	>50.0	4.11	ODOT	v/c 0.95	*No*
13	Boones Ferry Road NE/Crosby Road	B	13.4	-	County	LOS D and v/c 0.85	Yes
14	Hardcastle Avenue/Front Street	B	12.5	-	City	v/c 0.90	Yes
15	Lincoln Street/Front Street	D	34.1	-	City	v/c 0.90	Yes
16	Garfield Street/Young Street/Front Street	D	31.4	-	City	v/c 0.90	Yes
17	Cleveland Street/Front Street	C	19.2	-	City	v/c 0.90	Yes
18	Parr Road/Settlemier Avenue	F	>50.0	-	City	v/c 0.90	*No*
22	OR 99E/Cleveland Street	F	>50.0	7.27	ODOT	v/c 0.90	*No*

Notes:
LOS = Intersection Level of Service (Signal), Critical Movement Level of Service (TWSC).
Delay = Intersection Average vehicle delay (Signal), critical movement vehicle delay (TWSC).
V/C = Intersection V/C (Signal) critical movement V/C (TWSC).
MOE = Measure of Effectiveness

Butteville Road/OR 219

The unsignalized northbound Butteville Road approach to the Butteville Road/OR 219 intersection is forecast to operate over capacity. Heavy east-west through volumes on OR 214 are projected to result in limited gaps where the left-turn and right-turn volumes can turn from a shared lane. The Butteville Road approach is currently stop-controlled, so some form of intersection traffic control may be looked at as part of the future solutions assessment.

OR 214/I-5 Southbound Ramp

OR 214/I-5 Southbound Ramp is forecast to operate at LOS C with a v/c ratio of 0.86, which exceeds the ODOT mobility target for the intersection. While the intersection is not meeting the 0.85 mobility target, the intersection is forecast to still have available capacity. As such, mitigation measures that involve physical improvements may not be necessary.

OR 214/I-5 Northbound Ramp

OR 214/I-5 Northbound Ramp is forecast to operate at over capacity conditions with a v/c ratio of 0.94. This is primarily due to high through volumes on OR 214.

OR 214/Evergreen Road

OR 214/Evergreen Road is forecast to operate at over capacity conditions with a v/c ratio of 1.15. As the main portal to the retail, industrial, and growing residential areas south of OR 214 and east of I-5, traffic demands on Evergreen Road are projected to exceed the capacity of the OR 214/Evergreen Road intersection. As residential areas grow south of OR 214 and east of I-5, additional connections and alternative routing opportunities are likely going to be needed to help disperse this future demand from Evergreen Road while still connecting to the I-5 corridor.

OR 214/Oregon Way/Country Club Road

OR 214/Oregon Way/Country Club Road is forecast to operate at capacity with a v/c ratio of 1.01. This is primarily due to high east-west through volumes on OR 214.

OR 214/Boones Ferry Road NE/N Settlemier Avenue

OR 214/Boones Ferry Road NE/N Settlemeier Avenue is forecast to operate at over capacity conditions with a v/c ratio of 1.17. These conditions are primarily due to high through volumes on OR 214 and high northbound left-turn volumes from N Settlemier Avenue. A second eastbound through lane was identified in the existing Woodburn TSP as a long-term improvement for this intersection. This potential mitigation as well as other capacity enhancement measures will be a focus of the future solutions analysis.

Front Street/OR 214

The unsignalized southbound Front Street approach to the Front Street/OR 214 intersection is forecast to operate over capacity. Heavy east-west through volumes on OR 214 are projected to result in limited gaps where the left-turn and right-turn volumes can turn from a shared lane. The Front Street approach is currently stop-controlled, so some form of intersection traffic control may be looked at as part of the future solutions assessment. The existing Woodburn TSP identified signalization of this intersection as a long-term improvement.

Park Avenue/OR 214

The unsignalized northbound Park Avenue approach to the Park Avenue/OR 214 intersection is forecast to operate over capacity. The Park Avenue approaches are currently stop-controlled, so some form of intersection traffic control may be looked at as part of the future solutions assessment. The existing Woodburn TSP identified signalization of this intersection as a long-term improvement.

OR 214/OR 211/OR 99E

OR 214/OR 211/OR 99E is forecast to operate over capacity with a v/c ratio of 1.22. This is primarily due to high east-west through volumes on OR 214/OR 211, westbound left-turn volumes on OR 211, and high southbound through volumes on OR 99E. The existing Woodburn TSP identified the provision of a southbound right-turn lane on 99E and a second westbound left-turn lane on OR 211 as long-term improvements.

Parr Road/Settlemier Avenue

The Parr Road/Settlemier Avenue intersection is forecast to operate at LOS F with a critical movement v/c ratio of 1.24. Significant growth projections in south Woodburn will require a reassessment of this intersection from a traffic control perspective. The existing Woodburn TSP identified the provision of an eastbound right-turn lane on Parr Road as long-term improvements.

OR 99E/Hardcastle Avenue

OR 99E/Hardcastle Avenue is forecast to operate at capacity with a v/c ratio of 1.00. This is primarily due to high through volumes on OR 99E. Additional capacity enhancements to the Hardcastle Avenue approaches will need to be looked at as part of the future solutions assessment. No improvements have been identified in the existing TSP.

OR 99E/Lincoln Street

OR 99E/Lincoln Street is forecast to operate over capacity with a v/c ratio of 1.02. This is primarily due to high through volumes on OR 214 and southbound on OR 99E. Additional capacity enhancements to the Lincoln Street approaches will need to be looked at as part of the future solutions assessment. No improvements have been identified in the existing TSP.

OR 99E/Young Street

OR 99E/Young Street is forecast to operate over capacity with a v/c ratio of 1.15. This is primarily due to high through volumes on OR 99E and on the westbound approach. The *Highway 99E Corridor Plan* identified restriction of certain turn movements at the surrounding intersections as a near-term safety improvement and eventual closure of nearby connections as a long-term safety improvement. In the near-term, the plan identified restricting movements to right-in, right-out only access at the OR 99E/Silverton Avenue intersection and right-in only at the Young Street/Birds Eye Avenue. The long-term vision is to completely close those two intersections to simplify turning movements and access in this block and free up land for potential future development.

OR 99E/Cleveland Street

The unsignalized eastbound approach to the OR 99E/Cleveland Street intersection is forecast to operate at LOS F and over capacity. This primarily due to high through volumes on OR 99E that limit the gaps where the left-turn movement from Cleveland Street may enter the intersection. The existing Woodburn TSP and the Highway 99E Corridor Plan identified signalization of this intersection as a long-term improvement. In addition, the Highway 99E Corridor Plan identified the continuation of a two-way left-turn lane south of Cleveland Street.

Attachment A

Methodology Memo

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TECHNICAL MEMORANDUM

Woodburn Transportation System Plan (TSP) Update

Analysis Methodology and Assumptions Memorandum (Subtask 2.3)

Date:	February 21, 2018	Project #:21071.2
To:	Chris Kerr, City of Woodburn Dan Fricke, Oregon Department of Transportation, Region 2	
From:	Matt Hughart and Molly McCormick, Kittelson & Associates, Inc.	

This memorandum documents the methodology and key assumptions to be used in preparation of analyses for the Woodburn Transportation System Plan (TSP) Update. The methodology and assumptions included in this memorandum are based on guidance provided in the Oregon Department of Transportation (ODOT) Transportation System Plan Guidelines (2008, Reference 1), the ODOT Analysis Procedures Manual (APM, Versions 1 and 2, Reference 2), and direction provided by City and ODOT staff. The analyses described in this memorandum will help identify potential deficiencies in the transportation system, including:

- Traffic operations at the study intersections under existing and future traffic conditions,
- Traffic safety at the study intersections and along study area roadways,
- Gaps and deficiencies in the bicycle and pedestrian network,
- Gaps and deficiencies in transit service (service frequency, hours, coverage, etc.), and
- Gaps and deficiencies in other travel modes.

This information will serve as a baseline for identifying a comprehensive list of needs and deficiencies to be addressed as part of the TSP update. It will also serve as a baseline for identifying and evaluating potential solutions and developing a prioritized list of improvements for the TSP update.

STUDY INTERSECTIONS AND STUDY SEGMENTS

The study intersections and segments for the Woodburn TSP Update were determined by the City and ODOT prior to the development of the scope of the work. There is a total of 22 study intersections located along City and ODOT facilities, including 11 signalized and 11 unsignalized intersections. There are three study segments. Traffic counts were conducted by the Oregon Department of Transportation in fall 2017 and consist of 16-hour and 96-hour[1] counts, as noted in Table 1 and Table 2. The process for determining the seasonal adjustment factors in Table 1 is discussed in sections below.

Table 1: Study Intersections

Map ID	Intersection	Count Date	Count Type	Peak Hour Start	Peak Hour TEV	Seasonal Adjustment Factor
1	Butteville Road/OR 219	9/28/2017	16-hour	3:45 PM	822	1.16
2	OR 219/Woodland Avenue	9/26/2017	16-hour	5:00 PM	1,354	1.06
3	OR 214/I-5 Southbound Ramp	9/28/2017	16-hour	4:15 PM	2,560	1.04
4	OR 214/I-5 Northbound Ramp	9/28/2017	16-hour	4:15 PM	2,713	1.04
5	OR 214/Evergreen Road	9/26/2017	16-hour	4:00 PM	2,487	1.06
6	OR 214/Oregon Way/Country Club Road	9/28/2017	16-hour	4:15 PM	2,093	1.06
7	Cascade Drive/OR 214	9/28/2017	16-hour	4:45 PM	1,899	1.06
8	OR 214/Boones Ferry Road NE	9/26/2017	16-hour	4:30 PM	2,517	1.06
9	OR 214/Meridian Drive/5th Street	9/28/2017	16-hour	4:00 PM	1,602	1.06
10	Front Street/OR 214	10/5/2017	16-hour	4:15 PM	1,733	1.09
11	Park Avenue/OR 214	9/28/2017	16-hour	3:45 PM	1,751	1.06
12	OR 214/OR 211/OR 99E	9/26/2017	16-hour	3:30 PM	2,879	1.05
13	Boones Ferry Road NE/Crosby Road	10/3/2017	16-hour	4:30 PM	736	N/A
14	Hardcastle Avenue/Front Street	9/26/2017	16-hour	4:45 PM	701	N/A
15	Lincoln Street/Front Street	9/28/2017	16-hour	5:15 PM	795	N/A
16	Garfield Street/Young Street/Front Street	9/28/2017	16-hour	5:00 PM	770	N/A
17	Cleveland Street/Front Street	9/26/2017	16-hour	5:00 PM	688	N/A
18	Parr Road/Settlemier Avenue	9/28/2017	16-hour	5:00 PM	804	N/A
19	OR 99E/Hardcastle Avenue	10/5/2017	16-hour	4:30 PM	2,546	1.05
20	OR 99E/Lincoln Street	10/5/2017	16-hour	4:30 PM	2,405	1.05
21	OR 99E/Young Street	9/26/2017	16-hour	4:30 PM	2,564	1.05
22	OR 99E/Cleveland Street	9/28/2017	16-hour	4:15 PM	1,798	1.05

Table 2: Study Segments

Map ID	Intersection	Count Date	Count Type
S1	Willow Avenue – Roadway Segment	9/25 – 9/28/2017	96-hour
S2	Hayes Street – Roadway Segment	9/25 – 9/28/2017	84-hour
S3	Gatch Street – Roadway Segment	9/25 – 9/28/2017	96-hour

[1] Traffic counts collected on the Hayes Street roadway segment included 84 hours of data instead of 96 hours. It is assumed that there were technical difficulties at this location during data collection.

Peak Hour Development

The traffic counts were reviewed to determine individual and system-wide peak hours for the operational analyses. The system-wide peak hour for the study intersections was identified as 4:30 to 5:30 p.m. The system peak hour will be used to complete the operational analyses in order to accurately represent the overall peak period experienced on the Woodburn roadway system.

Seasonal Factors

30th Hour Volumes (30 HV) for the Woodburn TSP Update will be developed based on the traffic counts collected at the study intersections and the application of seasonal adjustment factors consistent with the methodology identified in the APM. The APM outlines three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATRs) located in select locations throughout the State Highway System that collect traffic data 24-hours a day, 365 days a year. Each method was evaluated to determine the most appropriate method for the study intersections. Based on the evaluations, a combination of the On-Site ATR method and the Seasonal Trend Table method will be used to develop 30 HV volumes at the ODOT study intersections. The results of the evaluation are summarized below.

On-Site ATR Method

Based on conversations with ODOT staff and the APM, it was suggested that ATR 24-020 (located west of Woodburn on OR 219) and ATR 24-001 (located north of Woodburn on OR 99E) would be appropriate ATRs for seasonally adjusting the Butteville Road/OR 219 intersection and intersections along OR99E, respectively. The On-Site ATR Method adjustment factors for these ATRs are outlined in Table 3 below.

Table 3: Seasonal Adjustment Factors using the On-Site ATR Method

ATR	Data Month	2016	2015	2014	2013	2012	Average[1]	Seasonal Adjustment Factor
24-020	Peak Month (July)	121	120	126	127	135	125	1.16
	Count Month (September)	113	109	107	107	107	108	
24-001	Peak Month (June/July/August)	111	113	112	112	115	112	1.05
	Count Month (September)	106	105	109	107	110	107	

[1] Shaded values were dropped from the average calculations based on ODOT methodology

Seasonal Trend Table Method

The Seasonal Trend Table Method uses average values from the ATR Characteristic Table for each seasonal traffic trend. Based on a review of the regional and local traffic trends, a combination of the Interstate Non-Urbanized, Commuter, and Summer seasonal traffic trend values were used to determine the seasonal adjustment factors for the study intersections. Table 4 summarizes the average values for the seasonal traffic trends during the count months of September and October and during the peak period as provided in the ODOT Seasonal Trend Table.

Table 4: Season Adjustment Factors using the Seasonal Trend Table

Trend	Peak Period Seasonal Factor	15-September Seasonal Factor	01-October Seasonal Factor	Seasonal Adjustment Factor (September)	Average (September)	Seasonal Adjustment Factor (October)	Average (October)
Interstate Non-Urbanized	0.8564	0.9458	N/A	1.1044	N/A	N/A	N/A
Commuter	0.9037	0.9359	0.9431	1.0356	1.0633	1.0436	1.0878
Summer	0.8350	0.9110	0.9452	1.0910		1.1320	

The seasonal adjustment factor shown in Table 4 for Interstate Non-Urbanized facilities (1.10) will be used to derive 30 HV volumes at the Interstate 5 (I-5) Ramp Terminals. An average of the seasonal adjustment factors for Commuter and Summer facilities will be used to derive 30 HV at all other ODOT study intersections, with 1.06 for locations with counts conducted in September and 1.09 for locations with counts conducted in October.

Historical Factors

All of the traffic counts were conducted in 2017; therefore, no historical factors are needed to adjust traffic volumes.

Forecast Traffic Volumes

Forecast traffic volumes for the Woodburn TSP Update will be developed for the study intersections based on the methodology identified in the National Cooperative Highway Research Program (NCHRP) Report 255 *Highway Traffic Data for Urbanized Area Project Planning and Design*. The methodology combines the year 2017 30 HV traffic volumes developed at the study intersections with base year and future year 2035 traffic volume forecasts from the current Woodburn travel demand model developed by ODOT's Transportation Planning and Analysis Unit (TPAU).

Intersection Operational Standards

The study intersections are a mix of ODOT and Woodburn facilities. The ODOT controlled intersections within the study area are located along I-5, OR 219, OR 214, OR 211, and OR 99E. ODOT uses volume-to-capacity (V/C) ratio to assess intersections operations. Table 6 of the *Oregon Highway Plan* (OHP, Reference 3) and Table 10-2 of the *Oregon Highway Design Manual* (HDM, Reference 4) provide maximum V/C ratios for all signalized and unsignalized intersections outside the Portland metropolitan area Urban Growth Boundary (UGB). The OHP ratios are used to evaluate existing and future no-build conditions, while the HDM ratios are used in the creation of future TSP alternatives which involve projects along state highways. Table 5 summarizes the ODOT standards for the facilities being analyzed through the TSP update process.

Table 5: ODOT Operational Standards

Roadway	Posted Speed > 35 MPH	State Classification System	National Highway System	National Network (Truck Route)	OHP Freight Route	OHP Mobility Targets	HDM Standard
OR 219 (Hillsboro-Silverton Highway 140)	No/Yes[1]	District	Yes/No[2]	No	No	0.95/0.90[1]	0.75/0.80[2]
OR 214 (Hillsboro-Silverton Highway 140)	No	District	Yes/No[3]	Yes	No	0.95	0.80
OR 211 (Woodburn-Estacada Highway 161)	No/Yes[4]	District	No	No	No	0.95	0.75/0.80
OR 99E (Pacific Highway East 081)	No/Yes[5]	Regional Highway	Yes/No[6]	Yes	No	0.90/0.85	0.75
I-5 Ramp Terminals (Pacific Highway 001)	Yes[7]	Interstate Highway	Yes	Yes	Yes	0.85	0.70

[1] The posted speed limit on OR 219 transitions from 35 MPH east of Willow Avenue to 55 MPH west of Willow Avenue. Therefore, the study intersection of Butteville Road/OR 219 has a different set of OHP mobility standards as compared to all other study intersections along OR 219.

[2] OR 219 transitions to part of the National Highway System east of Woodland Avenue. Therefore, the study intersections of Butteville Road/OR 219 and OR 219/Woodland Avenue have a different set of HDM standards as compared to all other study intersections along OR 219.

[3] OR 214 transitions from being part of the National Highway System at milepost 39.31.

[4] The posted speed limit on OR 211 transitions from 35 MPH west of Cooley Road to 45 MPH east of Cooley Road.

[5] The posted speed limit on OR 99E transitions from 45 MPH north of Industrial Road to 35 MPH south of Industrial Road, to 45 MPH south of Cleveland Road, and to 55 MPH at milepost 33.34.

[6] OR 99E is only identified as a National Highway System route between the mileposts of 31.70 and 32.87.

[7] The non-freeway speed limits adjacent to the ramp terminals are less than 45 MPH.

Marion County used the following mobility standards, as presented in the current Marion County Rural TSP 2005 Update:

- LOS D or better with a V/C ratio of 0.85 or better for signalized, all-way stop, and roundabout intersections.
- LOS E or better with a v/c ratio of 0.90 or better for other unsignalized intersections.
- LOS D or better with a v/c ratio of 0.60 or better for road segments.

The City of Woodburn uses the following mobility standards, as presented in the current Woodburn TSP adopted in 2003:

- Level of Service (LOS) “E” for signalized intersections
- V/C ratio less than 1.00 regardless of LOS
- V/C ratio of less than 0.90 on the critical movement should be maintained, provided the queues on the critical approach can be appropriately accommodated.

ANALYSIS MODEL PARAMETERS

The bullets below identify the proposed sources of data and methodologies to be used to analyze traffic conditions in Woodburn. Analyses of the study area and intersections will be conducted according to the most-recent version of the APM.

1. Intersection/Roadway Geometry (lane numbers and arrangements, cross-section elements, signal phasing, etc.) will be verified for consistency with previous work efforts, reviewed through aerial photography, and confirmed through a site visit. Available as-built data may also be used to verify existing roadway geometry. The analysis models will be built on scaled roadway line work from GIS or aerial photography. ODOT's two-way stop-controlled intersection calculator tool will be used to calculate expected queue lengths for two-way stop-controlled intersections.
2. Operational Data (such as posted speeds, intersection control, parking, right-turn on red, etc.) will be field verified. Data will be reviewed during a site visit and supplemented by available GIS data, aerials, and photos.
3. Peak Hour Factors (PHF) will be calculated for each intersection and applied to the existing conditions analyses. PHFs of 0.95 will be used for the future analysis for high-order facilities (arterials), with 0.90 applied to medium-order facilities (collectors) and 0.85 applied to local roads. If the existing PHF is greater than these default future values, the existing PHF will be applied.
4. Traffic Operations

    a. The 2000 Highway Capacity Manual (HCM 2000) methodology will be used to analyze traffic operations at the signalized intersections while the HCM 2010 methodology will be used to analyze traffic operations at the unsignalized intersections.

    b. The existing and future no-build traffic operations analyses will use Synchro 9 software using HCM 2000 reports for signalized intersections and HCM 2010 reports for unsignalized intersections. Electronic Synchro 9 files shall be provided to ODOT for review.

    c. Queuing analysis methodology will be based on Synchro 95th percentile queue lengths. Microsimulation is not proposed as part of this long-range planning effort.

SAFETY ANALYSES

Safety analyses will include reviewing historical crash data and examining roadway crossings, as described in the following sections.

Crash Analyses

The most recent five years of crash data will be reviewed at the study intersections and roadway segments identified through this planning process. The data will be analyzed for a variety of factors including type, severity, general conditions, and location to identify potential crash patterns or anomalies. Particular attention will be paid to the details of crashes involving pedestrians and bicyclists.

Study intersection crash rates and critical crash rates will be calculated based on the method outlined in Part B of the Highway Safety Manual. If a critical crash rate cannot be calculated due to limited data, the published 90th percentile rates in Table 4-1 of ODOT's APM will be used for comparisons purposes. Project-area K-factors from 12+ hour counts will be used to convert short duration counts to daily traffic approach volumes.

For all areas that exceed the critical crash rate or 90th percentile rate, we will identify and present crash patterns and potential projects, policies, or studies that could address reported crash types and patterns. Countermeasures suggested for mitigation will be identified as having crash reduction potential based on Crash Modification Factors from the Highway Safety Manual or FHWA's online Crash Modification Factor (CMF) Clearinghouse with a star rating of 3 or better. All CMFs must have consistent volumes/parameters as the study intersections.

NON-AUTOMOBILE ANALYSIS

The existing pedestrian, bicycle, and transit network will be reviewed to identify gaps and deficiencies. A gap is defined as a missing link in the network, such as a missing sidewalk on a collector or arterial roadway. A deficiency, or obstacle, is defined as a bicycle or pedestrian facility that is not up to standards or sufficient to meet users' needs. Examples of deficiencies include:

- On-street connection on a collector or arterial roadway that has a Bicycle Level of Traffic Stress rating greater than 2 (Interested but Concerned)
- Sidewalks that are too narrow to meet ADA standards or crossings without a curb ramp

The multimodal analysis will be performed in accordance with the methodologies identified in Chapter 14 of the APM and identify the needs associated with public transportation, pedestrian, and bicycle facilities and services. The pedestrian and bicycle analyses will be supplemented by a Pedestrian Level of Traffic Stress (PLTS) analysis and a Bicycle Level of Traffic Street (BLTS) analysis, consistent with the APM. Both PLTS and BLTS methods group facilities into four different stress levels for segments, intersection approaches, and intersection crossings. Facilities with an LTS 1 rating have little to no traffic stress, require less attention, and are suitable for all users. Facilities with an LTS 2 rating have little traffic stress, but require more attention and therefore, may or may not be suitable for small children. Facilities with an LTS 3 rating have moderate traffic stress and are suitable for adults. Facilities with an LTS 4 rating have high traffic stress and are only suitable for able-bodied adults with limited options.

NEXT STEPS

We would like to request concurrence from TPAU and ODOT Region 2 on the methodology and key assumptions outlined in this memorandum. This memorandum is being provided prior to beginning the existing conditions analysis and conforms to the project scope. Please contact us with any questions or comments at your earliest convenience.

REFERENCES

1. Oregon Department of Transportation. *Transportation System Plan Guidelines*, 2008.
2. Oregon Department of Transportation. *Analysis Procedures Manual*, 2012.
3. Oregon Department of Transportation. *Oregon Highway Plan*, 2012.
4. Oregon Department of Transportation. *Highway Design Manual*, 2012.

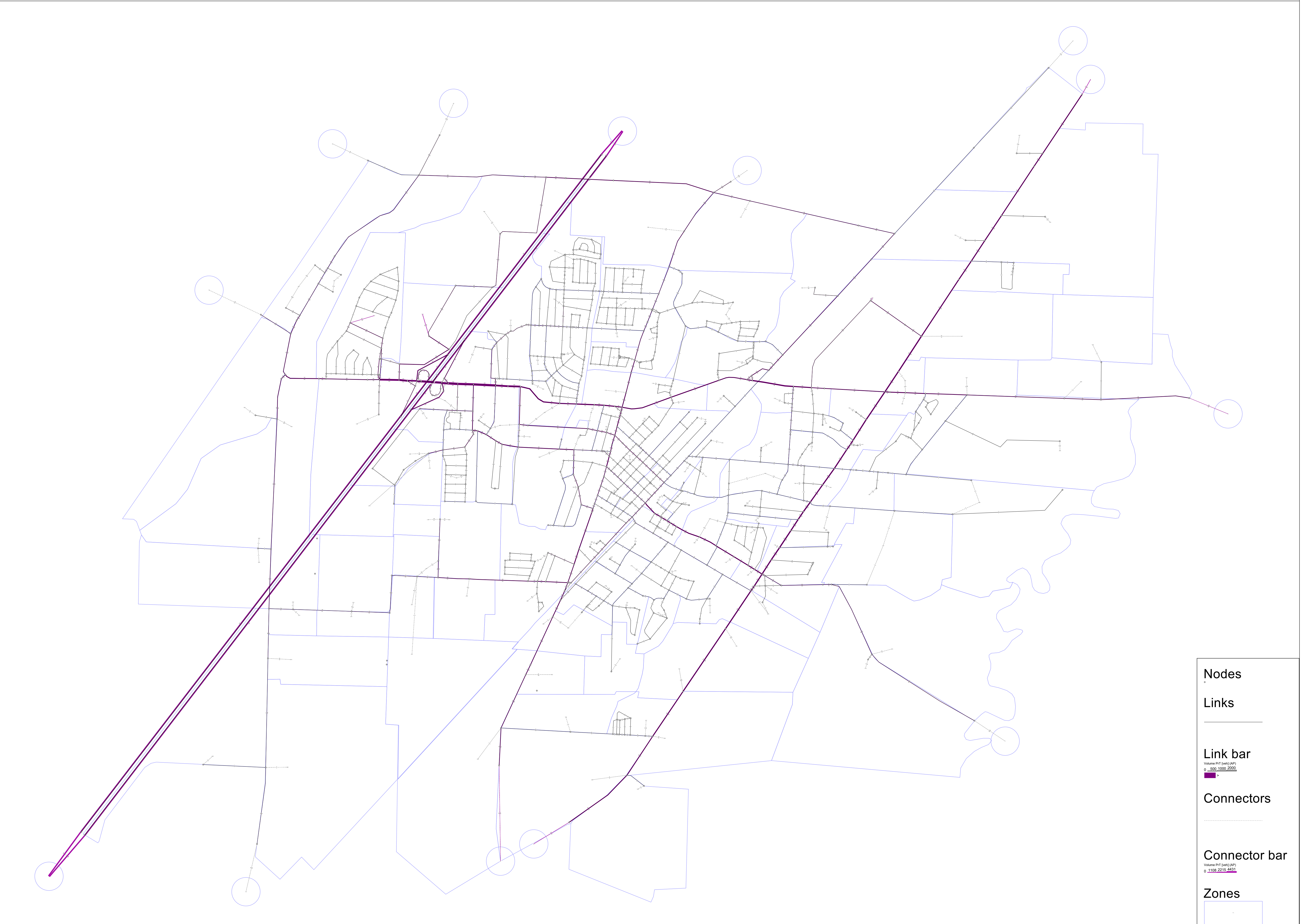
Attachment B

Travel Demand Model Data

Woodburn V2 2015 PM Peak Volumes w/Bars

VISUM 16.01 PTV AG		Woodburn_V2_2015.ver
Created on: 10.07.2018		1:10000

Woodburn V2 ODOT Request 017 Future year 2040 Peak Volumes



VISUM 17.01 PTV AG		Woodburn_2040_Req017.ver
Created on: 19.09.2018	beth.a.pickman@odot.state.or.us	1:10000

Attachment C

Year 2040 Traffic Conditions Analysis *Worksheets*

Intersection	
Int Delay, s/veh	162

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	239	143	330	331	150	245
Future Vol, veh/h	239	143	330	331	150	245
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	21	18	29	31	15
Mvmt Flow	249	149	344	345	156	255

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	1355	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	1032	-
Critical Hdwy	-	-	4.28	-	6.71	6.35
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.362	-	3.779	3.435
Pot Cap-1 Maneuver	-	-	1079	-	~ 143	689
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	304	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1079	-	~ 87	689
Mov Cap-2 Maneuver	-	-	-	-	~ 87	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	184	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	$ 581.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	190	-	-	1079	-
HCM Lane V/C Ratio	2.166	-	-	0.319	-
HCM Control Delay (s)	$ 581.6	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	32.4	-	-	1.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	461	1	41	640	262	3	6	92	759	2	29
Future Volume (vph)	25	461	1	41	640	262	3	6	92	759	2	29
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	0.85	1.00	0.86		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1614	2866	975	1250	2866	1430	1662	1162		1490	1477	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (perm)	1614	2866	975	1250	2866	1430	1662	1162		1490	1477	
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)	27	501	1	45	696	285	3	7	100	825	2	32
RTOR Reduction (vph)	0	0	1	0	0	59	0	93	0	0	2	0
Lane Group Flow (vph)	27	501	0	45	696	226	3	14	0	429	428	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	16%	50%	33%	16%	4%	0%	50%	28%	6%	20%	11%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	5	2	8	1	6	4	8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	4.4	30.6	38.5	7.6	33.8	77.8	7.9	7.9		44.0	44.0	
Effective Green, g (s)	4.4	30.6	38.5	7.6	33.8	77.8	7.9	7.9		44.0	44.0	
Actuated g/C Ratio	0.04	0.29	0.36	0.07	0.32	0.73	0.07	0.07		0.41	0.41	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.2	2.5	2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	66	822	352	89	908	1043	123	86		615	609	
v/s Ratio Prot	0.02	0.17	0.00	c0.04	c0.24	0.09	0.00	c0.01		0.29	c0.29	
v/s Ratio Perm			0.00			0.07						
v/c Ratio	0.41	0.61	0.00	0.51	0.77	0.22	0.02	0.17		0.70	0.70	
Uniform Delay, d1	49.8	32.8	21.8	47.7	32.8	4.6	45.8	46.3		25.8	25.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.6	0.0	3.3	4.3	0.1	0.1	0.7		3.2	3.4	
Delay (s)	52.8	34.4	21.8	51.0	37.1	4.7	45.8	46.9		29.0	29.3	
Level of Service	D	C	C	D	D	A	D	D		C	C	
Approach Delay (s)		35.3			28.7			46.9			29.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	106.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	64.3%	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												
Traffic Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Future Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	370
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	361
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		59.8	100.0		45.8	100.0				31.2		45.7
Effective Green, g (s)		59.8	100.0		45.8	100.0				31.2		45.7
Actuated g/C Ratio		0.60	1.00		0.46	1.00				0.31		0.46
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1713	1255		1301	1173				845		580
v/s Ratio Prot		0.36			c0.39					c0.27		0.28
v/s Ratio Perm			0.36			c0.64						
v/c Ratio		0.59	0.36		0.84	0.64				0.87		0.62
Uniform Delay, d1		12.5	0.0		23.9	0.0				32.4		20.6
Progression Factor		1.00	1.00		1.07	1.00				1.00		1.00
Incremental Delay, d2		1.5	0.8		2.9	1.1				9.2		1.8
Delay (s)		14.1	0.8		28.6	1.1				41.6		22.4
Level of Service		B	A		C	A				D		C
Approach Delay (s)		10.0			17.4			0.0			35.2	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.2%	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												
Traffic Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Future Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1107	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1107	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1525	283	0	1450	469	409	0	711	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	17	17	0	0	0
Lane Group Flow (vph)	0	1525	283	0	1450	469	368	358	360	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		56.9	100.0		56.9	100.0	34.1	34.1	34.1			
Effective Green, g (s)		56.9	100.0		56.9	100.0	34.1	34.1	34.1			
Actuated g/C Ratio		0.57	1.00		0.57	1.00	0.34	0.34	0.34			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1630	1234		1550	1212	460	377	386			
v/s Ratio Prot		0.53			c0.53							
v/s Ratio Perm			0.23			0.39	0.27	0.32	0.32			
v/c Ratio		0.94	0.23		0.94	0.39	0.80	0.95	0.93			
Uniform Delay, d1		19.9	0.0		19.9	0.0	29.9	32.1	31.8			
Progression Factor		1.43	1.00		0.92	1.00	1.00	1.00	1.00			
Incremental Delay, d2		9.3	0.3		5.1	0.3	9.4	33.0	29.1			
Delay (s)		37.7	0.3		23.2	0.3	39.2	65.1	61.0			
Level of Service		D	A		C	A	D	E	E			
Approach Delay (s)		31.8			17.6			55.2			0.0	
Approach LOS		C			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.3%	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												
Traffic Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Future Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2835		1373	1390	1262	1511	1651	1096
Flt Permitted	0.10	1.00	1.00	0.12	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	139	2842	1316	176	2835		1373	1390	1262	1511	1651	1096
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)	84	1526	213	330	1284	14	546	26	330	20	34	74
RTOR Reduction (vph)	0	0	126	0	1	0	0	0	238	0	0	69
Lane Group Flow (vph)	84	1526	87	330	1297	0	284	288	92	20	34	5
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	48.6	33.8	33.8	48.6	41.3		27.8	27.8	27.8	6.1	6.1	6.1
Effective Green, g (s)	48.6	33.8	33.8	48.6	41.3		27.8	27.8	27.8	6.1	6.1	6.1
Actuated g/C Ratio	0.49	0.34	0.34	0.49	0.41		0.28	0.28	0.28	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	156	960	444	268	1170		381	386	350	92	100	66
v/s Ratio Prot	0.04	c0.54		0.18	c0.46		0.21	c0.21		0.01	c0.02	
v/s Ratio Perm	0.22		0.07	0.42					0.07			0.00
v/c Ratio	0.54	1.59	0.20	1.23	1.11		0.75	0.75	0.26	0.22	0.34	0.07
Uniform Delay, d1	19.8	33.1	23.5	39.3	29.4		32.9	32.9	28.1	44.7	45.0	44.3
Progression Factor	0.90	0.99	1.04	0.87	0.81		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	267.2	0.4	112.5	52.7		7.3	7.3	0.3	0.9	1.5	0.3
Delay (s)	18.8	299.8	24.8	146.8	76.4		40.2	40.2	28.4	45.5	46.5	44.6
Level of Service	B	F	C	F	E		D	D	C	D	D	D
Approach Delay (s)		254.7			90.7			35.9			45.2	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	145.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	97.9%	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												
Traffic Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Future Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2747		1471	2720		1525	1396		1385	1427	
Flt Permitted	0.07	1.00		0.08	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	123	2747		125	2720		1525	1396		1385	1427	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	159	1712	43	28	1556	79	23	28	9	99	23	131
RTOR Reduction (vph)	0	1	0	0	3	0	0	8	0	0	115	0
Lane Group Flow (vph)	159	1755	0	28	1632	0	23	29	0	99	39	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	66.0	62.0		53.4	53.4		5.3	6.1		11.4	12.2	
Effective Green, g (s)	66.0	62.0		53.4	53.4		5.3	6.1		11.4	12.2	
Actuated g/C Ratio	0.66	0.62		0.53	0.53		0.05	0.06		0.11	0.12	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	261	1703		120	1452		80	85		157	174	
v/s Ratio Prot	0.08	c0.64		0.01	c0.60		0.02	c0.02		c0.07	0.03	
v/s Ratio Perm	0.33			0.11								
v/c Ratio	0.61	1.03		0.23	1.12		0.29	0.34		0.63	0.22	
Uniform Delay, d1	32.8	19.0		19.3	23.3		45.5	45.0		42.3	39.6	
Progression Factor	0.39	1.25		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	16.4		0.7	65.4		1.4	1.7		7.0	0.5	
Delay (s)	13.0	40.2		20.0	88.7		47.0	46.7		49.3	40.1	
Level of Service	B	D		C	F		D	D		D	D	
Approach Delay (s)		37.9			87.6			46.8			43.7	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1241	341	15	1541	0	131
Future Vol, veh/h	1241	341	15	1541	0	131
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	19	17	10	23	0	24
Mvmt Flow	1320	363	16	1639	0	139

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1685	0	-	843
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	7.38
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.3	-	-	3.54
Pot Cap-1 Maneuver	-	-	342	-	0	266
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	342	-	-	265
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	32.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	265	-	-	342	-
HCM Lane V/C Ratio	0.526	-	-	0.047	-
HCM Control Delay (s)	32.7	-	-	16	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	2.8	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	669	383	79	752	80	254	121	48	104	200	181
Future Volume (vph)	168	669	383	79	752	80	254	121	48	104	200	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.91	1.00	1.00	0.98	1.00	1.00	0.70
Flpb, ped/bikes	1.00	1.00	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	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	1458	1214	1484	1446	1111	1385	1483	1343	1458	1446	868
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	1458	1214	1484	1446	1111	1385	1483	1343	1458	1446	868
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)	177	704	403	83	792	84	267	127	51	109	211	191
RTOR Reduction (vph)	0	0	94	0	0	48	0	0	39	0	0	158
Lane Group Flow (vph)	177	704	309	83	792	36	267	127	12	109	211	33
Confl. Peds. (#/hr)	26		26	26		26	118		2	2		118
Heavy Vehicles (%)	15%	20%	15%	12%	21%	22%	20%	18%	8%	14%	21%	20%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	21.2	63.4	88.5	13.0	55.2	55.2	25.1	34.2	34.2	15.7	24.8	24.8
Effective Green, g (s)	21.2	63.4	88.5	13.0	55.2	55.2	25.1	34.2	34.2	15.7	24.8	24.8
Actuated g/C Ratio	0.15	0.44	0.61	0.09	0.38	0.38	0.17	0.24	0.24	0.11	0.17	0.17
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	210	636	739	132	549	422	239	349	316	157	246	148
v/s Ratio Prot	c0.12	c0.48	0.07	0.06	c0.55		c0.19	0.09		0.07	c0.15	
v/s Ratio Perm			0.18			0.03			0.01			0.04
v/c Ratio	0.84	1.11	0.42	0.63	1.44	0.08	1.12	0.36	0.04	0.69	0.86	0.22
Uniform Delay, d1	60.4	41.0	14.9	63.8	45.1	28.9	60.1	46.5	42.9	62.5	58.5	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.9	68.6	0.3	7.9	209.3	0.2	93.3	0.5	0.0	11.6	24.0	0.5
Delay (s)	85.3	109.6	15.2	71.7	254.4	29.0	153.4	46.9	42.9	74.1	82.6	52.5
Level of Service	F	F	B	E	F	C	F	D	D	E	F	D
Approach Delay (s)		76.6			218.8			110.3			69.5	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	122.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	145.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	108.9%	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												
Traffic Volume (vph)	29	716	31	96	842	90	12	14	50	66	36	28
Future Volume (vph)	29	716	31	96	842	90	12	14	50	66	36	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
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	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.88		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1484	1443		1339	1423		1213	1152		1280	1427	
Flt Permitted	0.19	1.00		0.27	1.00		0.71	1.00		0.71	1.00	
Satd. Flow (perm)	300	1443		377	1423		912	1152		963	1427	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	30	731	32	98	859	92	12	14	51	67	37	29
RTOR Reduction (vph)	0	1	0	0	2	0	0	46	0	0	26	0
Lane Group Flow (vph)	30	762	0	98	949	0	12	19	0	67	40	0
Confl. Peds. (#/hr)	9		33	33		9	18		4	4		18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	12%	20%	27%	24%	22%	10%	33%	50%	26%	29%	4%	22%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	72.6	65.4		72.6	69.2		10.2	10.2		10.2	10.2	
Effective Green, g (s)	72.6	65.4		72.6	69.2		10.2	10.2		10.2	10.2	
Actuated g/C Ratio	0.74	0.67		0.74	0.71		0.10	0.10		0.10	0.10	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.3		2.5	5.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	263	964		350	1006		95	120		100	148	
v/s Ratio Prot	0.00	0.53		c0.02	c0.67			0.02			0.03	
v/s Ratio Perm	0.08			0.19			0.01			c0.07		
v/c Ratio	0.11	0.79		0.28	0.94		0.13	0.16		0.67	0.27	
Uniform Delay, d1	7.3	11.4		5.7	12.6		39.8	39.9		42.2	40.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	5.2		0.3	17.0		0.4	0.5		14.8	0.7	
Delay (s)	7.4	16.6		6.0	29.6		40.2	40.4		57.0	41.1	
Level of Service	A	B		A	C		D	D		E	D	
Approach Delay (s)		16.3			27.4			40.3			49.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	101.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	128	805	970	170	92	95
Future Vol, veh/h	128	805	970	170	92	95
Conflicting Peds, #/hr	8	0	0	8	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	130	-	-	60	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	25	21	18	18	30	24
Mvmt Flow	136	856	1032	181	98	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1040	0	-	0	2169	1040
Stage 1	-	-	-	-	1040	-
Stage 2	-	-	-	-	1129	-
Critical Hdwy	4.35	-	-	-	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	5.7	-
Critical Hdwy Stg 2	-	-	-	-	5.7	-
Follow-up Hdwy	2.425	-	-	-	3.77	3.516
Pot Cap-1 Maneuver	588	-	-	-	~ 43	254
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	272	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	588	-	-	-	~ 33	252
Mov Cap-2 Maneuver	-	-	-	-	~ 33	-
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	207	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	$ 1214
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	588	-	-	-	59
HCM Lane V/C Ratio	0.232	-	-	-	3.372
HCM Control Delay (s)	13	-	-	-	$ 1214
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.9	-	-	-	21

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	140.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	674	129	97	946	9	58	6	123	10	4	77
Future Vol, veh/h	17	674	129	97	946	9	58	6	123	10	4	77
Conflicting Peds, #/hr	4	0	14	14	0	4	22	0	0	0	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	185	-	-	-	-	-	-	-	55
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	23	16	9	23	38	0	0	10	9	25	7
Mvmt Flow	19	741	142	107	1040	10	64	7	135	11	4	85

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1053	0	0	896	0	0	2145	2130	826	2182	2196	1071
Stage 1	-	-	-	-	-	-	863	863	-	1262	1262	-
Stage 2	-	-	-	-	-	-	1282	1267	-	920	934	-
Critical Hdwy	4.19	-	-	4.19	-	-	7.1	6.5	6.3	7.19	6.75	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.19	5.75	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.19	5.75	-
Follow-up Hdwy	2.281	-	-	2.281	-	-	3.5	4	3.39	3.581	4.225	3.363
Pot Cap-1 Maneuver	635	-	-	729	-	-	~ 36	50	360	32	39	262
Stage 1	-	-	-	-	-	-	352	374	-	202	218	-
Stage 2	-	-	-	-	-	-	205	242	-	315	316	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	622	-	-	729	-	-	~ 18	41	355	15	32	256
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 18	41	-	15	32	-
Stage 1	-	-	-	-	-	-	337	358	-	195	185	-
Stage 2	-	-	-	-	-	-	112	206	-	186	302	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	$ 1565.9	91.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	50	622	-	-	729	-	-	18	256
HCM Lane V/C Ratio	4.11	0.03	-	-	0.146	-	-	0.855	0.331
HCM Control Delay (s)	$ 1565.9	11	-	-	10.8	-	-	$ 451.6	25.9
HCM Lane LOS	F	B	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	22.8	0.1	-	-	0.5	-	-	2.2	1.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	401	262	334	288	92	242	495	158	234	971	114
Future Volume (vph)	155	401	262	334	288	92	242	495	158	234	971	114
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	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	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1311		2906	2639	1054	1374	2950	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1311		2906	2639	1054	1374	2950	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	418	273	348	300	96	252	516	165	244	1011	119
RTOR Reduction (vph)	0	0	199	0	9	0	0	0	115	0	7	0
Lane Group Flow (vph)	161	418	74	348	387	0	252	516	50	244	1123	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	25.5	30.5	30.5	25.5	30.5		14.6	38.5	39.4	15.5	39.4	
Effective Green, g (s)	25.5	30.5	30.5	25.5	30.5		14.6	38.5	39.4	15.5	39.4	
Actuated g/C Ratio	0.20	0.23	0.23	0.20	0.23		0.11	0.30	0.30	0.12	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	278	347	285	263	307		326	781	319	163	894	
v/s Ratio Prot	0.11	0.28		c0.26	c0.30		c0.09	0.20		c0.18	c0.38	
v/s Ratio Perm			0.06						0.05			
v/c Ratio	0.58	1.20	0.26	1.32	1.26		0.77	0.66	0.16	1.50	1.26	
Uniform Delay, d1	47.4	49.8	40.5	52.2	49.8		56.1	40.0	33.1	57.2	45.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.30	0.93	0.59	1.00	1.00	
Incremental Delay, d2	2.9	116.3	0.5	169.5	140.6		7.0	2.7	0.7	253.0	124.4	
Delay (s)	50.3	166.0	41.1	221.7	190.4		79.9	39.9	20.2	310.3	169.7	
Level of Service	D	F	D	F	F		E	D	C	F	F	
Approach Delay (s)		104.1			205.0			47.2			194.7	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	141.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	37	76	80	45	46	34	8	115	12	43	260	22
Future Vol, veh/h	37	76	80	45	46	34	8	115	12	43	260	22
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	39	23	6	31	20	86	22	13	27	36	13	16
Mvmt Flow	39	81	85	48	49	36	9	122	13	46	277	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.3	11.1	10.8	16
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	19%	36%	13%
Vol Thru, %	85%	39%	37%	80%
Vol Right, %	9%	41%	27%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	135	193	125	325
LT Vol	8	37	45	43
Through Vol	115	76	46	260
RT Vol	12	80	34	22
Lane Flow Rate	144	205	133	346
Geometry Grp	1	1	1	1
Degree of Util (X)	0.236	0.347	0.229	0.558
Departure Headway (Hd)	5.91	6.078	6.209	5.814
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	606	591	577	619
Service Time	3.96	4.124	4.262	3.853
HCM Lane V/C Ratio	0.238	0.347	0.231	0.559
HCM Control Delay	10.8	12.3	11.1	16
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	0.9	1.5	0.9	3.4

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	157	65	128	141	98	145
Future Vol, veh/h	157	65	128	141	98	145
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	12	28	15	19	22	24
Mvmt Flow	185	76	151	166	115	171
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12.5	12.1	13
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	71%	40%
Vol Thru, %	48%	0%	60%
Vol Right, %	52%	29%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	269	222	243
LT Vol	0	157	98
Through Vol	128	0	145
RT Vol	141	65	0
Lane Flow Rate	316	261	286
Geometry Grp	1	1	1
Degree of Util (X)	0.445	0.409	0.444
Departure Headway (Hd)	5.067	5.644	5.589
Convergence, Y/N	Yes	Yes	Yes
Cap	712	637	646
Service Time	3.094	3.673	3.615
HCM Lane V/C Ratio	0.444	0.41	0.443
HCM Control Delay	12.1	12.5	13
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.3	2	2.3

Intersection	
Intersection Delay, s/veh	34.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	19	145	109	64	167	20	57	228	48	6	209	25
Future Vol, veh/h	19	145	109	64	167	20	57	228	48	6	209	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	25	25	31	16	25	18	30	13	28	54	20	9
Mvmt Flow	22	171	128	75	196	24	67	268	56	7	246	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	29.8	27.3	46.1	29.5
HCM LOS	D	D	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	7%	25%	3%
Vol Thru, %	68%	53%	67%	87%
Vol Right, %	14%	40%	8%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	333	273	251	240
LT Vol	57	19	64	6
Through Vol	228	145	167	209
RT Vol	48	109	20	25
Lane Flow Rate	392	321	295	282
Geometry Grp	1	1	1	1
Degree of Util (X)	0.875	0.724	0.679	0.691
Departure Headway (Hd)	8.041	8.111	8.281	8.804
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	451	446	434	409
Service Time	6.107	6.181	6.354	6.878
HCM Lane V/C Ratio	0.869	0.72	0.68	0.689
HCM Control Delay	46.1	29.8	27.3	29.5
HCM Lane LOS	E	D	D	D
HCM 95th-tile Q	9.1	5.7	4.9	5.1

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	130	2	77	136	146	6	197	89	156	203	16
Future Vol, veh/h	8	130	2	77	136	146	6	197	89	156	203	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	20	40	38	23	14	25	15	22	19	18	24
Mvmt Flow	9	141	2	84	148	159	7	214	97	170	221	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.6	36.6	24.2	37.9
HCM LOS	C	E	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	6%	21%	42%
Vol Thru, %	67%	93%	38%	54%
Vol Right, %	30%	1%	41%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	140	359	375
LT Vol	6	8	77	156
Through Vol	197	130	136	203
RT Vol	89	2	146	16
Lane Flow Rate	317	152	390	408
Geometry Grp	1	1	1	1
Degree of Util (X)	0.662	0.346	0.818	0.835
Departure Headway (Hd)	7.514	8.19	7.546	7.379
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	479	437	480	489
Service Time	5.586	6.28	5.608	5.445
HCM Lane V/C Ratio	0.662	0.348	0.813	0.834
HCM Control Delay	24.2	15.6	36.6	37.9
HCM Lane LOS	C	C	E	E
HCM 95th-tile Q	4.8	1.5	7.8	8.3

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	146	28	85	90	51	16	206	37	68	217	25
Future Vol, veh/h	17	146	28	85	90	51	16	206	37	68	217	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	14	23	13	11	28	14	43	18	50	9	21	12
Mvmt Flow	20	172	33	100	106	60	19	242	44	80	255	29
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	15.9	17.3	18.9	22.9
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	9%	38%	22%
Vol Thru, %	93%	0%	76%	40%	70%
Vol Right, %	0%	100%	15%	23%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	37	191	226	310
LT Vol	16	0	17	85	68
Through Vol	206	0	146	90	217
RT Vol	0	37	28	51	25
Lane Flow Rate	261	44	225	266	365
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.567	0.08	0.445	0.514	0.679
Departure Headway (Hd)	7.812	6.622	7.128	6.965	6.7
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	460	538	503	516	536
Service Time	5.589	4.398	5.213	5.046	4.773
HCM Lane V/C Ratio	0.567	0.082	0.447	0.516	0.681
HCM Control Delay	20.4	10	15.9	17.3	22.9
HCM Lane LOS	C	A	C	C	C
HCM 95th-tile Q	3.4	0.3	2.3	2.9	5.1

Intersection	
Intersection Delay, s/veh	72.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	225	247	132	108	237	24	109	191	57	10	228	266
Future Vol, veh/h	225	247	132	108	237	24	109	191	57	10	228	266
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	49	27	21	25	37	12	14	9	21	0	21	28
Mvmt Flow	265	291	155	127	279	28	128	225	67	12	268	313
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	111.9	48.1	74.5	41
HCM LOS	F	E	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	36%	0%	100%	0%	100%	0%	4%	0%
Vol Thru, %	64%	0%	0%	65%	0%	91%	96%	0%
Vol Right, %	0%	100%	0%	35%	0%	9%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	57	225	379	108	261	238	266
LT Vol	109	0	225	0	108	0	10	0
Through Vol	191	0	0	247	0	237	228	0
RT Vol	0	57	0	132	0	24	0	266
Lane Flow Rate	353	67	265	446	127	307	280	313
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.01	0.174	0.804	1.216	0.381	0.89	0.755	0.812
Departure Headway (Hd)	10.812	9.793	11.28	10.103	11.287	10.907	10.162	9.778
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	369	323	361	321	335	358	372
Service Time	8.512	7.493	8.98	7.803	8.987	8.607	7.862	7.478
HCM Lane V/C Ratio	1.041	0.182	0.82	1.235	0.396	0.916	0.782	0.841
HCM Control Delay	85.9	14.5	47.5	150.2	20.8	59.4	38.3	43.4
HCM Lane LOS	F	B	E	F	C	F	E	E
HCM 95th-tile Q	11.4	0.6	6.7	18.4	1.7	8.5	6	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Future Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.98	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1498	1227		1479	1206	1363	2667		1458	2738	
Flt Permitted		0.54	1.00		0.59	1.00	0.06	1.00		0.14	1.00	
Satd. Flow (perm)		834	1227		902	1206	90	2667		218	2738	
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)	85	59	71	156	46	56	77	1188	107	80	1546	106
RTOR Reduction (vph)	0	0	55	0	0	43	0	5	0	0	4	0
Lane Group Flow (vph)	0	144	16	0	202	13	77	1290	0	80	1648	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4	2			6		
Actuated Green, G (s)		30.0	30.0		30.0	30.0	86.5	79.2		86.5	77.3	
Effective Green, g (s)		30.0	30.0		30.0	30.0	86.5	79.2		86.5	77.3	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.67	0.61		0.67	0.59	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		192	283		208	278	149	1624		214	1628	
v/s Ratio Prot							0.04	c0.48		0.02	c0.60	
v/s Ratio Perm		0.17	0.01		c0.22	0.01	0.31			0.23		
v/c Ratio		0.75	0.06		0.97	0.05	0.52	0.79		0.37	1.01	
Uniform Delay, d1		46.5	39.0		49.6	38.9	41.3	19.2		11.3	26.4	
Progression Factor		1.00	1.00		1.00	1.00	0.82	0.73		1.18	1.13	
Incremental Delay, d2		14.5	0.1		53.9	0.1	1.6	2.9		0.1	10.1	
Delay (s)		61.0	39.0		103.4	38.9	35.3	16.9		13.4	39.9	
Level of Service		E	D		F	D	D	B		B	D	
Approach Delay (s)		53.7			89.4			18.0			38.7	
Approach LOS		D			F			B			D	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.4%	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												
Traffic Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Future Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1288			1406	1124	1446	2629		1289	2720	
Flt Permitted		0.82			0.73	1.00	0.05	1.00		0.17	1.00	
Satd. Flow (perm)		1078			1064	1124	75	2629		226	2720	
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)	115	12	96	29	12	28	85	1219	15	18	1673	131
RTOR Reduction (vph)	0	22	0	0	0	22	0	0	0	0	4	0
Lane Group Flow (vph)	0	201	0	0	41	6	85	1234	0	18	1800	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		26.4			26.4	26.4	90.1	83.1		90.1	81.2	
Effective Green, g (s)		26.4			26.4	26.4	90.1	83.1		90.1	81.2	
Actuated g/C Ratio		0.20			0.20	0.20	0.69	0.64		0.69	0.62	
Clearance Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		218			216	228	145	1680		213	1698	
v/s Ratio Prot							0.04	c0.47		0.00	c0.66	
v/s Ratio Perm		c0.19			0.04	0.01	0.36			0.05		
v/c Ratio		0.92			0.19	0.02	0.59	0.73		0.08	1.06	
Uniform Delay, d1		50.8			42.9	41.5	26.4	15.9		15.6	24.4	
Progression Factor		1.00			1.00	1.00	1.43	0.81		1.32	0.66	
Incremental Delay, d2		40.3			0.3	0.0	3.4	2.0		0.0	32.5	
Delay (s)		91.1			43.2	41.5	41.2	15.0		20.7	48.7	
Level of Service		F			D	D	D	B		C	D	
Approach Delay (s)		91.1			42.5			16.6			48.4	
Approach LOS		F			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.3%	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												
Traffic Volume (vph)	159	180	121	95	223	281	82	789	40	265	1252	146
Future Volume (vph)	159	180	121	95	223	281	82	789	40	265	1252	146
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			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	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1304			1457	1293	1179	2697		1374	2765	
Flt Permitted	0.30	1.00			0.47	1.00	0.10	1.00		0.26	1.00	
Satd. Flow (perm)	386	1304			696	1293	123	2697		369	2765	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	161	182	122	96	225	284	83	797	40	268	1265	147
RTOR Reduction (vph)	0	18	0	0	0	65	0	3	0	0	6	0
Lane Group Flow (vph)	161	286	0	0	321	219	83	834	0	268	1406	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.7	
Effective Green, g (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.7	
Actuated g/C Ratio	0.27	0.27			0.27	0.27	0.63	0.51		0.63	0.57	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	102	346			184	343	145	1379		352	1567	
v/s Ratio Prot		0.22					0.04	0.31		0.09	c0.51	
v/s Ratio Perm	0.42				c0.46	0.17	0.32			c0.39		
v/c Ratio	1.58	0.83			1.74	0.64	0.57	0.60		0.76	0.90	
Uniform Delay, d1	47.8	44.9			47.8	42.2	16.8	22.5		28.9	24.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.35	1.37	
Incremental Delay, d2	301.8	14.5			356.6	3.4	4.4	2.0		0.9	0.9	
Delay (s)	349.6	59.4			404.3	45.7	21.3	24.4		39.9	34.8	
Level of Service	F	E			F	D	C	C		D	C	
Approach Delay (s)		159.9			236.0			24.1			35.6	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	81.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	117.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	87	84	82	917	1176	245
Future Vol, veh/h	87	84	82	917	1176	245
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	35	31	25	29	16
Mvmt Flow	95	91	89	997	1278	266

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2089	774	1546	0	-	0
Stage 1	1412	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Critical Hdwy	7.22	7.6	4.72	-	-	-
Critical Hdwy Stg 1	6.22	-	-	-	-	-
Critical Hdwy Stg 2	6.22	-	-	-	-	-
Follow-up Hdwy	3.71	3.65	2.51	-	-	-
Pot Cap-1 Maneuver	~ 36	278	309	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 13	277	309	-	-	-
Mov Cap-2 Maneuver	~ 13	-	-	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	148	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1739.9	7.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	309	-	13	277	-	-
HCM Lane V/C Ratio	0.288	-	7.274	0.33	-	-
HCM Control Delay (s)	21.3	5.[illegible]	$ 3396.4	24.3	-	-
HCM Lane LOS	C	A	F	C	-	-
HCM 95th %tile Q(veh)	1.2	-	12.9	1.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

TECHNICAL MEMORANDUM #5

Alternatives Analysis and Funding Program

Date:	June 7, 2019	Project #: 21071.4
To:	Chris Kerr & Eric Liljequist, City of Woodburn Michael Duncan, Oregon Department of Transportation, Region 2 Technical Advisory Committee and Community Advisory Committee	
From:	Matt Hughart and Molly McCormick, Kittleson & Associates, Inc.	
Subject:	Technical Memo #5: Alternatives Analysis and Funding Program (Subtask 4.2)	

This memorandum identifies potential alternatives to address the issues identified in *Tech Memo 3: Existing Conditions Inventory and Analysis* and *Tech Memo 4: Future Systems Conditions*. *Attachment "A" contains a menu of potential solutions that can be used to address many of these needs identified in this memo.* The solutions include those related to the following:

- Auto-related Alternatives
- Street Connectivity and Extension Plan
- Transportation System Management and Operations
- Access Management and Spacing
- Bicycle
- Pedestrian
- Multi-Use Paths
- Transit
- Intermodal Route Connectivity
- Rail
- Freight
- Safe Routes to School
- Safety
- Funding Programs

The solutions include potential policies, plans, programs, and projects for inclusion in the Woodburn Transportation System Plan (TSP) update. These solutions were reviewed by the project Technical Advisory Committee (TAC), Community Advisory Committee (CAC), and general public to determine if they should move forward into the Draft TSP update and to identify the highest priorities for limited funding.

AUTO-RELATED ALTERNATIVES

Streets serve a majority of all trips within Woodburn across all travel modes. In addition to motorists, pedestrians, bicyclists, and public transit riders use streets to access areas locally and regionally. This section summarizes the solutions considered for implementation within the City of Woodburn and the potential alternatives proposed at specific locations to address existing gaps and deficiencies in the auto system and future needs.

Solutions Considered

The following provides a description of different solutions considered for the auto system.

Street Connectivity Solutions

Although the Woodburn's downtown is largely built on a grid system, much of the residential neighborhood, commercial, and industrial development throughout the city has resulted in a network of cul-de-sacs and stubs streets. These streets can be desirable to residents because they can limit traffic speeds and volumes on local streets, but cul-de-sacs and stub streets result in longer trip distances, increased reliance on arterials for local trips, and limited options for people to walk and bike to the places they want to go.

The future street system needs to balance the benefits of providing a well-connected grid system with the connectivity challenges in the city due to I-5 and railroads running through the city and existing development. Incremental improvements to the street system can be planned carefully to provide route choices for motorists, cyclists, and pedestrians while accounting for potential neighborhood impacts. In addition, the quality of the transportation system can be improved by making connectivity improvements to the pedestrian and bicycle system separate from street connectivity, as discussed through solutions presented in later sections.

The following are potential connectivity solutions that can be applied in the City of Woodburn.

- Re-designate a roadway with a higher *or lower* functional classification to improve the order and function of the roadway
- Construct a new roadway or extend an existing roadway to improve connectivity within an area of the city

Capacity-Based Solutions

Turn Lanes

Separate left- and right-turn lanes, as well as two-way left-turn lanes (TWLTL) can provide separation between slowed or stopped vehicles waiting to turn and through vehicles. The design of turn lanes is largely determined based on a traffic study that identifies the storage length needed to accommodate vehicle queues. Turn lanes are commonly used at intersections where the turning volumes warrant the need for separation.

Traffic Signals

Traffic signals allow opposing streams of traffic to proceed in an alternating pattern. National and state guidance indicates when it is appropriate to install traffic signals at intersections. When used, traffic signals can effectively manage high traffic volumes and provide dedicated times in which pedestrians and cyclists can cross roadways. Because they continuously draw from a power source and must be periodically re-timed, signals typically have higher maintenance costs than other types of intersection control. Signals can improve safety at intersections where signal warrants are met, however, they may result in an increase in rear-end crashes compared to other solutions. Signals have a significant range in costs depending on the number of approaches, how many through and turn lanes each approach has, and if it is located in an urban or rural area. The cost of a new traffic signal ranges from approximately $250,000 in rural areas to $500,000 in urban areas.

Signal Timing/Phasing Modifications

Signal retiming and optimization offers a relatively low-cost option to increase system efficiency. Retiming and optimization refers to updating timing plans to better match prevailing traffic conditions and coordinating signals. Timing optimization can be applied to existing systems or may include upgrading signal technology, such as signal communication infrastructure, signal controllers, or cabinets. Signal retiming can reduce travel times and be especially beneficial to improving travel time reliability. In high pedestrian or desired pedestrian areas, signal retiming can facilitate pedestrian movements through intersections by increasing minimum green times to give pedestrians time to cross during each cycle, which may create additional delay for other intersection users. Signals can also facilitate bicycle movements with the inclusion of bicycle detectors.

Signal upgrades often come at a higher cost than signal timing and phasing modifications and usually require further coordination between jurisdictions. However, upgrading signals provides the opportunity to incorporate advanced signal systems to further improve the efficiency of a transportation network. Strategies include coordinated signal operations across jurisdictions, centralized control of traffic signals, adaptive or active signal control, and transit or freight signal priority as further described in the Transportation System Management and Operations (TSMO) section. These advanced signal systems can reduce delay, travel time, and the number of stops for transit, freight, and other vehicles. In addition, these systems may help reduce vehicle emissions and improve travel time reliability.

Roundabouts

Roundabouts are circular intersections where entering vehicles yield to vehicles already in the circle. They are designed to slow vehicle speeds to 20 to 30 mph or less before they enter the intersection, which promotes a more comfortable environment for pedestrians, bicyclists, and other non-motorized users. Roundabouts have fewer conflict-points and have been shown to reduce the severity of crashes, as compared to signalized intersections. Roundabouts can be more costly to design and install when compared to other intersection control types, but they have a lower operating and maintenance cost than traffic signals. Topography must be carefully evaluated in considering a roundabout, given that slope characteristics at an intersection may render a roundabout infeasible. The cost of a new roundabouts ranges from approximately $2 million to $4 million depending upon the number of lanes and the slope conditions.

Traffic Signal

Roundabout

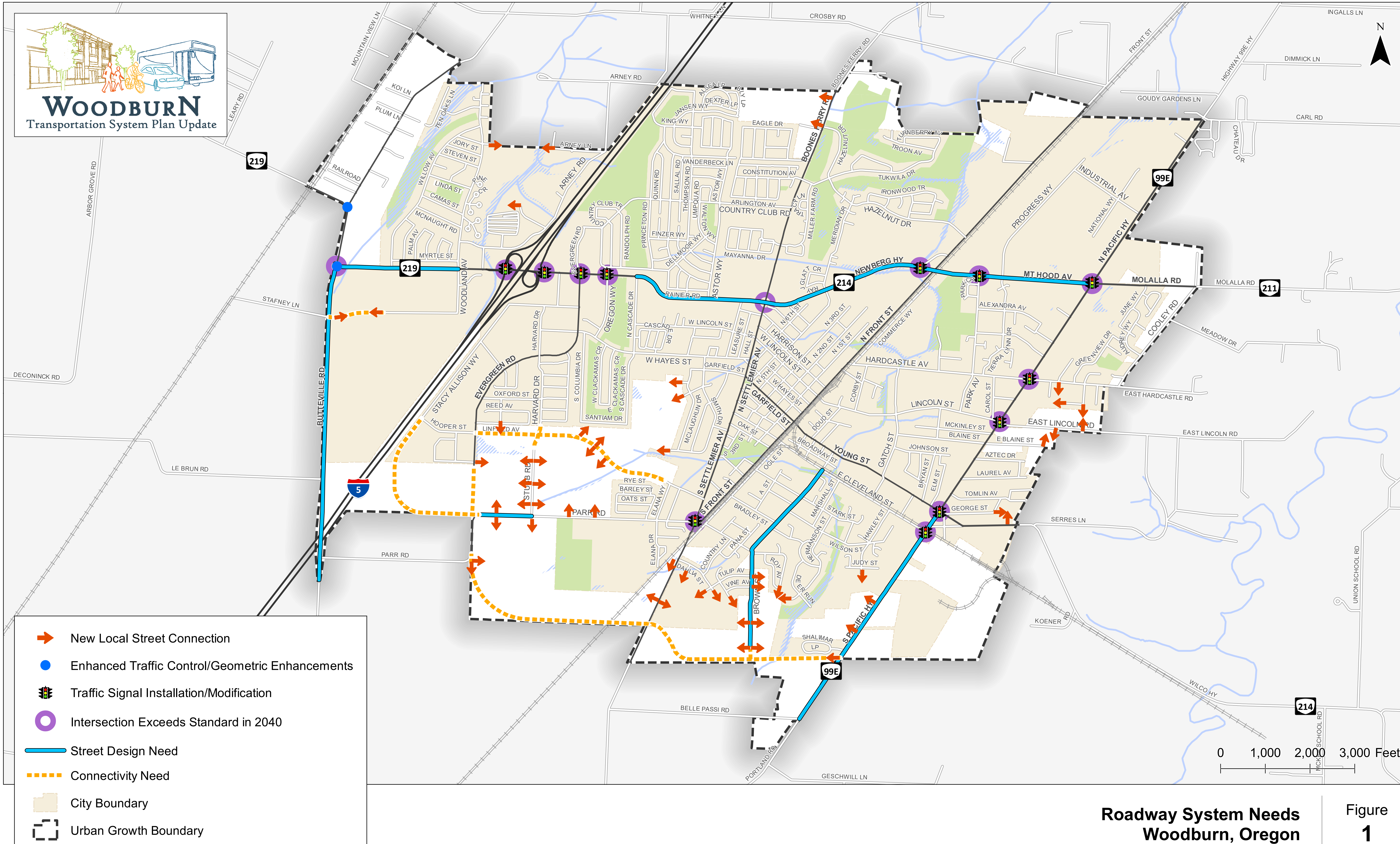
Through Lanes

When the demand per lane on a roadway segment has reached saturation, a potential solution is to construct additional through lanes. Although this theoretically adds capacity to the corridor, added lanes can allow latent demand from the system to show an increase in demand. Added lanes may also create induced demand where drivers see that roadway as less of a barrier with its increased capacity, drawing in additional new demand and potentially maintaining or worsening the rate of congestion.

When a roadway does not have a consistent number of travel lanes per direction along a corridor, an added through lane may provide a consistent cross-section allowing for less weaving by vehicles traveling the corridor.

Potential Improvements

The following improvements have been organized by location. Where there are multiple improvements, the improvements shown in **bold text** were identified as the preferred improvement based on an evaluation of environmental, engineering, land use “fatal flaws”, and anticipated funding capacity as well as discussions with the project team, advisory committees, and the general public. Figure 1 illustrated the roadway system needs discussed below. *Attachment “B” contains the year 2040 future capacity-based alternatives traffic conditions worksheets.*



Roadway System Needs
Woodburn, Oregon

Figure 1

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

H:\21\21071 - Woodburn TSP Update\gis\TM5\01 Roadway System Needs.mxd - mmccormick - 2:35 PM 8/2/2019

Street Connectivity Improvements

Arterial/Collector/Access Street Connectivity Needs

The following identifies potential connectivity improvements for collector and arterial-level roadways, including potential changes to the city's functional classification plan.

- Re-designate Ben Brown Lane as an Access Street from Settlemier Avenue to Elans Way. Extend Ben Brown Lane to Evergreen Road as an Access Street as part of future residential development
- Construct the Southern Arterial from Evergreen Road to OR 99E (2 lanes)
- Extend Evergreen Road south to Parr Road
- Extend Stacy Allison Way south to Parr Road
- Extend Brown Street south to the South Arterial
- Extend Woodland Avenue west to Butteville Road through future development

Local Street Connectivity Needs

The local street system within Woodburn's existing residential area is largely built-out. However, there are a number of residentially zoned areas that could experience future low-density residential growth in the southwest, south, and southeast parts of the City. Within these areas, there are opportunities for new local streets that could improve access and circulation for all travel modes. Figure 1 illustrates the location of the local street connections.

Capacity-Based Improvements

Upgrade/widen Roadway

The following identifies potential roadway segments to upgrade to their determined functional classification standard or to widen to construct additional travel lanes.

- Widen OR 219 from Butteville Road to Willow Avenue to include two lanes in each direction and a two-way left-turn lane (state highway)
- Widen OR 214 from Cascade Drive to OR 99E to include two lanes in each direction and a two-way left-turn lane, including changes to signal timing as appropriate (state highway)
- Widen OR 99E from Lincoln Street to southern UGB to provide a two-way left-turn lane and wider shoulders, including impacts to the railroad crossing (in conjunction with pedestrian and bicycle facility improvements) (state highway)
- Upgrade Parr Road to service collector urban standards (country roadway)
- Upgrade Butteville Road south of OR 219 to minor arterial urban standards (county roadway)
- Upgrade Brown Street to service collector urban standards (city roadway)

Butteville Road/OR 219

Parr Road/Settlemier Avenue is forecast to not meet the ODOT's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical northbound through movement is forecast to experience average delays greater than 100 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Install intersection capacity improvement such as traffic signal (if/when warranted), turn lanes, or roundabout.**
- Install an uncoordinated traffic signal with actuated timing (if/when warranted).

Solution	V/C	Delay (seconds)	LOS
Install a traffic signal with westbound turn lane	0.86	20.0	C

OR 214/I-5 Southbound Ramp

OR 214/I-5 Southbound Ramp is forecast to not meet ODOT's operating standard of a v/c less than 0.85 under future 2040 conditions. While the intersection is not meeting the 0.85 mobility target, the intersection is forecast to still have available capacity. As such, mitigation measures that involve physical improvements may not be necessary. Therefore, the following improvements are being considered at the intersection:

- **Increase the cycle length from 100 to 120 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination.**
- Increase the cycle length from 100 to 150 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination. This is an unlikely timing scenario based on current ODOT signal timing practices for a city the size of Woodburn.

Solution	V/C	Delay (seconds)	LOS
Signal retiming – 120 second cycle length	0.82	21.7	C
Signal retiming – 150 second cycle length	0.78	24.6	C

OR 214/I-5 Northbound Ramp

OR 214/I-5 Northbound Ramp is forecast to not meet ODOT's operating standard of a v/c less than 0.85 under future 2040 conditions. The critical westbound through movement is forecast to experience average delays greater than 20 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Increase the cycle length from 100 to 120 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination.**
- Increase the cycle length from 100 to 150 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination. This is an unlikely timing scenario based on current ODOT signal timing practices for a city the size of Woodburn.

Solution	V/C	Delay (seconds)	LOS
Signal retiming – 120 second cycle length	0.92	32.8	C
Signal retiming – 150 second cycle length	0.91	36.5	D

OR 214/Evergreen Road

OR 214/Evergreen Road is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical eastbound through movement is forecast to experience average delays greater than 250 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Increase the cycle length from 100 to 120 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination.**
- Increase the cycle length from 100 to 150 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination. This is an unlikely timing scenario based on current ODOT signal timing practices for a city the size of Woodburn.

Solution	V/C	Delay (seconds)	LOS
Signal retiming – 120 second cycle length	1.12	104.4	F
Signal retiming – 150 second cycle length	1.13	93.8	F

OR 214/Oregon Way/Country Club Road

OR 214/Oregon Way/Country Club Road is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical westbound through movement is forecast to experience average delays greater than 80 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Increase the cycle length from 100 to 120 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination.**
- Increase the cycle length from 100 to 150 seconds and optimize the signal timing. The expectation is that all signalized intersections from the I-5 Southbound Ramp to Oregon Way will have increased cycle lengths and continue to operate in coordination. This is an unlikely timing scenario based on current ODOT signal timing practices for a city the size of Woodburn.

Solution	V/C	Delay (seconds)	LOS
Signal retiming – 120 second cycle length	0.94	32.3	C
Signal retiming – 150 second cycle length	0.88	26.2	C

OR 214/Boones Ferry Road NE/N Settlemier Avenue

OR 214/Boones Ferry Road NE/N Settlemeier Avenue is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical westbound through movement is forecast to experience average delays greater than 250 seconds per vehicle. See the OR 214 widening improvement earlier in this section for the preferred alternative at this intersection.

OR 214/Front Street

OR 214/Front Street is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical southbound movements are forecast to experience average delays greater than 300 seconds per vehicle. In addition to the below improvement, see the OR 214 widening improvement for another alternative at this intersection.

- **Install intersection capacity improvement such as traffic signal (if/when warranted), turn lanes, or roundabout.**
- Install a traffic signal with actuated timing (if/when warranted). Similar to other signalized intersections along the segment of OR 214 between Cascade Drive and OR 99E, this improvement is proposed as an uncoordinated signalized intersection.

Solution	V/C	Delay (seconds)	LOS
Install a traffic signal	0.91	21.8	C

OR 214/Park Avenue

OR 214/Park Avenue is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical northbound and southbound left-turn movements are forecast to experience average delays greater than 300 seconds per vehicle. In addition to the below improvement, see the OR 214 widening improvement for another alternative at this intersection.

- **Install intersection capacity improvement such as traffic signal (if/when warranted), turn lanes, or roundabout.**
- Install a traffic signal with actuated timing (if/when warranted). Similar to other signalized intersections along the segment of OR 214 between Cascade Drive and OR 99E, this improvement is proposed as an uncoordinated signalized intersection.

Solution	V/C	Delay (seconds)	LOS
Install a traffic signal	0.92	23.7	C

OR 214/OR 211/OR 99E

OR 214/OR 211/OR 99E is forecast to not meet ODOT's operating standard of a v/c less than 0.95 under future 2040 conditions. The critical southbound through movement is forecast to experience average delays greater than 120 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- Install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing.

Solution	V/C	Delay (seconds)	LOS
Turn lane and signal retiming	1.19	112.7	F

Parr Road/Settlemier Avenue

Parr Road/Settlemier Avenue is forecast to not meet the City's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical eastbound through movement is forecast to experience average delays greater than 100 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Install intersection capacity improvement such as traffic signal (if/when warranted), turn lanes, or roundabout.**
- Install an uncoordinated traffic signal with actuated timing (if/when warranted).

Solution	V/C	Delay (seconds)	LOS
Install a traffic signal	0.85	17.1	B

OR 99E/Hardcastle Avenue

OR 99E/Hardcastle Avenue is forecast to not meet ODOT's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical southbound through movement is forecast to experience average delays greater than 30 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Reconfigure the westbound approach to have a separate left-turn lane and a shared through-right turn lane.**
- In addition to reconfiguring the westbound approach, install a separate right-turn lane on the southbound approach. Review and update signal timing as needed.

Solution	V/C	Delay (seconds)	LOS
Reconfigure east leg	0.95	26.7	C
Turn lane and reconfigure east leg	0.90	24.3	C

OR 99E/Lincoln Street

OR 99E/Lincoln Street is forecast to not meet ODOT's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical southbound through movement is forecast to experience average delays greater than 40 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- **Install a shared through-right turn lane on the eastbound approach and reconfigure the existing approach lane as a separate left-turn lane.**
- In addition to reconfiguring the eastbound approach, install a separate right-turn lane on the southbound approach. Review and update signal timing as needed.

Solution	V/C	Delay (seconds)	LOS
Reconfigure west leg	0.92	18.8	B
Turn lane	0.86	16.2	B

OR 99E/Young Street

OR 99E/Young Street is forecast to not meet ODOT's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical southbound through movement is forecast to experience average delays greater than 30 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- Install a third westbound lane to provide separate left, thru, and right turn lanes. Implement protected-permissive left-turn phasing on the eastbound and westbound approaches.

Solution	V/C	Delay (seconds)	LOS
Turn lane and signal phasing updates	0.98	41.3	D

OR 99E/Cleveland Street

OR 99E/Cleveland Street is forecast to not meet ODOT's operating standard of a v/c less than 0.90 under future 2040 conditions. The critical westbound through movement is forecast to experience average delays greater than 80 seconds per vehicle. Therefore, the following improvements are being considered at the intersection:

- Install intersection capacity improvement such as a traffic signal (if/when warranted), turn lanes, or roundabout. Similar to other signalized intersections along OR 99E, one potential improvement is proposed as a coordinated signalized intersection with a cycle length of 130 seconds.

Solution	V/C	Delay (seconds)	LOS
Install a traffic signal	0.76	9.3	A

Modeled Alternative Packages

The above potential capacity-based improvements were explored using the volumes developed from the 2040 no-build travel demand model output provided by TPAU, as described in Technical Memorandum #4: Future Systems Conditions. Forecast traffic volumes were developed for the study intersections based on the existing traffic counts and information provided in the Woodburn travel demand model. The travel demand model provides base year 2015 and forecast year 2040 traffic volume projections that reflect anticipated land use changes and any funded transportation improvements within the study area. The forecast traffic volumes were developed by applying the post-processing methodology presented in the National Cooperative Highway Research Program (NCHRP) Report 255 *Highway Traffic Data for Urbanized Area Project Planning and Design*, in conjunction with engineering judgment and knowledge of the study area.

Output for three additional model alternatives were provided through the Woodburn travel demand model to understand the traffic impacts of constructing specific connectivity projects in Woodburn. *Attachment "C" contains the travel demand model data provided by TPAU for the three additional alternatives.* The improvements included in each alternative are described below.

Modeled Improvement Alternative 1

Alternative 1 focused on widening sections of the OR 214 and OR 99E corridors to provide consistent cross-sections, minimize weaving, and limit bottlenecks for through traffic on the major east-west and north-south connections. The following capacity-based improvements were modeled as part of Alternative 1:

- Widen OR 219 from Butteville Road to Woodland Avenue to include two lanes in each direction and a two-way left-turn lane
- Widen OR 214 from Cascade Drive to OR 99E to include two lanes in each direction and a two-way left-turn lane
- Widen OR 99E from Young Street to southern UGB to provide a two-way left-turn lane and wider shoulders (in conjunction with pedestrian and bicycle facility improvements)

Although this alternative provided more capacity along the OR 214 and OR 99E corridors, portions of those segments were found to experience more delay compared to the no-build scenario. This may be due to latent demand within the larger roadway network. All study intersections that were forecast to not meet standards in the no-build scenario were found to continue to not meet standards in Alternative 1.

Modeled Improvement Alternative 2

Alternative 2 builds upon the projects in Alternative 1 with the inclusion of major roadway connectivity projects in the developing segments of western Woodburn. The following additional improvements were modeled as part of Alternative 2:

- Construct a grid system of access and local streets as development occurs in the UGB expansion area between Stacy Allison Way and Settlemier Avenue to the north of Parr Road
- Extend Evergreen Road south to Parr Road
- Extend Stacy Allison Way south to Parr Road
- Extend Woodland Avenue west to Butteville Road through future development

Similar to Alternative 2, study intersections continue to not meet standards with these improvements in place, although intersections along Front Avenue and OR 99E experience a small decrease in demand and delay. Better collector-level connectivity will provide some route alternatives for the anticipated growth in southwest Woodburn, but the main east-west travel corridors are forecast to continue to experience capacity constraints and congestion at major intersections.

Alternative 3

Alternative 3 incorporates a new southern arterial, which has been a planned east-west connection in south Woodburn for over a decade. In addition to all improvements modeled in Alternatives 1 and 2, Alternative 3 includes:

- A new two-lane arterial roadway that would be developed along the south UGB boundary connecting Parr Road (at Evergreen Road) to OR 99E.

Based on the Woodburn travel demand model output, all regionally significant study intersections continue to not meet standards with the inclusion of the southern arterial. Although it provides a needed east-west alternative to OR 214, the southern arterial lacks a direct connection to I-5, limiting its effectiveness as a regional east-west alternative. However, such a connection would provide an important east-west alternative for Woodburn that would greatly benefit all new industrial and residential development in the growing southwest portion of the City.

Table 1 summarizes the results of the future alternatives traffic operations analysis at the study intersections under year 2040 traffic conditions. *Attachment "D" contains the year 2040 future alternatives traffic conditions worksheets.* As shown in Table 1, 14 study intersections were forecast to exceed their acceptable mobility standards and targets under year 2040 no-build forecast traffic conditions. The same study intersections, with the exception of Parr Road/Settlemier Avenue, are forecast to also not meet standards under the three alternative scenarios modeled.

Table 1: Alternatives Comparison - Weekday PM Peak Hour Intersection Operations

Map ID	Intersection	Mobility Target/ Operations Standard		Target/ Standard Met?			
		Agency	Maximum	2040 No-Build	Alternative 1	Alternative 2	Alternative 3
Signalized Intersections							
2	OR 219/Woodland Avenue	ODOT	v/c 0.95	Yes	Yes	Yes	Yes
3	OR 214/I-5 Southbound Ramp	ODOT	v/c 0.85	*No*	*No*	*No*	*No*
4	OR 214/I-5 Northbound Ramp	ODOT	v/c 0.85	*No*	*No*	*No*	*No*
5	OR 214/Evergreen Road	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
6	OR 214/Oregon Way/Country Club Road	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
8	OR 214/Boones Ferry Road NE	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
9	OR 214/Meridian Drive/5th Street	ODOT	v/c 0.95	Yes	Yes	Yes	Yes
12	OR 214/OR 211/OR 99E	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
19	OR 99E/Hardcastle Avenue	ODOT	v/c 0.90	*No*	*No*	*No*	*No*
20	OR 99E/Lincoln Street	ODOT	v/c 0.90	*No*	*No*	*No*	*No*
21	OR 99E/Young Street	ODOT	v/c 0.90	*No*	*No*	*No*	*No*
Unsignalized Intersections							
1	Butteville Road/OR 219	ODOT	v/c 0.90	*No*	*No*	*No*	*No*
7	Cascade Drive/OR 214	ODOT	v/c 0.95	Yes	Yes	Yes	Yes
10	Front Street/OR 214	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
11	Park Avenue/OR 214	ODOT	v/c 0.95	*No*	*No*	*No*	*No*
13	Boones Ferry Road NE/Crosby Road	County	LOS D and v/c 0.85	Yes	Yes	Yes	Yes
14	Hardcastle Avenue/Front Street	City	v/c 0.90	Yes	Yes	Yes	Yes
15	Lincoln Street/Front Street	City	v/c 0.90	Yes	Yes	Yes	Yes
16	Garfield Street/Young Street/Front Street	City	v/c 0.90	Yes	Yes	Yes	Yes
17	Cleveland Street/Front Street	City	v/c 0.90	Yes	Yes	Yes	Yes
18	Parr Road/Settlemier Avenue	City	v/c 0.90	*No*	*No*	*No*	Yes
22	OR 99E/Cleveland Street	ODOT	v/c 0.90	*No*	*No*	*No*	*No*

Notes:
LOS = Intersection Level of Service (Signal), Critical Movement Level of Service (TWSC).
Delay = Intersection Average vehicle delay (Signal), critical movement vehicle delay (TWSC).
V/C = Intersection V/C (Signal) critical movement V/C (TWSC).
MOE = Measure of Effectiveness

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS

Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies are two complementary approaches to managing transportation and maximizing the existing system. Together, these strategies are referred to as Transportation System Management and Operations (TSMO). TDM addresses the *demand* on the system: the number of vehicles traveling on the roadways each day. TDM alternatives include any method intended to shift travel demand from single occupant vehicles to non-auto modes or carpooling, travel along less congested roadways, or at less congested times of the day. TSM addresses the *supply* of the system: using strategies to improve the system efficiency without increasing roadway widths or building new roads. TSM alternatives are focused on improving operations by enhancing capacity during peak times, typically with advanced technologies to improve traffic operations.

The following section provides an overview of a broad range of TSMO measures that are being implemented and considered in Oregon and identifies and explains those that are most applicable to the City of Woodburn.

Solutions Considered

Successful implementation of TSMO strategies relies on the participation of a variety of public and private entities. Strategies can be implemented by the city, a neighborhood, or particular employer. In addition, they can be categorized as policies, programs, or physical infrastructure investments. Table 2 provides a summary of potential measures that can be implemented within Woodburn and which entities are generally in the position to implement each one. As the city continues to grow and redevelop over the next 10 to 20 years, the applicability of these strategies can be further reviewed. Additional information on potential strategy implementation within Woodburn is discussed below.

The following section provides more detail on policy, programming, and infrastructure TSMO strategies that may be effective for managing transportation demand and increasing system efficiency in the City of Woodburn, especially within the next 10 to 20 years.

Table 2: Transportation System Management and Transportation Demand Management Strategies

TSMO Strategy	TDM or TSM?	Type of Investment	City	State	Transit Provider	Employers	Developers
Parking management	TSM/TDM	Policy	P		S	S	S
Limited/flexible parking requirements	TDM	Policy	P			S	S
Access management	TSM/TDM	Policy/ Infrastructure	P	P			
Connectivity standards	TSM/TDM	Policy/ Infrastructure	P	P			
Congestion pricing	TSM/TDM	Policy/ Infrastructure	P	P			
Flexible Work Shifts	TDM	Program/Policy	S			P	
Frequent transit service	TDM	Program	S		P		
Free or subsidized transit passes	TDM	Program	S			P	
Collaborative Marketing	TDM	Program	S		S	S	S
Preferential carpool parking	TDM	Program	S			P	
Carpool match services	TDM	Program	S			S	
Parking cash out	TDM	Program			S	P	
Carsharing program support	TDM	Program	S			P	P
Bicycle facilities	TDM	Infrastructure	P	S	S	S	S
Pedestrian Facilities	TDM	Infrastructure	P	S	S	S	S
Regional ITS	TSM	Infrastructure	S	P			
Regional traffic management	TSM	Infrastructure	S	P			
Advanced signal systems	TSM	Infrastructure	S	P			
Real time traveler data	TSM	Infrastructure	S	P			
Arterial corridor management	TSM	Infrastructure	S	P			

P: Primary role
S: Secondary/Support role

Programming

Programming solutions can provide effective and low-cost options for reducing transportation demand. Some of the most effective programming strategies can be implemented by employers and are aimed at encouraging non-single occupancy vehicle (SOV) commuting. These strategies are discussed below.

Carpool/Vanpool Match Services

A rideshare/carpool program, run by public agencies and/or employers, coordinates regional commuters to find other commuters with similar routes to work. The program could allow commuters to connect and coordinate with others on locations, departure times, and driving responsibilities. Local employers can also play a role in encouraging an agency-run carpooling program by sharing information about the program, providing preferential carpool parking, and allowing employees to have flexibility in workday schedules.

Preferential Carpool/Vanpool Parking

A rideshare/carpool program, run by public agencies and/or employers, coordinates regional commuters to find other commuters with similar routes to work. The program could allow commuters to connect and coordinate with others on locations, departure times, and driving responsibilities. Local employers can also play a role in encouraging an agency-run carpooling program by sharing information about the program, providing preferential carpool parking, and allowing employees to have flexibility in workday schedules.

Collaborative Marketing

Public agencies, local business owners and operators, developers, and transit service providers can collaborate on marketing to get the word out to residents about transportation options that provide an alternative to single-occupancy vehicles.

Free or Subsidized Transit Passes

Local business owners and operators may work with the City or transit service providers to provide transit fare subsidies that support an alternative to single-occupancy vehicles.

Work Schedule Flexibility

Local business owners and operators may allow employees to have flexibility in workday schedules to alleviate demand during peak travel periods. Potential implementations include changing shift schedules to occur outside peak travel periods and allowing employees to work at home one day a week.

**Policy**

Policy solutions can be implemented by cities, counties, regions, or at the statewide level. Regional and state-level policies will affect transportation demand in Woodburn, but local policies can also have an impact. These policies are discussed below.

Limited and/or Flexible Parking Requirements

Cities set policies related to parking requirements for new developments. In order to allow developments that encourage multi-modal transportation, cities can set parking maximums and low minimums and/or allow for shared parking between uses. Cities can also provide developers the option to pay in-lieu fees instead of constructing additional parking. This option provides additional flexibility to developers that can increase the likelihood of development, especially on smaller lots where surface parking would cover a high portion of the total property.

Cities can also set policies that require provision of parking to the rear of buildings, allowing buildings in commercial areas to directly front the street. This urban form creates a more appealing environment for walking and window-shopping. In-lieu parking fees support this type of development for parcels that do not have rear- or side-access points.

Parking Management

Parking plays a large role in transportation demand management, and effective management of parking resources can encourage use of non-single occupancy vehicle modes. Cities can tailor policies to charge for public parking in certain areas or impose time limits on street parking in retail centers. Cities can also monitor public parking supply and utilization in order to inform future parking strategy.

Access Management

Access management describes a practice of managing the number, placement, and allowed movements at intersections and driveways that provide access to adjacent land uses. Access management policies can be important tools to improve transportation system efficiency by limiting the number of opportunities for turning movements on to or off of certain streets.

In addition, well deployed access management strategies can help manage travel demand by improving travel conditions for pedestrians and bicycles. Eliminating the number of access points on roadways allows for continuous sidewalk and bicycle facilities and reduces the number of potential interruptions and conflict points between pedestrians, bicyclists, and motor vehicles.

Access management is typically adopted as a policy in development guidelines. It can be extremely difficult to implement an access management program once properties have been developed along a corridor. Cooperation among and involvement of relevant government agencies, business owners, land developers, and the public is necessary to establish an access management plan that benefits all roadway users and businesses. Additional information on potential access management solutions is provided in a following section.

Commercial and Mixed-use Nodes

Land use plays a huge role in effected transportation impacts and needs. By establishing neighborhood commercial and mixed-use nodes that are equipped with direct sidewalk connections, bus stop provisions, and proper building orientation, a city can create opportunities to travel via modes other than a single-occupancy vehicle.

Signal Systems Improvements

Signal retiming and optimization offers a relatively low-cost option to increase system efficiency. Retiming and optimization refers to updating timing plans to better match prevailing traffic conditions and coordinating signals. Timing optimization can be applied to existing systems or may include upgrading signal technology, such as signal communication infrastructure, signal controllers, or cabinets. Signal retiming can reduce travel times and be especially beneficial to improving travel time reliability. In high pedestrian or desired pedestrian areas, signal retiming can facilitate pedestrian movements through intersections by increasing minimum green times to give pedestrians time to cross during each cycle, eliminating the need to push pedestrian crossing buttons. Signals can also facilitate bicycle movements with the inclusion of bicycle detectors.

Signal upgrades often come at a higher cost and usually require further coordination between jurisdictions. However, upgrading signals provides the opportunity to incorporate advanced signal systems to further improve the efficiency of a transportation network. Strategies include coordinated signal operations across jurisdictions, centralized control of traffic signals, adaptive or active signal control, and transit or freight signal priority. These advanced signal systems can reduce delay, travel time and the number of stops for transit, freight, and other vehicles. In addition, these systems may help reduce vehicle emissions and improve travel time reliability. The following signal system solutions have been identified for consideration within Woodburn:

- In addition to the above potential capacity-based improvements to the intersections along OR 99E, there is the potential to **coordinate the traffic signals from Hardcastle Avenue to Young Street** (or to the future Cleveland Street traffic signal) in coordination with ODOT.
- **Truck signal priority** systems use sensors to detect approaching heavy vehicles and alter signal timings to improve truck freight travel. While truck signal priority may improve travel times for trucks, its primary purpose is to improve the overall performance of intersection operations by clearing any trucks that would otherwise be stopped at the intersection and subsequently have to spend a longer time getting back up to speed. Implementing truck signal priority requires additional advanced detector loops, usually placed in pairs back from the approach to the intersection.

Real-Time Transit Information

Transit agencies or third-party sources can disseminate both schedule and system performance information to travelers through a variety of applications, such as in-vehicle, wayside, or in-terminal dynamic message signs, as well as the Internet or wireless devices. Coordination with regional or multimodal traveler information efforts can increase the availability of this transit schedule and system performance information. TriMet is one example of an agency that has implemented this through its Transit Tracker system.

These systems enhance passenger convenience and may increase the attractiveness of transit to the public by encouraging travelers to consider transit as opposed to driving alone. They do require cooperation and integration between agencies for disseminating the information, which may or may not be applicable for a transit system the size of Woodburn’s.

Potential Improvements

- Lead or provide support of potential TSM and TDM strategies within the City
- Promote a regional carpool/vanpool program
- Establish carpool/vanpool matching programs for ride-sharing
- Establish carpool parking programs
- Identify opportunities for collaborative marketing with local business owners and operators, developers, and transit service providers
- Provide transit fare subsidies
- Schedule shift changes to occur outside of peak travel periods
- Allow employees to work at home one day a week
- Update the Woodburn Development Ordinance (WDO) to limit and/or allow for flexible parking requirements
- Develop access management standards for city streets that reflect the functional classification of the roadway – Additional information on potential access management measures is provided below
- Establish neighborhood commercial and mixed-use nodes within the City
- Implement truck signal priority at key signalized intersections along OR 214 and OR 99E
- Work with ODOT to develop and implement a Traffic Management Plan for the OR 99E corridor that responds to increased congestion resulting from incidents on I-5 and regional events

ACCESS MANAGEMENT AND SPACING

The Oregon Highway Plan (OHP) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. Measures may include but are not limited to restrictions on the siting of interchanges, restrictions on the type and amount of access to roadways, and use of physical controls, such as signals and channelization including raised medians, to reduce impacts of approach road traffic on the main facility. The OHP requires that new connections to arterials and state highways be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets that are needed to provide reasonably direct routes for bicycle and pedestrian travel.

Solutions Considered

The TSP should identify access management techniques and strategies that help to preserve transportation system investments and guard against deteriorations in safety and increased congestion.

The City's approach to access management should balance the need for land use activities and property parcels to be served with appropriate access while preserving safe and efficient movement of traffic. Access management solutions include:

- Setting city-wide access spacing standards according to a roadway's functional classification;
- Obtaining special area designations along ODOT facilities that have alternative access spacing standards;
- Defining a variance process for when the standard cannot be met; and,
- Establishing an approach for access consolidation over time to move in the direction of the standards at each opportunity.

Access Spacing Standards

ODOT Standards

Oregon Administrative Rule 734, Division 51 establishes procedures, standards, and approval criteria used by ODOT to govern highway approach permitting and access management consistent with Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), statewide planning goals, acknowledged comprehensive plans, and the OHP. The OHP serves as the policy basis for implementing Division 51 and guides the administration of access management rules, including mitigation and public investment, when required, to ensure highway safety and operations pursuant to this division.

Access management standards for approaches to state highways are based on the classification of the highway and highway designation, type of area, and posted speed. Future developments along these corridors (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the OHP access management policies and standards. Table 3 summarizes ODOT's current access management standards for roadways within the Woodburn UGB per the OHP.

Table 3: ODOT Access Spacing Standards within Woodburn UGB

Corridor	To/From	Highway Classification	Posted Speed (MPH)	Spacing Standards (Feet)[1]
Hillsboro-Silverton Highway 140: OR 219	West UGB limits to Woodland Avenue	District Highway	55	700
Hillsboro-Silverton Highway 140: OR 214	Woodland Avenue to OR 99E	District Highway	35	350
Hillsboro-Silverton Highway 140: OR 99E	OR 214/OR 211 to Young Street	District Highway	35	350
Hillsboro-Silverton Highway 140: OR 214	East of OR 99E	District Highway	35	350
Woodburn-Estacada Highway 161: OR 211	East of OR 99E	District Highway	35	350
Pacific Highway 081: OR 99E	North of OR 214/OR 211	Regional Highway	35/45	350/500
Pacific Highway 081: OR 99E	South of Young Street	Regional Highway	35/45/55	350/500/990

[1] These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-5120(9).

City Standards

Access spacing standards for approaches to City streets are based on the roadway functional classification. WDO Section 3.04.03 Table 3.04A shows the minimum separation of a driveway from another intersection (street or driveway). The minimum separation for major arterials, minor arterials, and service collectors are 300 feet, 245 feet, and 50 feet, respectively. WDO Section 3.01.05 outlines that a block length should be between 200 and 600 feet long.

In addition to adopting access spacing standards, the City could adopt a policy that requires access be taken from lower classification streets whenever possible.

Access Spacing Variances

Access spacing variances may be provided to parcels whose highway/street frontage, topography, or location would otherwise preclude issuance of a conforming permit and would either have no reasonable access or cannot obtain reasonable alternate access to the public road system. In such a situation, a conditional access permit may be issued by ODOT or the City, as appropriate, for a connection to a property that cannot be accessed in a manner that is consistent with the spacing standards. The permit can carry a condition that the access may be closed at such time that reasonable access becomes available to a local public street. The approval condition might also require a given land owner to work in cooperation with adjacent land owners to provide either joint access points, front and rear cross-over easements, or a rear access upon future redevelopment.

The requirements for obtaining a deviation from ODOT's minimum spacing standards are documented in OAR 734-051-3050. For streets under the City's jurisdiction, the City may reduce the access spacing standards at the discretion of the City Engineer if the following conditions exist:

- Joint access driveways and cross access easements are provided in accordance with the standards;
- The site plan incorporates a unified access and circulation system in accordance with the standards;
- The property owner enters into a written agreement with the City that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint use driveway; and/or,
- The proposed access plan for redevelopment properties moves in the direction of the spacing standards.

The City Engineer may modify or waive the access spacing standards for streets under the City's jurisdiction where the physical site characteristics or layout of abutting properties would make development of a unified or shared access and circulation system impractical, subject to the following considerations:

- Unless modified, application of the access standard will result in the degradation of operational and safety integrity of the transportation system.
- The granting of the variance shall meet the purpose and intent of these standards and shall not be considered until every feasible option for meeting access standards is explored.
- Applicants for variance from these standards must provide proof of unique or special conditions that make strict application of the standards impractical. Applicants shall include proof that:
  - Indirect or restricted access cannot be obtained;
  - No engineering or construction solutions can be applied to mitigate the condition; and,
  - No alternative access is available from a road with a lower functional classification than the primary roadway.

No variance shall be granted where such hardship is self-created. Consistency between access spacing requirements and exceptions in the TSP and GMC is an important regulatory solution to be addressed as part of this TSP update.

Access Consolidation through Management

From an operational perspective, access management measures limit the number of redundant access points along roadways. This enhances roadway capacity, improves safety, and benefits circulation. Enforcement of the access spacing standards should be complemented with provision of alternative access points. Purchasing right-of-way and closing driveways without a parallel road system and/or other local access could seriously affect the viability of the impacted properties. Thus, if an access management approach is taken, alternative access should be developed to avoid “land-locking” a given property.

As part of every land use action, the City should evaluate the potential need for conditioning a given development proposal with the following items in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways.

- Providing access only to the lower classification roadway when multiple roadways abut the property.
- Provision of crossover easements on all compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels.
- Issuance of conditional access permits to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways.
- Right-of-way dedications to facilitate the future planned roadway system in the vicinity of proposed developments.

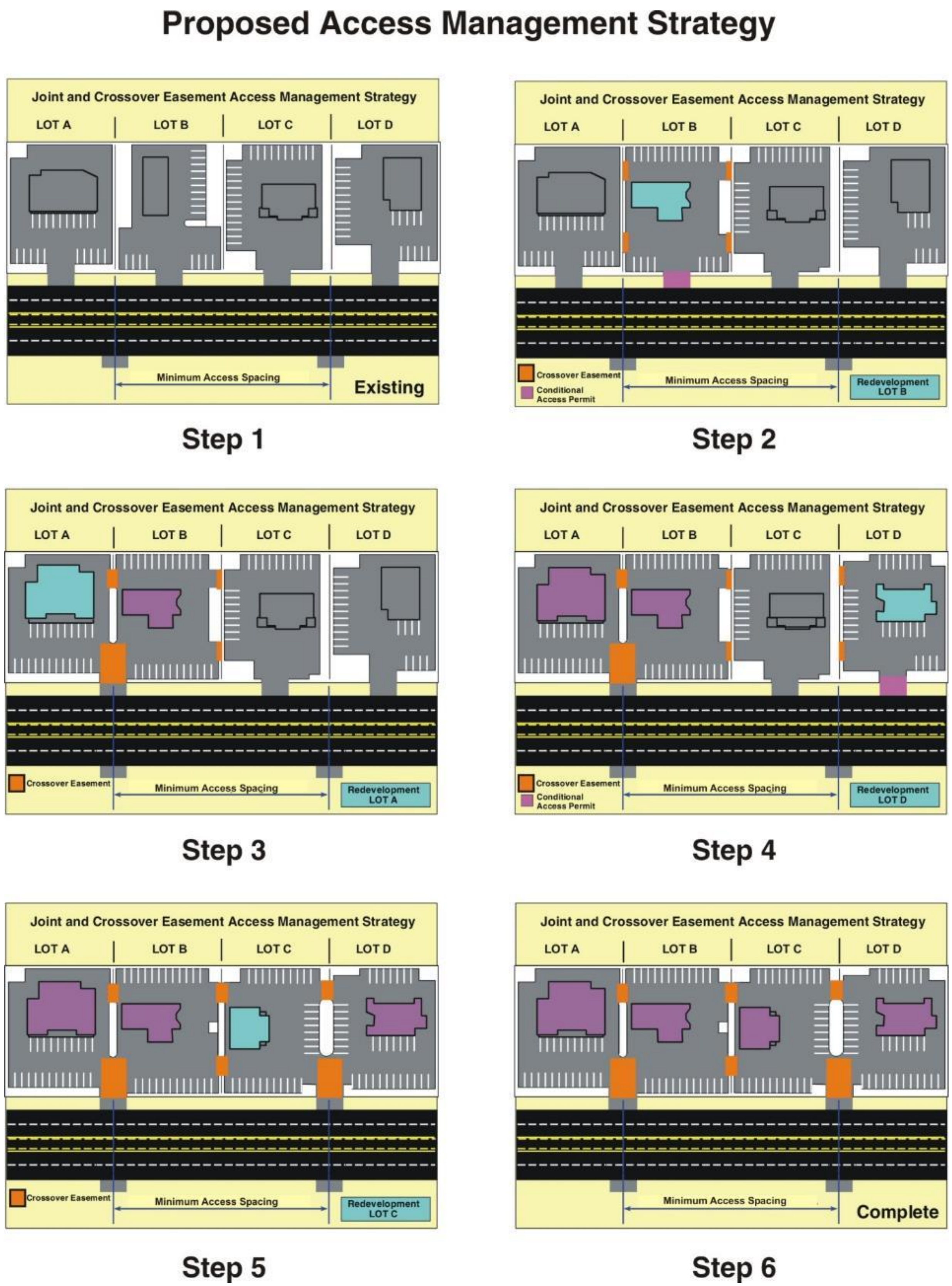
- Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) along site frontages that do not have full build-out improvements in place at the time of development.

Exhibit 1 illustrates the application of cross-over easements and conditional access permits over time to achieve access management objectives. The individual steps are described in Table 4. As illustrated in the exhibit and supporting table, by using these guidelines, all driveways along the highways can eventually move in the overall direction of the access spacing standards as development and redevelopment occur along a given street.

Table 4: Example of Crossover Easement/Indenture/Consolidation

Step	Process
1	EXISTING – Currently Lots A, B, C, and D have site-access driveways that neither meet the access spacing criteria of 500 feet nor align with driveways or access points on the opposite side of the highway. Under these conditions motorists are into situations of potential conflict (conflicting left turns) with opposing traffic. Additionally, the number of side-street (or site-access driveway) intersections decreases the operation and safety of the highway
2	REDEVELOPMENT OF LOT B – At the time that Lot B redevelops, the City would review the proposed site plan and make recommendations to ensure that the site could promote future crossover or consolidated access. Next, the City would issue conditional permits for the development to provide crossover easements with Lots A and C, and ODOT/City would grant a conditional access permit to the lot. After evaluating the land use action, ODOT/City would determine that LOT B does not have either alternative access, nor can an access point be aligned with an opposing access point, nor can the available lot frontage provide an access point that meets the access spacing criteria set forth for segment of highway.
3	REDEVELOPMENT OF LOT A – At the time Lot A redevelops, the City/ODOT would undertake the same review process as with the redevelopment of LOT B (see Step 2); however, under this scenario ODOT and the City would use the previously obtained cross-over easement at Lot B consolidate the access points of Lots A and B. ODOT/City would then relocate the conditional access of Lot B to align with the opposing access point and provide and efficient access to both Lots A and B. The consolidation of site-access driveways for Lots A and B will not only reduce the number of driveways accessing the highway, but will also eliminate the conflicting left-turn movements the highway by the alignment with the opposing access point.
4	REDEVELOPMENT OF LOT D – The redevelopment of Lot D will be handled in same manner as the redevelopment of Lot B (see Step 2)
5	REDEVELOPMENT OF LOT C – The redevelopment of Lot C will be reviewed once again to ensure that the site will accommodate crossover and/or consolidated access. Using the crossover agreements with Lots B and D, Lot C would share a consolidated access point with Lot D and will also have alternative frontage access the shared site-access driveway of Lots A and B. By using the crossover agreement and conditional access permit process, the City and ODOT will be able to eliminate another access point and provide the alignment with the opposing access points.
6	COMPLETE – After Lots A, B, C, and D redevelop over time, the number of access points will be reduced and aligned, and the remaining access points will meet the access spacing standard.

Exhibit 1: Cross Over Easement



Potential Improvements

- Develop city-wide access spacing standards according to a roadway's functional classification
- Define a variance process for when the standard cannot be met (see above)
- Establish an approach for access consolidation over time to move in the direction of the standards at each opportunity (see above). Cross-over easements should be provided on all compatible parcels (topography, access, and land use) to facilitate future access between adjacent parcels and inter-parcel circulation.
- Investigate and implement opportunities to provide alternative access to nonstate facilities when reasonable access can occur (consistent with the State's Division 51 access management standards)
- Consider opportunities to restrict certain turning movements at accesses (such as a right in-right out access)
- Through development, half-street improvements (sidewalks, curb and gutter, bicycle lanes/paths, and/or travel lanes) should be provided along all site frontages that do not have full buildout improvements in place at the time of development
- Through development, right-of-way dedications should be provided to facilitate the future planned transportation system in the vicinity of the proposed development

BICYCLE SYSTEM AND CONNECTIVITY

Bicycle facilities are the elements of the transportation system that enable people to travel safely and efficiently by bike. These include facilities along key roadways (e.g., shared lane pavement markings, on-street bike lanes, and separated bike facilities) and facilities at key crossing locations (e.g., enhanced bike crossings). These also include end of trip facilities (e.g. secure bike parking, changing rooms, and showers at worksites); however, these facilities are addressed through the development code. Each facility plays a role in developing a comprehensive bicycle system.

Solutions Considered

This section summarizes the solutions considered for implementation within the City of Woodburn to address existing gaps and deficiencies in the bicycle system and future needs.

Alternative Routes

Designate an alternative route along a parallel street that provides a more comfortable environment for cyclists with the same level of connectivity. The alternative route could be identified by wayfinding signs, which could also be used to identify essential destinations that can be reached by the route. The alternative route may provide shared-lane pavement markings and signs, on-street bike lanes, or other bicycle facilities.

Shared Lane Pavement Markings and Signs

Shared-lane pavement markings (often called "sharrows") are not a bicycle facility, but a tool designed to help accommodate bicyclists on roadways where bike lanes are desirable but infeasible to construct. Sharrows indicate a shared roadway space for cyclists and motorists and are typically centered in the travel lane or approximately four feet from the edge of the travelway. Sharrows are suitable on roadways with relatively low travel speeds (<35 mph) and low ADT (<3,000 ADT); however, they may also be used to transition between discontinuous bicycle facilities. Sharrows could be applied along a variety of streets within Woodburn where room for on-street bike lanes is limited.

On-Street bike lanes

On-street bike lanes are striped lanes on the roadway dedicated for the exclusive use of cyclists. Bike lanes are typically placed at the outer edge of pavement (but to the inside of right-turn lanes and/or on-street parking). Bicycle lanes can improve safety and security of cyclists and (if comprehensive) can provide direct connections between origins and destinations. On-street bike lanes could be applied along a variety of streets within Woodburn where space allows.

Separated Bike Facilities

Separated bike facilities include buffered bike lanes and separated bike lanes, or cycle tracks. Buffered bike lanes are on-street bike lanes that include an additional striped buffer of typically 2-3 feet between the bicycle lane and the vehicle travel lane and/or between the bicycle lane and the vehicle parking lane. They are typically located along streets that require a higher level of separation to improve the comfort of bicycling. Separated bike lanes, also known as cycle tracks, are bicycle facilities that are separated from motor vehicle traffic by a buffer and a physical barrier, such as planters, flexible posts, parked cars, or a mountable curb. One-way separated bike lanes are typically found on each side of the street, like a standard bike lane, while a two-way separated bike lanes are typically found on one side of the street.

On-street Bike Lanes

Buffered Bike Lanes

Enhanced Crossings

Enhanced bicycle crossing facilities enable cyclists to safely cross streets, railroad tracks, and other transportation facilities. Planning for appropriate bicycle crossings requires the community to balance vehicular mobility needs with providing crossing locations that the desired routes of cyclists. Enhanced bicycle crossings include:

- Bike Boxes – designated space at an intersection that allows cyclists to wait in front of motor vehicles while waiting to turn or continue through the intersection.
- Two-Stage Left-turn Boxes – designated space at a signalized intersection outside of the travel lane that provides cyclists with a place to wait while making a two-stage left-turn.
- Pavement marking through intersections – pavement markings that extend and bike lane through an intersection.
- Bike Only Signals – A traffic signal that is dedicated for cyclists
- Bicycle Detection – Vehicle detection for bicycles

Additional information on the enhanced bicycle crossing treatments is provided in Attachment "A".

Wayfinding Signs

Wayfinding signs are signs located along roadways or at intersections that direct bicyclists towards destinations in the area and/or to define a bicycle route. They typically include distances and average walk/cycle times. Wayfinding signs are generally used on primary bicycle routes and multi-use paths.

Potential Improvements

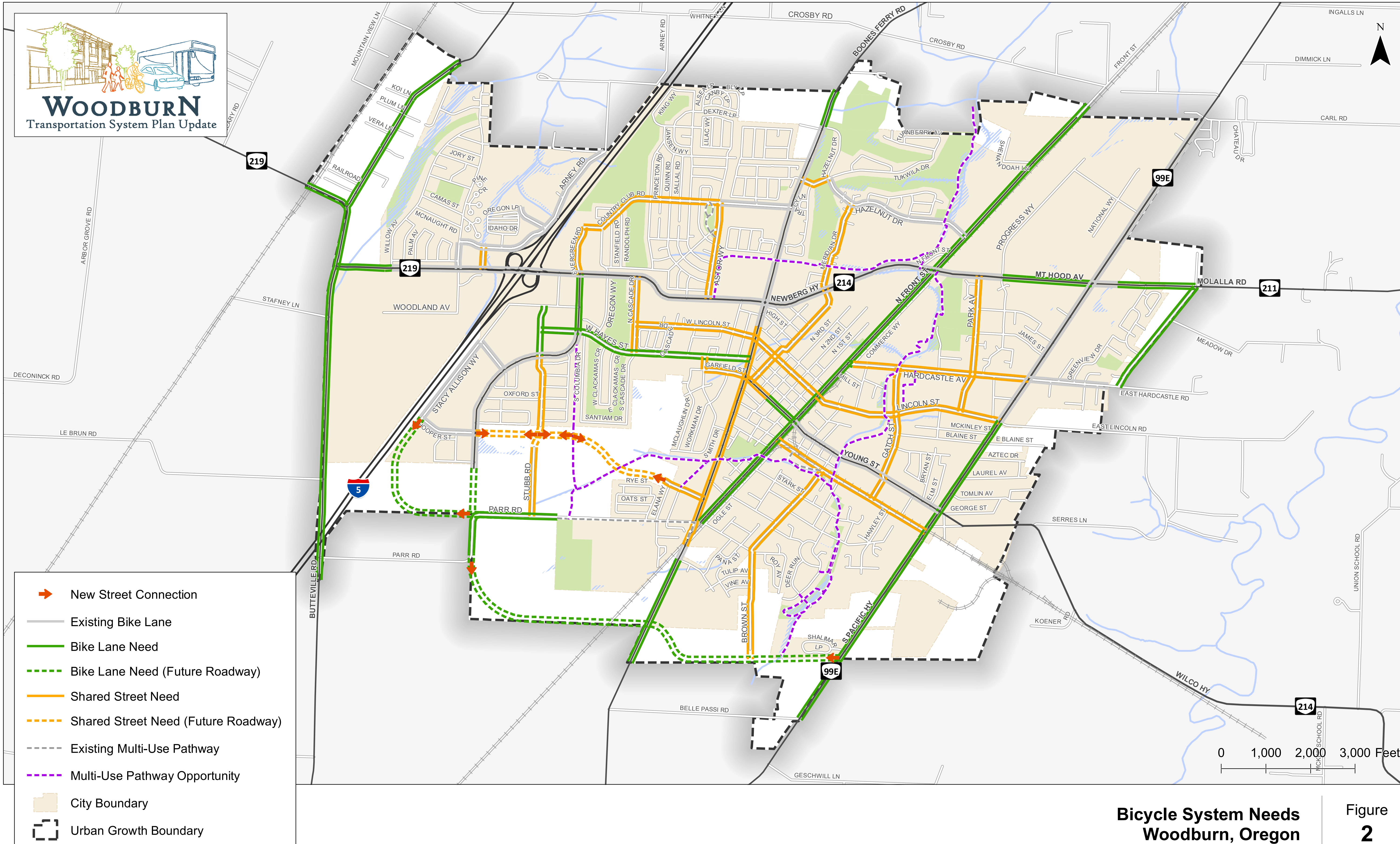
The following improvements have been organized by streets segment, intersection, and off-street improvements. Where there are multiple improvements, the improvement shown in **bold text** was identified as the preferred improvement based on an evaluation of environmental, engineering, land use "fatal flaws" and anticipated funding capacity as well as discussions with the project team, advisory committees, and the general public. Figure 2 illustrates the bicycle system needs discussed below.

Street Segment Improvements

The following street segment improvements have been organized by functional classification.

Major Arterials

Major arterials provide bicycle connectivity between urban centers and regions within the Woodburn UGB. The following provides a summary of the bicycle improvements along major arterial streets.



Bicycle System Needs
Woodburn, Oregon

Figure 2

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

OR 219/OR 214

OR 219/OR 214 currently has a varying cross-section from Butteville Road to OR 99E, with existing bike lanes provided from Willow Avenue to Progress Way. Where there are existing bike lanes on OR 219/OR 214, the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. For these segments, this is primarily due to the relatively high travel speeds and narrow bike lanes along the roadway. On the segments without bike lanes, the BLTS analysis indicates that the roadway is also currently NOT suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- OR 219 from Butteville Road to Willow Avenue
  - **Widen roadway and install bike lanes on both sides of the roadway**
  - Widen roadway and install buffered bike lanes on both sides of the roadway
- OR 219/OR 214 from Willow Avenue to Progress Way
  - Widen roadway and <u>widen</u> bike lanes on both sides of the roadway
  - Widen roadway and install buffered bike lanes on both sides of the roadway
- OR 214 from Progress Way to OR 99E
  - **Widen roadway and install bike lanes on both sides of the roadway**
  - Widen roadway and install buffered bike lanes on both sides of the roadway

OR 99E

OR 99E currently has a varying cross-section, with existing bike lanes provided from the northern UGB to Lincoln Street and the five-lane roadway transitioning to two lanes south of the City Boundary. Where there are existing bike lanes on OR 99E, the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. For these segments, this is primarily due to the relatively high travel speeds and narrow bike lanes along the roadway. On the segments without bike lanes, the BLTS analysis indicates that the roadway is also currently NOT suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- OR 99E from northern UGB to Lincoln Street
  - Widen roadway and <u>widen</u> bike lanes on both sides of the roadway
  - Widen roadway and install buffered bike lanes on both sides of the roadway
- OR 99E from Lincoln Street to southern City Boundary
  - **Widen roadway and install bike lanes on both sides of the roadway**
  - Widen roadway and install buffered bike lanes on both sides of the roadway

- OR 99E from southern City Boundary to southern UGB
  - Widen roadway and install bike lanes on both sides of the roadway
  - **Widen roadway and install buffered bike lanes on both sides of the roadway**

OR 214, Facing West

OR 99E, Facing North

Minor Arterials

Minor arterials support bicycle access and circulation within Woodburn, particularly those that are served by local transit service. The following provides a summary of the bicycle improvements along minor arterial streets.

OR 219 from Western UGB to Butteville Road

OR 219 currently does not have bicycle facilities, and the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- **Widen roadway and install bike lanes on both sides of the roadway**
- Widen roadway and install buffered bike lanes on both sides of the roadway

Butteville Road/OR 219 from Northern UGB to Southern UGB

The segment of Butteville Road/OR 219 from northern UGB to southern UGB currently does not have bicycle facilities, and the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- **Widen roadway and install bike lanes on both sides of the roadway**
- Widen roadway and install buffered bike lanes on both sides of the roadway

Evergreen Road from OR 214 to Hayes Street

The segment of Evergreen Road from OR 214 to Hayes Street does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low travel speeds along the roadway. Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing bike lanes. Therefore, the following improvements are being considered along the roadway:

- Reduce the travel lane width and install bike lanes on both sides of the roadway
- **Widen roadway and install bike lanes on both sides of the roadway**

Boones Ferry Road/Settlemier Avenue

Boones Ferry Road/Settlemier Avenue currently has a varying cross-section, with existing bike lanes provided from Hazelnut Drive to Harrison Street. Where there are existing bike lanes along the roadway, the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. For these segments, this is primarily due to the relatively high travel speeds and narrow bike lanes. On the segments without bike lanes and with posted speeds greater than 25 MPH, the BLTS analysis indicates that the roadway is also currently NOT suitable for most cyclists. On the segments without bike lanes and with posted speeds of 25 MPH, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- Boones Ferry Road from northern UGB to Hazelnut Drive
  - Perform an engineering study to consider reduction of the posted speed limit
  - Install shared lane pavement marking and signs
  - **Widen roadway and install bike lanes on both sides of the roadway**
  - Widen roadway and install buffered bike lanes on both sides of the roadway
- Boones Ferry Road/Settlemier Avenue from Hazelnut Drive to Harrison Street
  - Perform an engineering study to consider reduction of the posted speed limit
  - Reduce the travel lane width and widen bike lanes on both sides of the roadway
  - Widen roadway and widen bike lanes on both sides of the roadway
  - Widen roadway and install buffered bike lanes on both sides of the roadway
- Settlemier Avenue from Harrison Street to railroad tracks
  - **Install shared lane pavement marking and signs**

- Boones Ferry Road from Dahlia Street to southern UGB
    - Perform an engineering study to consider reduction of the posted speed limit
    - Reduce the travel lane width and install bike lanes on both sides of the roadway
    - **Widen roadway and install bike lanes on both sides of the roadway**
    - Widen roadway and install buffered bike lanes on both sides of the roadway

Front Street

Front Street does not have bicycle facilities. The BLTS analysis indicates that the roadway alternatives between being suitable and NOT being suitable for most cyclists, based on the posted speed limit. Therefore, the following improvements are being considered along the roadway:

- Perform an engineering study to consider reduction of the posted speed limit
- Reduce the travel lane width and install bike lanes on both sides of the roadway
- **Widen roadway and install bike lanes on both sides of the roadway**
- Widen roadway and install buffered bike lanes on both sides of the roadway

Garfield Street

Garfield Street currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Therefore, the following improvements are being considered along the roadway:

- Garfield Street from 3rd Street to Front Street
    - **Widen roadway and install bike lanes on both sides of the roadway**
- Garfield Street from Smith Drive to 3rd Street
    - **Install shared lane pavement marking and signs**

Young Street

Young Street currently has bike lanes on both sides of the roadway; however, the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. This is primarily due to the relatively high travel speeds and narrow bike lanes along the roadway. Therefore, the following improvements are being considered along the roadway:

- **Perform an engineering study to consider reduction of the posted speed limit**
- Widen roadway and widen bike lanes on both sides of the roadway
- Widen roadway and install buffered bike lanes on both sides of the roadway

OR 211

OR 211 (east of OR 99E) currently does not have bicycle facilities, and the BLTS analysis indicates that the roadway is currently NOT suitable for most cyclists. Therefore, the following improvements are being considered along the roadway:

- Perform an engineering study to consider reduction of the posted speed limit
- Reduce the travel lane width and install bike lanes on both sides of the roadway
- **Widen roadway and install bike lanes on both sides of the roadway**
- Widen roadway and install buffered bike lanes on both sides of the roadway

Service Collectors

Service collectors serve an important function for bicycle access and circulation within Woodburn and may provide direct access to essential destinations, such as schools, parks, churches, and commercial areas. The following provides a summary of the bicycle improvements along service collector streets.

Arney Road from Robin Avenue to OR 219

The segment of Arney Road from Robin Avenue to OR 219 currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Therefore, the following improvements are being considered along the roadway:

- **Install shared lane pavement marking and signs**

Stacy Allison Way from Evergreen Road to Center Street

The segment of Stacy Allison Way from Evergreen Road to Center Street currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing bike lanes. Therefore, the following improvements are being considered along the roadway:

- Reduce the travel lane width and install bike lanes on both sides of the roadway
- Widen roadway and install bike lanes on both sides of the roadway
- **Enhance the parallel route of Harvard Drive from Stacy Allison Way to Evergreen Road. Install buffered bike lanes on both sides of the roadway**

Hayes Street

Hayes Street does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway.

Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing bike lanes. Therefore, the following improvements are being considered along the roadway:

- Hayes Street from Harvard Drive to Cascade Drive
    - **Install bike lanes on both sides of the roadway**
- Hayes Street from Cascade Drive to Settlemier Avenue
    - Reduce the travel lane width and install bike lanes on both sides of the roadway
    - **Widen roadway and install bike lanes on both sides of the roadway**

Parr Road from Western UGB to Western City Boundary

The segment of Parr Road from western UGB to western City Boundary currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing/planned bike lanes and multi-use paths. Therefore, the following improvements are being considered along the roadway:

- Reduce the travel lane width and install bike lanes on both sides of the roadway
- **Widen roadway and install bike lanes on both sides of the roadway**

Lincoln Street

Lincoln Street currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Therefore, the following improvements are being considered along the roadway:

- **Install shared lane pavement marking and signs**

Cleveland Street

Cleveland Street currently does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Therefore, the following improvements are being considered along the roadway:

- **Install shared lane pavement marking and signs**

Hardcastle Avenue

Hardcastle Avenue does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing bike lanes. Therefore, the following improvements are being considered along the roadway:

- **Install shared lane pavement marking and signs**
- Widen roadway and install bike lanes on both sides of the roadway

Brown Street

Brown Street does not have bicycle facilities; however, the BLTS analysis indicates that the roadway is currently suitable for most cyclists. This is primarily due to the relatively low speeds along the roadway. Although the segment is adequate based on the BLTS analysis, it is a gap in the bike network of existing/planned bike lanes. Therefore, the following improvements are being considered along the roadway:

- **Install shared lane pavement marking and signs**
- Widen roadway and install bike lanes on both sides of the roadway

Cooley Road

Cooley Road does not have bicycle facilities. The BLTS analysis indicates that the roadway is NOT suitable for most cyclists, primarily due to the posted speed limit. Therefore, the following improvements are being considered along the roadway:

- Cooley Road from OR 211 to Aubrey Way
    - **Widen roadway and install bike lanes on both sides of the roadway**
    - Perform an engineering study to consider reduction of the posted speed limit
- Cooley Road from Aubrey Way to Hardcastle Avenue
    - **Install bike lane striping on both sides of the roadway**
    - Perform an engineering study to consider reduction of the posted speed limit

Stacy Allison Way, Facing South

Hardcastle Avenue, Facing East

Access Streets

Access streets also serve an important function for bicycle access and circulation within Woodburn and may provide direct access to essential destinations. The following provides a summary of the bicycle improvements along access streets. The types of treatments considered along these roadways include shared pavement markings and signs and wayfinding signs to essential destinations.

- Stubb Road
- Astor Way
- Tukwila Drive from Boones Ferry Road to Hazelnut Drive
- 5th Street
- Gatch Street
- Park Avenue

Local Streets

Local streets play an important role in providing bicycle connectivity within the city and providing direct access to adjacent land uses. The following local streets have been identified as playing a critical role in providing connectivity to essential destinations. The types of treatments considered along these roadways include shared pavement markings and signs and wayfinding signs to essential destinations.

- Evergreen Road from Country Club Court to OR 214
- Country Club Road from Evergreen Road to Astor Way
- Cascade Drive
- Smith Drive from Hayes Street to Garfield Street
- Meridian Drive

PEDESTRIAN SYSTEM AND CONNECTIVITY

Pedestrian facilities are the elements of the transportation system that enable people to walk safely and efficiently between neighborhoods, retail centers, employment areas, and transit stops. These include facilities for pedestrian movement along key roadways (e.g., sidewalks, multi-use paths, and trails) and for safe roadway crossings (e.g., crosswalks, crossing beacons, pedestrian refuge islands). Each facility plays an important role in developing a comprehensive pedestrian network.

Solutions Considered

This section summarizes the solutions considered for implementation within the City of Woodburn to address existing gaps and deficiencies in the pedestrian system and future needs.

Sidewalks

Sidewalks are the fundamental building blocks of the pedestrian system. They enable people to walk comfortably, conveniently, and safely from place to place. They also provide an important means of mobility for people with disabilities, families with strollers, and others who may not be able to travel on an unimproved roadside surface. Sidewalks are usually 6 to 8-feet wide and constructed from concrete. They are also frequently separated from the roadway by a curb, landscaping, and/or on-street parking. Sidewalks are widely used in urban and suburban settings. Ideally, sidewalks could be provided along both sides of the roadway; however, some areas with physical or right-of-way constraints may require that sidewalk be located on only one side. Sidewalk solutions include:

- Fill in the gaps
- Install sidewalks on one-side of the roadway
- Install sidewalks on both sides of the roadway
- Re-construct existing sidewalks with appropriate width and buffer
- Improve existing sidewalks with appropriate lighting

Sidewalk Improvements

Sidewalk Improvements

Accessways

Non-vehicular connections between cul-de-sacs and adjacent roadways can significantly reduce travel distances for pedestrians, thereby encouraging more people to walk. Woodburn has a few existing accessways that create connections between neighborhoods and pedestrian and bicycle routes. Potential new connections could use existing City right-of-way between cul-de-sacs or unconnected roadways to provide a paved path, unpaved path, or trail for non-motorized use.

Multi-use Paths and Trails

Multi-use paths are paved, bi-directional trails that can serve both pedestrians and bicyclists. Multi-use paths and trails can be constructed adjacent to roadways where the topography, right-of-way, or other issues don't allow for the construction of sidewalks and bike facilities. A minimum width of 10 feet is recommended for low-pedestrian/bicycle-traffic contexts; 12 to 20 feet should be considered in areas with moderate to high levels of bicycle and pedestrian traffic. Multi-use paths can be used to create longer-distance links within and between communities. They play an integral role in recreation, commuting, and accessibility due to their appeal to users of all ages and skill levels.

Accessways

Multi-use Paths and Trails

Enhanced Pedestrian Crossings

Pedestrian crossing facilities enable pedestrians to safely cross streets, railroad tracks, and other transportation facilities. Planning for appropriate pedestrian crossings requires the community to balance vehicular mobility needs with providing crossing locations for desired routes of walkers. Enhanced pedestrian crossing treatments include:

- Median refuge islands
- High visibility pavement markings and signs
- Rapid rectangular flashing beacons (RRFB)
- Pedestrian Hybrid Beacons
- Curb extensions
- Pedestrian signals
  - Pedestrian countdown heads
  - Leading Pedestrian interval

Many of the treatments listed above can be applied together at one crossing location to further alert drivers of the presence of pedestrians in the roadway. *See Attachment "A" for a detailed description of enhanced pedestrian crossing treatments*.

Enhanced Pedestrian Crossing with RRFBs

Enhanced Pedestrian Crossing with Pedestrian Signal

Potential Improvements

The following improvements have been organized by streets segment, intersection, multi-use pathways, and off-street improvements. Where there are multiple improvements, the improvements shown in **bold text** were identified as the preferred improvement based on an evaluation of environmental, engineering, land use “fatal flaws” and anticipated funding capacity as well as discussions with the project team, advisory committees, and the general public. Figure 3 illustrates the pedestrian system needs discussed below.

Street Segment Improvements

The following street segment improvements have been organized by functional classification.

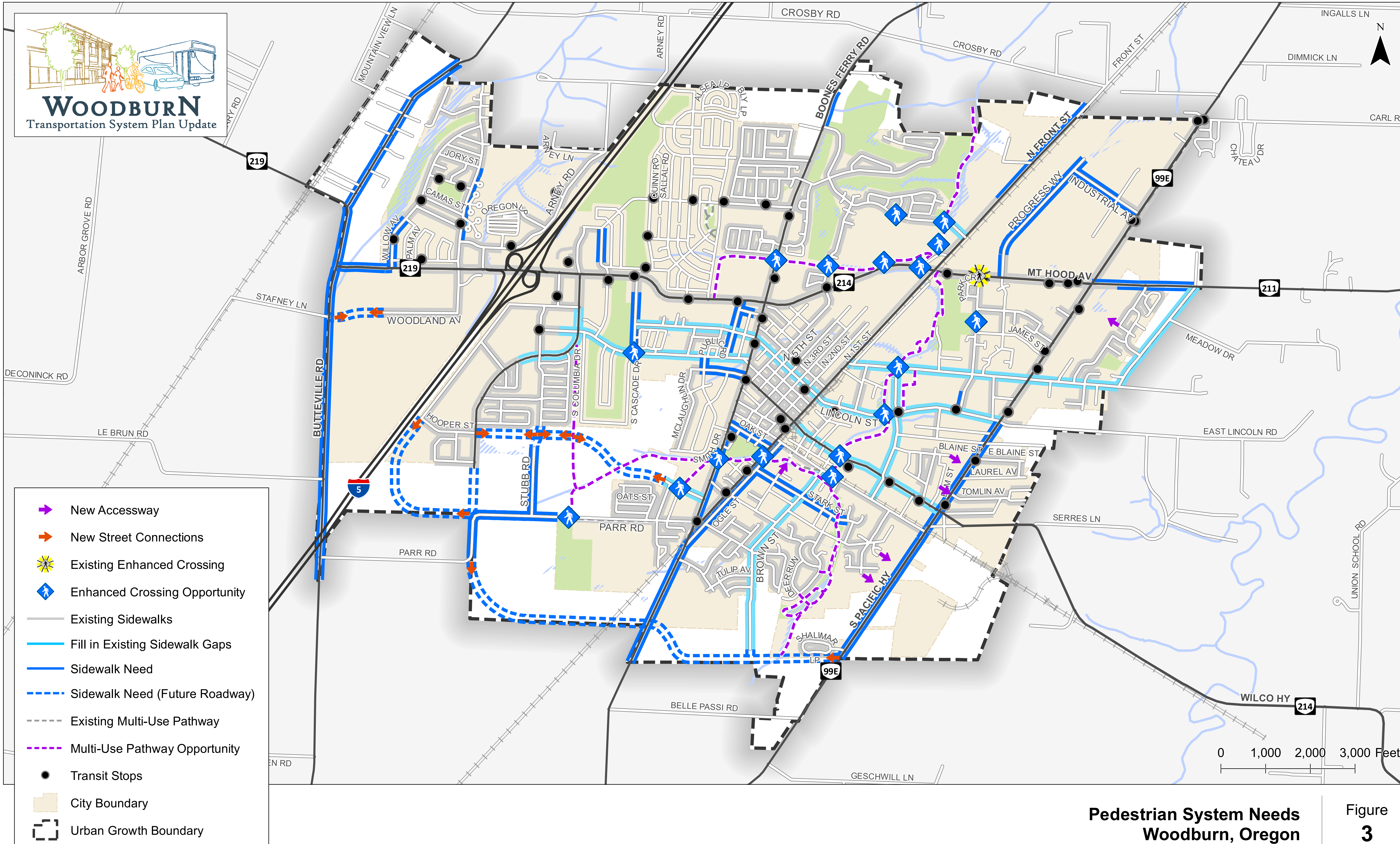
Major Arterials

Major arterials provide pedestrian connectivity between urban centers and regions within the Woodburn UGB. The following provides a summary of the pedestrian improvements along major arterial streets.

OR 219 from Butteville Road to Willow Avenue

The segment of OR 219 from Butteville Road to Willow Avenue currently does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**
- Install new landscape strips and sidewalks of appropriate width along both sides of the roadway



Pedestrian System Needs
Woodburn, Oregon

Figure
3

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

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OR 99E

OR 99E currently has continuous sidewalks along both sides of the roadway from northern UGB to Lincoln Street. From Lincoln Street to southern City Boundary, there are several gaps in the sidewalks. South of the southern City Boundary, there are currently no sidewalks. The PLTS analysis indicates that the roadway may not be suitable for all pedestrians along the entirety of the corridor. This is primarily due to sidewalk gaps, poor pavement condition, lack of a buffer, and/or limited street lighting. Therefore, the following improvements are being considered along the roadway:

- OR 99E from northern UGB to Lincoln Street
  - **Evaluate light levels and install street lighting**
- OR 99E from Lincoln Street to southern City Boundary
  - **Remove the existing sidewalks and install new sidewalks of appropriate width along both sides of the roadway**
  - Remove the existing sidewalks and install new landscape strips and sidewalks of appropriate width along both sides of the roadway
- OR 99E from southern City Boundary to southern UGB
  - **Install new sidewalks of appropriate width along both sides of the roadway**
  - Install new landscape strips and sidewalks of appropriate width along both sides of the roadway

Minor Arterials

Minor arterials support pedestrian access and circulation within Woodburn, particularly those that are served by local transit service. The following provides a summary of the pedestrian improvements along arterial streets.

Butteville Road/OR 219 from Northern UGB to Southern UGB

Butteville Road/OR 219 from northern UGB to southern UGB currently does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**
- Install new landscape strips and sidewalks of appropriate width along both sides of the roadway

Evergreen Road

There are several gaps in the sidewalks along Evergreen Road from Stacy Allison Way to Boean Lane. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway from Stacy Allison Way to Boean Lane**

Boones Ferry Road/Settlemier Avenue

Segments of Boones Ferry Road/Settlemier Avenue currently do not have sidewalks. The PLTS analysis indicates that the roadway may not be suitable for all pedestrians along the entirety of the corridor. Therefore, the following improvements are being considered along the roadway:

- Boones Ferry Road from northern UGB to Hazelnut Drive
  - **Install new sidewalks of appropriate width along one side of the roadway**
- Settlemier Avenue from Oak Street to Parr Road
  - **Install new sidewalks of appropriate width along one side of the roadway**
- Boones Ferry Road from Parr Road to southern UGB
  - **Install new sidewalks of appropriate width along both sides of the roadway**

Front Street

Front Street does not have sidewalks from northern UGB to Hazelnut Drive. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along one side of the roadway from northern UGB to Hazelnut Drive**

Young Street

There are several gaps in the sidewalks along Young Street from Front Street to OR 99E. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

OR 211 from OR 99E to Eastern City Boundary/UGB

OR 211 does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**
- Install new landscape strips and sidewalks of appropriate width along both sides of the roadway

Settlemier Avenue, Facing North

Young Street, Facing East

Service Collectors

Service collectors also serve an important function for pedestrian access and circulation within Woodburn and may provide direct access to essential destinations, such as schools, parks, churches, and commercial areas. The following provides a summary of the pedestrian improvements along service collector streets.

Hayes Street

There are several gaps in the sidewalks along Hayes Street from Harvard Drive to Front Street. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Parr Road

Parr Road does not have sidewalks from western UGB to western City Boundary. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**
- Install new landscape strips and sidewalks of appropriate width along both sides of the roadway

Lincoln Street

There are several gaps in the sidewalks along Lincoln Street from Cascade Drive to OR 99E. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Industrial Avenue

Industrial Avenue does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**

Progress Way

Progress Way does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**

Hardcastle Avenue

There are several gaps in the sidewalks along Hardcastle Avenue from Front Street to Cooley Road. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Brown Street

There are several gaps in the sidewalks along Brown Street from Cleveland Street to end of roadway. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Cooley Road

There are several gaps in the sidewalks along Cooley Road from Front Street to OR 99E. The PLTS analysis indicates that the roadway may not be suitable for all pedestrians along the entirety of the corridor. This is primarily due to sidewalk gaps, lack of a buffer, and/or limited street lighting. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**
- Evaluate light levels and install street lighting

Access Streets

Access streets also serve an important function for pedestrian access and circulation within Woodburn and may provide direct access to essential destinations. The following provides a summary of the pedestrian improvements along collector streets.

Woodland Avenue

Woodland Avenue does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along one side of the roadway from Jory Street to Arney Road**

Stubb Road

Stubb Road does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**

Oregon Way

Oregon Way does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**

Hazelnut Drive

There are several gaps in the sidewalks along Hazelnut Drive from Graystone Drive to Front Street. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway from Graystone Drive to Front Street**

Gatch Street

There are several gaps in the sidewalks along Gatch Street from Hardcastle Road to Cleveland Street. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Park Avenue

Park Avenue does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along one side of the roadway**

Gatch Street, Facing North

Hazelnut Drive, Facing East

Local Streets

Local streets provide direct access to essential destinations throughout Woodburn, such as schools, parks, churches, and commercial areas. Typically, continuous pedestrian facilities should be provided along at least one side of each street to ensure adequate access for pedestrians.

Willow Avenue

Willow Avenue does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway from McNaught Road to OR 219
- **Install new sidewalks of appropriate width along both sides of the roadway from McNaught Road to OR 219**

Cascade Drive

Cascade Drive does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along both sides of the roadway**

Leasure Street

Leasure Street does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway
- **Install new sidewalks of appropriate width along both sides of the roadway**

Church Street

Church Street does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway from Leasure Street to Settlemier Avenue
- **Install new sidewalks of appropriate width along both sides of the roadway from Leasure Street to Settlemier Avenue**

Garfield Street

Garfield Street does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway from Smith Drive to Settlemier Avenue
- **Install new sidewalks of appropriate width along both sides of the roadway from Smith Drive to Settlemier Avenue**

Smith Drive

Smith Drive does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway from Hayes Street to Garfield Street
- **Install new sidewalks of appropriate width along both sides of the roadway from Hayes Street to Garfield Street**

Ben Brown Lane

There are several gaps in the sidewalks along Ben Brown Lane. Therefore, the following improvements are being considered along the roadway:

- **Fill in the gaps along both sides of the roadway**

Oak Street

Oak Street does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- **Install new sidewalks of appropriate width along one side of the roadway**

Ogle Street

Ogle Street does not have sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway
- **Install new sidewalks of appropriate width along both sides of the roadway**

Stark Street

Stark Street does not have continuous sidewalks. Therefore, the following improvements are being considered along the roadway:

- Install new sidewalks of appropriate width along one side of the roadway
- **Install new sidewalks of appropriate width along both sides of the roadway**

Pedestrian Crossing Improvements

Front Street/Lincoln Street

There are enhanced pedestrian crossings on the north, south, and west legs of the intersection. The east leg intersects the railroad. Therefore, the following improvement is being considered:

- Construct ADA-compliant ramps and sidewalks on the east leg of the intersection

Front Street/Young Street

There are enhanced pedestrian crossings on the north, south, and west legs of the intersection. The east leg intersects the railroad. Therefore, the following improvement is being considered:

- Construct ADA-compliant ramps and sidewalks on the east leg of the intersection

Cascade Drive/Hayes Street

The Cascade Drive/Hayes Street intersection is an important connection for those traveling between Hayes Street and OR 214. There are no enhanced crossings on Hayes Street at intersection roadways that provide direct access to OR 214. In addition, the Nellie Muir Elementary School is located southeast of the intersection.

- Install an enhanced pedestrian crossing to facilitate movement across Hayes Street

Park Avenue/Legion Park Driveway

Legion Park is one of the largest parks in Woodburn; however, there are not enhanced pedestrian crossing within the vicinity of the site.

- Install an enhanced pedestrian crossing to facilitate movement across Park Avenue

OR 214/N Bulldog Drive

The OR 214/N Bulldog Drive intersection has an existing pedestrian crossing on the east leg of OR 214 that serves the Woodburn High School. As described in the 2017 Woodburn Pedestrian Plan, the crossing is well utilized by students during both the morning and afternoon peak periods correlating to the school day.

- Update the existing crossing to an enhanced pedestrian crossing with a pedestrian hybrid beacon coordinated with the surrounding traffic signals to facilitate pedestrian movements across OR 214 while still allowing vehicular movements along OR 214. This treatment would require approval by the State Traffic-Roadway Engineer.

Hazelnut Drive/Broadmoor Place Accessway

Hazelnut Drive provides an east-west connection of Boones Ferry Road and Front Street north of OR 214. It also serves as the northern boundary to the Woodburn High School. There are no enhanced crossings on Hazelnut Drive.

- Install an enhanced pedestrian crossing to facilitate movement across Hazelnut Drive

OR 99E

OR 99E is an important north-south connection running the length of Woodburn near the eastern edge of the city. It supports commercial uses and provides access to numerous businesses along the corridor as well as providing connectivity to northern and southern industrial uses and downtown Woodburn to the west. Woodburn conducted a study of the OR 99E corridor in 2012 to support the revitalization of the corridor as a business district. Therefore, the following improvements are being considered, all of which would require approval by the State Traffic-Roadway Engineer:

- Install curb extensions on minor street legs of intersections (curb extensions to shorten pedestrian crossing distances parallel to OR 99E, not for crossing of OR 99E) between Arlington Street and Cleveland Street (up to 8 locations). Potential locations include:

  - Alexandria Avenue
  - James Street
  - Williams Street
  - Blaine Street
  - Aztec Drive
  - Laurel Avenue
  - Tomlin Avenue
- Install countdown pedestrian timers and construct ADA enhancements at key signalized intersections along OR 99E

In addition to the 2012 Highway 99E Corridor Plan, the 2017 Woodburn Pedestrian Plan identified the following new crossing locations along OR 99E, envisioned to include raised median refuge islands, sidewalk infill, supplemental street lighting, and potentially RRFB treatments:

- North of Williams Street
- Between NE Laurel Avenue and Tomlin Avenue
- Between Blaine Street and Aztec Drive
- North of Mount Jefferson Avenue
- North of James Street

Multi-use Pathway Improvements

Woodburn prepared a master plan in 2007 that outlines a multi-use path system running along Mill Creek and its northern and western tributaries. In addition to these planned facilities, several other potential multi-use path opportunities have been identified. The following are locations where multi-use path opportunities have been identified:

- Mill Creek Greenway
- Mill Creek Greenway – Northern tributary
- Mill Creek Greenway – Western tributary
- Evergreen Road extension south to planned Mill Creek Greenway
- North-south connection on Hardcastle Avenue and Lincoln Street west of Washington Elementary School
- Extension south of planned Mill Creek Greenway to Belle Passi Road

Off-street Improvements

The following off-street improvements consist of pedestrian accessways and mid-block crossings.

Accessway Connections to OR 99E

As part of the study conducted along OR 99E, the following accessway connections to OR 99E are being considered:

- June Way, may not connect directly as it runs parallel to OR 99E
- Johnson street
- Elm Street, may not connect directly as it runs parallel to OR 99E
- Wilson Street
- Hawley Street, may not connect directly as it runs parallel to OR 99E

A Street Accessway

Right of way between A Street and Cleveland Street has been preserved; however, a new roadway connection may not be feasible. In addition, the planned Mill Creek Greenway will run east-west between the two roadways. Therefore, the following improvement is being considered:

- Install a new accessway that connects A Street north to Cleveland Street and/or Mill Creek Greenway (western tributary).

Mill Creek Greenway Mid-block Crossings

As part of the planned Mill Creek Greenway multi-use path, the following mid-block crossings have been identified:

- Young Street
- Hazelnut Drive
- Bulldog Drive (two crossing locations)
- OR 214 (state highway)
- Hardcastle Avenue
- Lincoln Street
- Cleveland Street (including railroad crossing)
- Ben Brown Lane extension
- Settlemier Avenue
- Parr Road
- Front Street (including railroad crossing)
- Meridian Drive
- Boones Ferry Road

If and when the Mill Creek Greenway multi-use path is constructed, high-visibility enhanced pedestrian crossings should be considered at the above locations where the multi-use path intersects roadways. Depending on the classification and characteristics of the roadway, the enhanced crossing may include a median refuge island, high visibility pavement markings and signs, RRFB's, pedestrian hybrid beacons, curb extensions, and/or pedestrian signals.

A Street Accessway, Facing North

June Way Accessway, Facing West

SAFE ROUTES TO SCHOOL

The access and connectivity needs for a safe routes to school program have been considered above in the bicycle and pedestrian system sections. The schools in Woodburn are listed below with their primary access and connecting streets identified. To see the potential improvements that will benefit each school, review the projects described in the previous sections.

Woodburn High School (1785 N Front Street)

Direct access and local connectivity are provided by OR 214, Front Street, Hazelnut Drive, and the planned Mill Creek Greenway multi-use path and its northern tributary extension.

Washington Elementary School (777 E Lincoln Street)

Direct access and local connectivity are provided by Hardcastle Avenue, Lincoln Street, Gatch Street, Park Avenue, and potential multi-use pathway opportunities to the west.

Nellie Muir Elementary School (1800 W Hayes Street)

Direct access and local connectivity are provided by Hayes Street, Cascade Drive, Leasure Street, Garfield Street, Smith Drive, and Settlemier Avenue. A pedestrian crossing opportunity on Hayes was identified to benefit this school and the surrounding area.

Heritage Elementary School and Valor Middle School (440/450 Parr Road)

Direct access and local connectivity are provided by Parr road, the planned Mill Creek Greenway western tributary extension, Boones Ferry Road/Settlenier Avenue, and Front Street.

Lincoln Elementary School and French Prairie Middle School (1041/1025 N Boones Ferry Road)

Direct access and local connectivity are provided by Boones Ferry Road/Settlemier Avenue, OR 214, and the planned Mill Creek Greenway northern tributary extension.

St. Luke's School (529 Harrison Street)

Direct access and local connectivity are provided by Harrison Street, 5th Street, and Front Street.

TRANSIT SYSTEM

Public transit can provide important connections to destinations for people that do not drive or bike and can provide an additional option for all transportation system users for certain trips. Public transit links to walking, bicycling, or driving trips: users can walk to and from transit stops and their homes, shopping, or work places; people can drive to park-and-ride locations to access a bus; or people can bring their bikes on transit vehicles and bicycle from a transit stop to their final destination.

Providing transit service in smaller cities is generally led by a local or regional transit agency and is dependent on having the land use and densities that can support service. The city can plan for transit-supportive land use patterns and support future transit viability by designing and building streets that will comfortably accommodate transit stops and include the right-of-way that could allow for transit stops to be located as close as possible to important destinations. At a minimum, a transit stop should be well-signed and have a comfortable space to wait. Benches and shelter from the weather can improve user comfort and including bike parking near bus stops allows people the option to leave their bike at one trip-end instead of bringing it on the bus.

Service Coverage

Service Coverage is a measure of the area within walking distance of transit service. Areas must be within 1/4-mile of a bus stop (or service route if there are no designated stops) or 1/2 mile of a transit station to be considered an area served by transit. As with the other availability measures, service coverage does not provide a complete picture of transit availability by itself, but when combined with frequency and hours of service, it helps identify the number of opportunities people have to access transit from different locations. Service coverage evaluates the percentage of transit-supportive areas—areas that would typically produce the majority of a system's ridership—that are served by transit.

To qualify as a transit-supportive area (TSA) one of the following thresholds must be met:

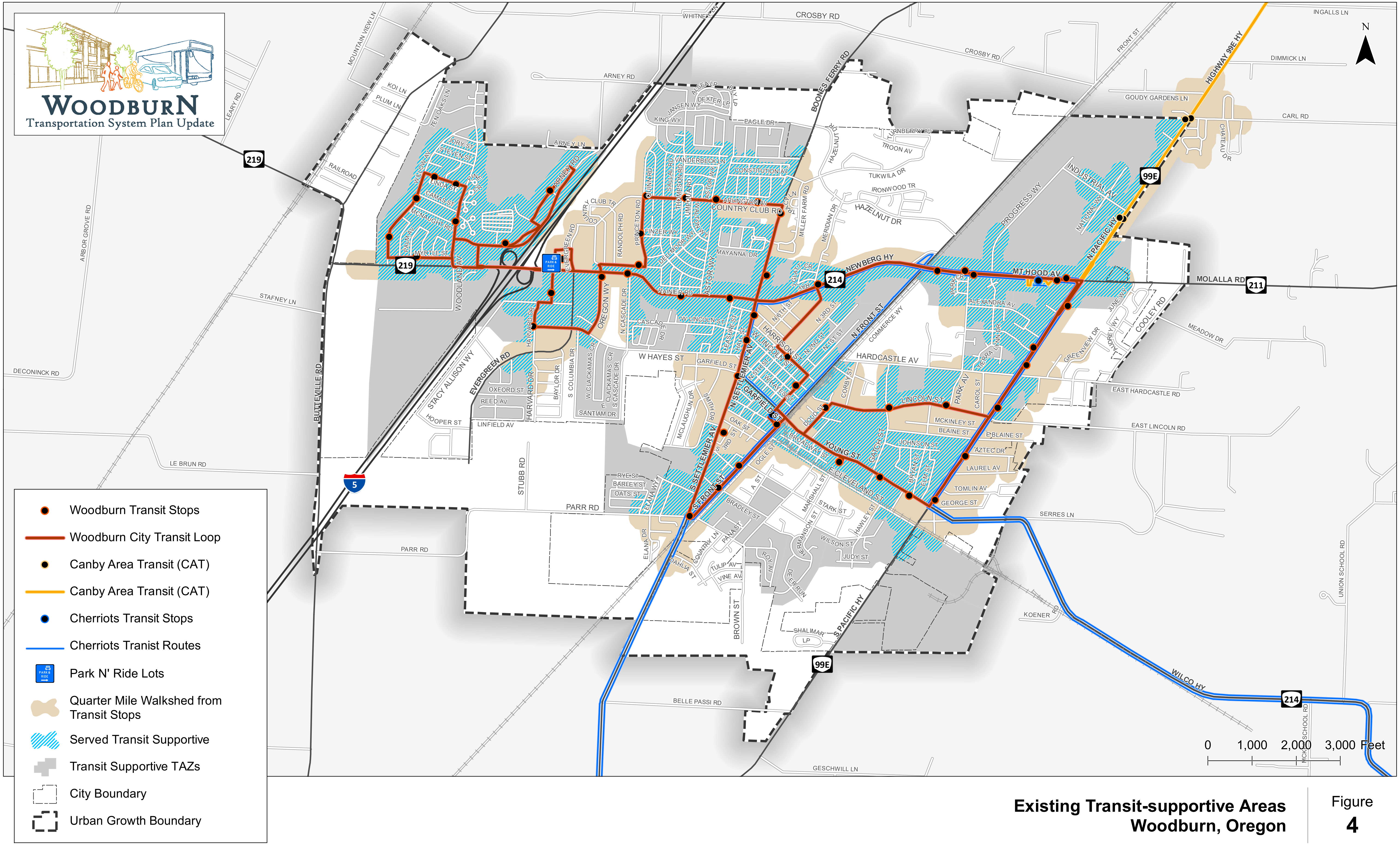
- Minimum population density of 3 households/gross acre; or
- Minimum job density of 4 employees/gross acre.

Service coverage is an all-or-nothing issue for transit riders—either service is available for a particular trip or it is not. As a result, there is no direct correlation between service coverage and what a passenger would experience for a given trip. Rather, service coverage reflects the number of potential trip origins and destinations available to potential passengers.

Figure 4 displays the existing transit-supportive areas and service coverage in Woodburn. Areas defined as transit supportive that have service are shown in blue. Areas defined as transit supportive but lacking service are shown in gray. Areas that have transit service, but do not qualify as a TSA, are shown in tan. A majority of the areas shown in gray would require additional transit routes or the development of new pathway connections (increasing the area that is within ¼ mile walking distance) to existing transit routes to be served.

Future Transit Service Coverage

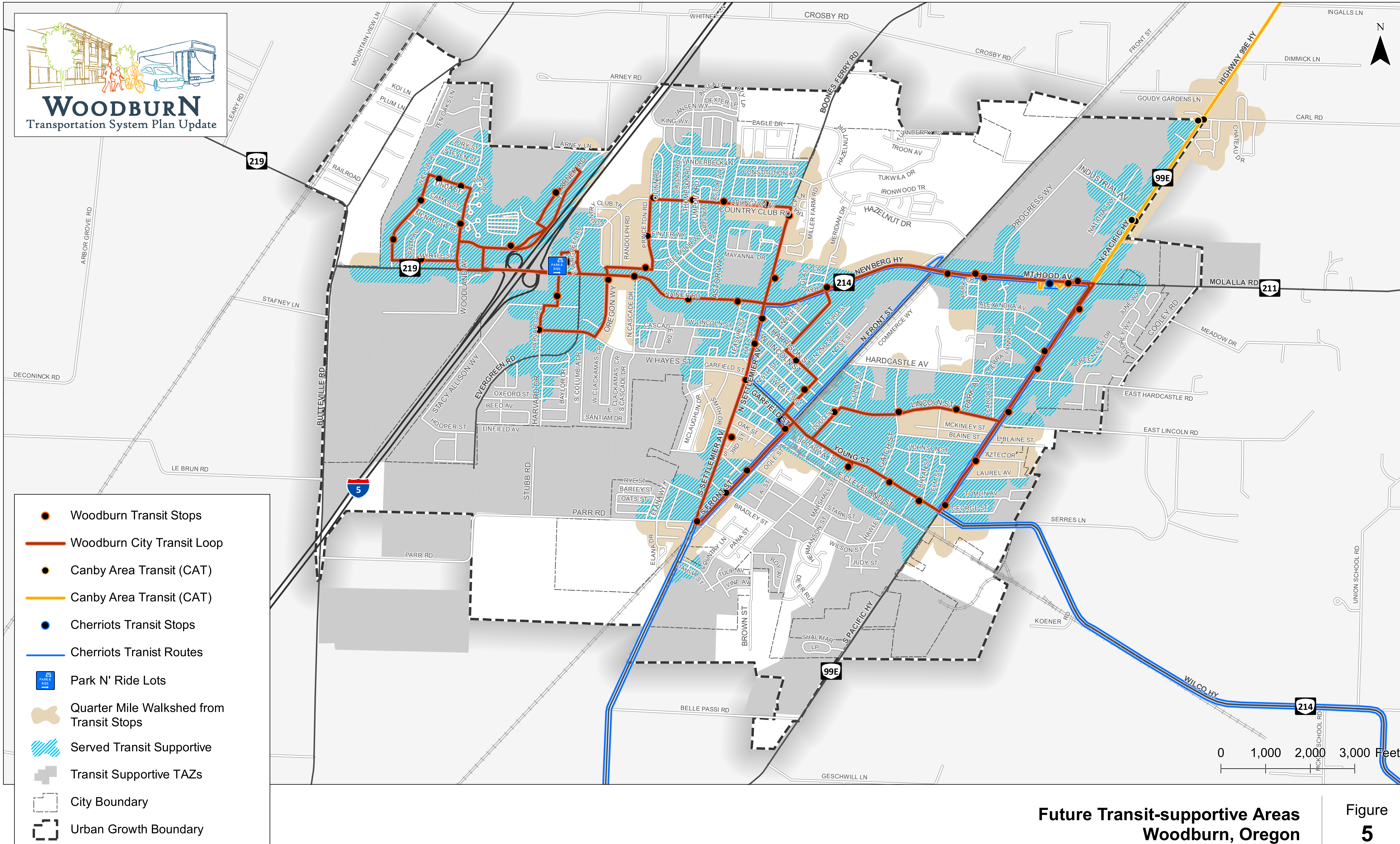
The future transit level-of-service analysis assumes that existing service frequencies, service hours, and service coverage is the same in the future. The only difference is the population and employment growth assumptions included in the regional traffic model for 2040 and the resulting transit supportive areas. Figure 5 displays the future transit-supportive areas and service coverage based on existing transit service. As shown, the number of transit supportive areas is expected to increase. While many of these areas are expected to be served by existing transit services, the remaining areas will require additional service routes or connections to existing routes in order to be served.



Existing Transit-supportive Areas
Woodburn, Oregon

Figure 4

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation



Future Transit-supportive Areas
Woodburn, Oregon

Figure
5

Solutions Considered

This section summarizes the solutions considered for implementation within the City of Woodburn to address existing gaps and deficiencies in the transit system and future needs.

New or Re-routed Fixed-Route Service

Fixed-route service enhancement can include:

- Increase the service frequency by reducing headways or time between arrivals
- Increase hours of service by providing service earlier in the morning and/or later in the evening
- Increase service coverage by re-routing existing service or implementing new service

Stop Enhancements

Transit stops are designated locations where residents can access local transit service. Transit stops are normally located at major intersections. The types of amenities provided at each transit stop (i.e. pole, bench, shelter, ridership information, trash receptacles) tend to reflect the level of usage. Potential stop enhancements include:

- Pole and bus stop sign – All bus stops require a pole and bus stop sign to identify the bus stop location.
- Bus stop shelters
- Seating
- Trash cans
- Lighting

Park-and-Ride Facilities

Park-and-ride facilities provide parking for people who wish to transfer from their personal vehicle to public transportation or carpools/vanpools. Park-and-rides are frequently located near major intersections, at commercial centers, or on express and commuter bus routes. It is Oregon state policy to encourage the development and use of park-and-ride facilities at appropriate urban and rural locations adjacent to or within the highway right-of-way. Park-and-ride facilities can provide an efficient method to provide transit service to low density areas, connecting people to jobs, and providing an alternate mode to complete long-distance commutes.

Park-and-ride facilities may be either shared-use, such as at a school or shopping center, or exclusive-use. Shared-use facilities are generally designated and maintained through agreements reached between the local public transit agency or rideshare program operator and the property owner. Shared lots can save the expense of building a new parking lot, increase the utilization of existing spaces, and avoid utilization of developable land for surface parking. In the case of shopping centers, the presence of a shared-use park-and-ride has frequently been shown to be mutually beneficial, as park-and-riders tend to patronize the businesses in the center.

Potential Improvements

New, Enhanced, or Re-routed Service

The following opportunities are being considered for new, enhanced, or re-routed service to address the need for additional service coverage within the surrounding area:

- Woodburn fixed route enhancement opportunities
    - Increase frequency to 30 minutes
    - Provide Saturday service
    - Provide Sunday service
    - Convert existing route to two-way operations
    - Separate route into two routes with one-way operations
    - Separate route into two routes with two-way operations
    - Add a new fixed route in City center (30-minute frequency to major local destinations)
    - Restructure the “long” loop, expanded to serve the neighborhood in southeast Woodburn
- New or re-routed service to provide service to
    - Parr Road corridor via an extension of Evergreen Road
    - Crosby Road corridor
    - Butteville Road corridor
    - Employment center southwest of I-5/OR 214 interchange
    - Woodburn Industrial Park along the Progress Way and Industrial Avenue corridors
    - Gateway subarea Avenue
- New service
    - Provide peak-only employer shuttles
    - Establish a free shuttle between the Woodburn Company Stores and Downtown Woodburn, hourly during peak shopping and entertainment hours

- Intercity service opportunities
    - Coordinate transfers between the different agency services in Woodburn
    - Provide a stop in Woodburn for SMART Route 1X
    - Provide service to downtown Salem (and east to State offices) - incorporate a stop at the planned Park & Ride for the SMART express route between Wilsonville and Salem
    - Provide service to Portland - connect to TriMet via the Tualatin Park-and-Ride, directly into downtown Portland, to the Westside Express Service (southern terminus at Wilsonville SMART Central), or the MAX Orange Line light rail service
    - Provide a new demand-responsive service to Hubbard one day per week
    - Provide service to WES station in Wilsonville

Stop Enhancements

Woodburn City Transit should evaluate signage at all bus stops to verify that they are visible and accessible. Static bus route information should be provided at each bus stop. In addition, the following bus stops are being considered for shelter installation due to adequate ridership volumes:

- Bus stop ID: 755016, Walmart
- Bus stop ID: 20419, Garfield Street

Other Transit Improvements

- Investigate transferring the paratransit system to a local social service agency

INTERMODAL ROUTE CONNECTIVITY

The majority of the needs for intermodal route connectivity and access have been considered above in the bicycle, pedestrian, transit, and auto-related system sections. By providing a connected system by each mode and identifying crossing and multi-use pathway opportunities, the overall transportation system of Woodburn becomes further connected and has overlap between modes. Improved transit access and service will allow users from different areas of the city to more easily reach transit, while a connected bicycle and pedestrian network will support their first-mile, last-mile needs.

Potential Improvements

In addition to the improvements identified in earlier sections, the following improvements are being considered to enhance intermodal route connectivity in Woodburn:

- Provide wayfinding to bike routes, multi-use paths, trails (as constructed), parks, schools, and other essential destinations
- Provide bike racks at bus stops

RAIL

Union Pacific Railroad operates a Class I rail line through Woodburn. These tracks parallel the east side of Front Street. A total of five at-grade crossings and one grade separated crossing exist along the rail line. Willamette Valley Railway operates a Shortline Railroad track that parallels the north side of Cleveland Street in the south side of town. A total of five public at-grade crossings exist along this rail line. In addition to these crossings, the rail line serves multiple local businesses along the corridor. Currently, there are no passenger rail terminals in Woodburn.

Potential Improvements

The following improvements are being considered for the rail system in Woodburn:

- Investigate the opportunity to remove private grade railroad crossings by providing alternative access to parcels as development and redevelopment occurs
- Establish a downtown Amtrak passenger rail stop along Front Street in downtown Woodburn, potentially as a public-private partnership at the "Y" property adjacent to Locomotive Park
- Explore a passenger rail stop if commuter rail is extended between Wilsonville and Beaverton down to Salem

FREIGHT

Freight Mobility and Reliability Solutions

No specific solutions have been identified to address freight mobility and reliability within the City, with the exception of the TSMO solutions identified above for truck signal priority and the capacity-based solutions identified below at several key intersections along OR 219/OR 214 and OR 99E.

Freight Mobility and Reliability Improvements

No specific improvements have been identified to address freight mobility and reliability within the City, with the exception of the TSMO improvements identified above for truck signal priority and the capacity-based improvements identified below at several key intersections along OR 219/OR 214 and OR 99E.

SAFETY

Traffic safety plays an important role in determining the most appropriate solutions for a given gap or deficiency, particularly in areas where real or perceived safety risks may prevent people from using more active travel modes, such as walking, biking, and taking transit. The real or perceived safety risks may reflect the crash history of an area or the physical and/or operational characteristics of the roadways (narrow travel lanes, winding curves, steep grades, high traffic volumes, high travel speeds, lots of heavy vehicles, etc.). Several methodologies have been developed to analyze and identify solutions for addressing traffic safety within an area. Many of which are documented in the Highway Safety Manual (HSM) as well as several other resources developed by ODOT for addressing safety along roadway segments, at intersections, and for pedestrian and bicyclists.

Solutions Considered

This section summarizes the solutions considered for implementation within the City of Woodburn to address real or perceived safety issues along roadway segments, at intersections, and/or for pedestrians and bicyclists. Note: many of the solutions overlap, which illustrates how some solutions address multiple safety issues.

Roadway Segments

There are a variety of potential safety solutions that can be applied within Woodburn to address systemic crashes that occur along roadway segments, such as sideswipe and run off the road crashes as well as general speeding and other driver behaviors.

- Enhanced signs and pavement markings for curves (with and without flashing beacons)
- Rumble strips (e.g. centerline, shoulder line, and edge line)
- Tree/vegetation removal
- Traffic calming
- Enhanced enforcement
- Road diet

Intersections

There are a variety of potential safety solutions that can be applied within Woodburn to address systemic crashes that occur at intersections, such as angle crashes, turning movement crashes, rear-end crashes, and crashes that involve other travel modes. The solutions include:

- Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)
- Signal improvements (e.g. signal timing, signal phasing)
- Left-turn phasing (e.g. permitted, protected, permitted-protected)
- Enhanced enforcement
- Pedestrian and bicycle improvements (see below)
- Intersection lighting
- Traffic calming

Pedestrian and Bicycle

There are a variety of potential safety solutions that can be applied within Woodburn to address pedestrian and bicycle safety. The following provides a summary of the solutions by traffic control.

Signalized intersections

Pedestrian Safety Solutions

- Street lighting
- Right-turn channelization
- Countdown pedestrian heads
- Leading pedestrian interval
- Left-turn phasing
- Vehicle turning movement restrictions

Bicycle Safety Solutions

- Street lighting
- Bicycle signal
- Bicycle detection
- Pavement markings
- Right-turn channelization
- Leading bicycle interval
- Left-turn phasing
- Vehicle turning movement restrictions

Unsignalized intersections

Pedestrian Safety Solutions

- Street lighting
- Enhanced crossing treatments
- Reduced curb radii
- Pedestrian refuge island or median
- Speed reduction treatments
- Vehicle turning movement restrictions

Bicycle Safety Solutions

- Street lighting
- Enhanced crossing treatments
- Reduced curb radii
- Skip Striping
- Supplemental signs and markings
- Bicycle boulevards
- Longitudinal bike stencil
- Speed reduction treatments
- Vehicle turning movement restrictions
- Strip bike lanes

Roadway segment – No traffic control

Pedestrian Safety Solutions

- Street lighting
- Access management
- Sidewalks Street lighting
- Enhanced mid-block crossing treatments
- Road diet
- Pedestrian refuge island or median

Bicycle Safety Solutions

- Access management
- Bicycle route signage
- Longitudinal bike stencil
- Cycle tracks
- Dynamic warning signs
- Enhanced mid-block crossing treatments
- Street lighting
- Restrict on-street parking
- Road diet
- Refuge Island or median

Potential Improvements

A majority of the safety improvements are addressed within previous sections of this memorandum for the pedestrian, bicycle, and motor vehicle systems, with the exception of the safety improvements at a few key intersections and roadways as described below.

OR 219/Butteville Road (southern intersection)

The crash rate at the southern OR 219/Butteville Road intersection currently exceeds the critical crash rate. The crash data shows a trend for rear-end crashes at the intersection. Of the 4 rear-end crashes observed in the five years of data, all occurred on the south leg of the intersection as vehicles were exiting Butteville Road. The following improvements are being considered at the intersection:

- Realign OR 219 to improve intersection(s) with Butteville Road
- **Enhanced traffic control (traffic signal [if/when warranted], roundabout, or other appropriate geometric enhancements)**

OR 219/Butteville Road (northern intersection)

The following improvements are being considered at the intersection:

- Enhanced traffic control (traffic signal [if/when warranted], roundabout, or other appropriate geometric enhancements)

Front Street/Lincoln Street

The crash rate at the Front Street/Lincoln Street intersection currently exceeds the critical crash rate. The crash data shows a trend for angle crashes at the intersection. Of the four angle crashes observed in the five years of data, three of the crashes were caused by a driver not yielding the right-of-way. The following improvements are being considered at the intersection:

- Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)

Front Street/Young Street/Garfield Street

The crash rate at the Front Street/Young Street/Garfield Street intersection currently exceeds the critical crash rate. The crash data shows a trend for turning movement crashes at the intersection. Of the four turning movement crashes observed in the five years of data, all four involved vehicles traveling westbound from Young Street The following improvements are being considered at the intersection:

- Evaluate the intersection layout, signing, and striping in correlation to the railroad tracks. Provide clarification for westbound drivers trying to proceed through the intersection

OR 99E/Tomlin Avenue

The OR 99E/Tomlin Avenue intersection is identified within the top 10 percent of crash sites over the last five-year period in the ODOT Statewide Priority Index System. The following improvements are being considered at the intersection:

- Restrict the southbound left-turn movement
- Evaluate the intersection layout, signing, and striping, including any sight distance constraints

Butteville Road/Parr Road

The following improvements are being considered at the intersection:

- Reconstruct the intersection due to grades on approaches

OR 99E

The following improvements are being considered at the intersection based on the study conducted on the corridor:

- Update roadway lighting to meet ODOT roadway lighting standards
- OR 99E between Young Street and Cleveland Street
    - Restrict left-turn movements and eventually close the Silverton Avenue intersection on OR 99E and vacate the segment of Silverton Avenue between OR 99E and Birds Eye Avenue
    - Restrict left-turn movements onto Birds Eye Avenue from Hillsboro Silverton Highway and eventually close the Birds Eye Avenue intersection on Hillsboro Silverton Highway and vacate the segment of Birds Eye Avenue between Hillsboro Silverton Highway and Silverton Avenue

City-wide

A number of safety issues have been identified throughout the planning process along key corridors throughout the city, including OR 99E, OR 219/OR214, Front Street, Evergreen Road, and others. While several projects have been identified along each of these corridors that will address some of the safety concerns, other concerns may not be addressed. Therefore, the following improvements are being considered to address safety issues throughout the city:

- Evaluate traffic safety along OR 99E, OR 219/OR214, Front Street, Evergreen Road, and other key corridors to identify appropriate countermeasures.

FUNDING PROGRAMS

Revenue

The City of Woodburn has historically relied upon multiple revenue sources to fund the maintenance of its transportation network and make capital improvements. These local gas tax revenue, inter-governmental (primarily state gas tax revenue), franchise fees, and other miscellaneous revenue. Table 5 displays the total revenue by source used to fund transportation projects within Woodburn over the most recent seven years that comprehensive data was available.

Table 5: City of Woodburn Revenue History

Revenue Source	FY 2016-2017	FY 2015-2016	FY 2014-2015	FY 2013-2014	FY 2012-2013	FY 2011-2012	FY 2010-2011	Average
Taxes	$129,412	$115,692	$102,517	$101,761	$106,537	$182,109	$121,196	$122,746
Inter-Government	$1,480,082	$1,454,076	$1,409,311	$1,384,277	$1,597,518	$1,312,024	$1,116,011	$1,393,328
Franchise	$359,820	$357,983	$336,707	$360,046	$353,381	$326,713	$347,621	$348,896
Transportation SDC Fees	$33,396	$183,698	$440,595	$521,933	$411,527	$400,172	$153,268	$306,370
Other	$69,856	$59,518	$49,532	$319,086	$49,457	$88,767	$27,147	$94,766
Revenue Total	$2,072,566	$2,170,967	$2,338,662	$2,687,103	$2,518,420	$2,309,785	$1,765,243	$2,266,107

Taxes = Local Gas Tax revenue
Inter-Government = State Gas Tax, State Fund Exchange
Other = Misc. revenue, interest income

Based on the information shown in Table 5, the City of Woodburn has generated an average of approximately $2,266,107 per year in total revenue for transportation-related maintenance/projects.

Potential Funding Sources

The projected transportation funding analysis shows that the City of Woodburn will have a limited source of funds that can solely dedicated to transportation-related capital improvement projects over the next twenty years. As such, Woodburn will likely need to seek additional funds via transportation improvement grants, partnerships with regional and state agencies, and other funding sources to help implement future transportation-related improvements.

Table 6 identifies a list of potential Grant sources and Partnering Opportunities to consider during the course of the 20-year planning horizon. Following Table 6, Table 7 identifies a list of potential new funding sources for Woodburn to consider in an effort to bolster funds for additional capital improvement projects.

Table 6: Potential Grant Sources and Partnering Opportunities

Funding Source	Description	Potential Facility Benefit	Opportunities
Statewide Transportation Improvement Program (STIP)	The Statewide Transportation Improvement Program (STIP) is Oregon's 4-year capital improvement program for major state and regional transportation facilities. This scheduling and funding document is updated every two years. Projects included on the STIP are allocated into the five different ODOT regions.	- Streets - Sidewalks - Bike lanes - Trails	The next STIP (2018-2021) will be organized into two different categories that focus on projects that will fix/preserve the existing transportation network and enhance/improve the transportation network.
Federal Funding	Large trails or trail networks with a transportation purpose can compete for TIGER grant awards. Additional significant federal funding sources include TAP, STP and CMAQ. Depending upon the location and purpose, trails can also be funded by HUD CDBG funds, USDA rural development programs, or EPA funding.	- Multi-Use Trails	Projects in urban areas have traditionally been funded at a minimum of $10,000,000 and rural trails of lower project costs are considered for TIGER funding.
Oregon Bicycle and Pedestrian Program	The Oregon Pedestrian and Bicycle Grant program ended as a standalone solicitation process in 2012. Grant monies are now distributed through the "Enhance" process in the STIP program noted above.	See STIP above	See STIP above.
ATV Grant Program	Operation and maintenance, law enforcement, emergency medical services, land acquisition, leases, planning, development and safety education in Oregon's OHV (off-highway vehicle recreation areas).	- Multi-Use Trails	http://www.oregon.gov/oprd/ATV/pages/grants.aspx

Table 7: Potential New Funding Sources for Consideration by the City of Woodburn

Funding Source	Description	Potential Facility Benefit	Opportunities
User Fees	Fees tacked onto a monthly utility bill or tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance to the street system. This may be a more equitable assessment given the varying fuel efficiency of vehicles. Regardless of fuel	Primarily Street Improvements	The cost of implementing such a system could be prohibitive given the need to track the number of vehicle miles traveled in every vehicle. Additionally, a user fee specific to a single jurisdiction does not account for the street use from vehicles registered in other jurisdictions.

	efficiency, passenger vehicles do equal damage to the street system.		
Street Utility Fees/Road Maintenance Fee	The fee is based on the number of trips a particular land use generates and is usually collected through a regular utility bill. For the communities in Oregon that have adopted this approach, it provides a stable source of revenue to pay for street maintenance allowing for safe and efficient movement of people, goods, and services.	Preservation, restoration, and reconstruction of existing paved residential streets. Includes sidewalks, ramps, curbs and gutters, and utility relocation.	Other cities have adopted street maintenance utility fees at varying amounts charged to residential meters. Woodburn could consider a similar program.
Optional Tax	A tax that is paid at the option of the taxpayer to fund improvements. Usually not a legislative requirement to pay the tax and paid at the time other taxes are collected, optional taxes are usually less controversial and easily collected since they require the taxpayer to decide whether or not to pay the additional tax.	- Streets - Sidewalks - Bike lanes - Multi-Use Trails - Transit	The voluntary nature of the tax limits the reliability and stableness of the funding source.
Sponsorship	Financial backing of a project by a private corporation or public interest group, as a means of enhancing its corporate image.	- Multi-Use Trails	Sponsorship has primarily been used by transit providers to help offset the cost of providing transit services and maintaining transit related improvements.
Federal Funding	Trails with a transportation purpose can compete for TIGER grant awards. Depending upon the location and purpose, trails can also be funded by HUD, CDBG funds, USDA rural development programs, or EPA funding.	- Trails	Projects in urban areas have traditionally been funded at a minimum of $10,000,000 and rural trails of lower project costs are considered for TIGER funding.

Attachment A

Pedestrian and Bicycle Crossing Treatments

PEDESTRIAN CROSSING TREATMENTS

Pedestrian crossing facilities enable pedestrians to safely cross streets, railroad tracks, and other transportation facilities. Planning for appropriate pedestrian crossings requires the community to balance vehicular mobility needs with providing crossing locations that the desired routes of walkers.

Unmarked Crosswalks

Under Oregon law, pedestrians have the right-of-way at all unsignalized intersections. On narrow, low-speed streets unmarked crosswalks are generally sufficient for pedestrians to cross the street safely, as the low-speed environment makes drivers more responsive to the presence of pedestrians. However, drivers are less likely to yield to pedestrians at unmarked crosswalks on high-speed and/or high-volume roadways, even when the pedestrian has stepped onto the roadway. In these situations, enhanced pedestrian crossing facilities are needed to remind drivers that they must yield when pedestrians are present.

Marked Crosswalks

Marked crosswalks are painted roadway markings that indicate the location of a crosswalk to motorists. Marked crosswalks can be accompanied by signs, curb extensions and/or median refuge islands, and may occur at intersections or at mid-block locations. Research has shown that marked crosswalks in certain situations do not improve pedestrian safety and can even make it worse. Recent research indicates that on multi-lane roadways (more than two lanes), marked crosswalks should not be installed without accompanying treatments, such as Rectangular Rapid Flash Beacons (RRFBs) or Pedestrian Hybrid beacons. Median refuge islands are another accompanying treatment that may be used for marked crosswalks on multi-lane roadways to although the pedestrian to make a two-stage crossing and focus on one direction at a time.

Rectangular Rapid Flashing Beacon (RRFB)

RRFBs are user-actuated amber lights that have an irregular flash pattern similar to emergency flashers on police vehicles. These supplemental warning lights are used at unsignalized intersections or mid-block crosswalks to improve safety for pedestrians using a crosswalk. RRFBs could be used at any unsignalized intersection or mid-block crossing where warrants require a higher level of crosswalk protection.

Pedestrian Hybrid Beacon

A Pedestrian Hybrid Beacon (sometimes called a HAWK signal) is a user-actuated signal that is unlit when not in use. It begins with a yellow light alerting drivers to slow, and then displays a solid red light requiring drivers to remain stopped while pedestrians cross the street. The beacon then shifts to flashing red lights to signal that motorists may proceed, after stopping, and after pedestrians have completed their crossing. A Pedestrian Hybrid Beacon can be used at mid-block crossings or, in some cases, at unsignalized intersections (the MUTCD suggests that the beacons be located at least 100-feet from an intersection). Pedestrian Hybrid Beacons could be used at any unsignalized intersection or mid-block crossing where warrants require a higher level of crosswalk protection.

Pedestrian Signal

Pedestrian Signals provide pedestrians with a signal-controlled crossing at a mid-block location or, in some cases at a previously stop-controlled intersection where pedestrian volumes warrant full signalization (the MUTCD no longer allows half signals at intersections). The signal remains green for the mainline traffic movements until actuated by a pushbutton to call a red signal for traffic. They are typically located at midblock crossings with high pedestrian or bicycle demand and/or high traffic volumes, such as where multi-use paths intersect with roadways.

Pedestrian Countdown Heads

Pedestrian Countdown heads inform pedestrians of the time remaining to cross the street with a countdown timer at the signalized crossing. The countdown should include enough time for a pedestrian to cross the full length of the street, or in rare cases, reach a refuge island. The 2009 Manual on Uniform Traffic Control Devices (MUTCD) requires all new pedestrian signals, and any retrofitted signals to include pedestrian countdown signals.

Leading Pedestrian Interval (LPI)

Leading pedestrian intervals allow pedestrians to start crossing the street at a signalized intersections five to seven seconds before conflicting vehicles are given a green light and allowed to enter the intersection. They are most commonly used at signalized intersections where left- or right-turning vehicles interfere with pedestrian crossing movements. LPI could be applied at all existing or potential future traffic signals to improve crossing conditions for pedestrians.

Geometric Considerations

There are a number of geometric enhancements that can be considered at pedestrian crossings that may be implemented in conjunction with previously discuss treatments.

Curb Extensions

Curb extensions create additional space for pedestrians at crosswalks and allow pedestrians and vehicles to better see each other. Curb extensions are typically installed at intersections and midblock crossings located along roadways with on-street parking to help reduce crossing distances and the amount of exposure pedestrians have to vehicle traffic. Curb extensions can narrow the vehicle path, slow down traffic, and prohibit fast turns. Curb extensions could be applied along any street where on-street parking is allowed or where there is sufficient shoulder width so the curb extension does not conflict with on-street bike lanes.

Raised Median Island

Raised median islands provide a protected area in the middle of the roadway where pedestrians can stop while crossing the street. Raised median islands allow pedestrians to complete two-stage crossings if needed. Raised median islands can narrow the vehicle path and slow down traffic along the roadway. Raised median islands could be applied along any street where they would not interfere with turning movements at driveways and intersecting roadways.

Other Considerations

Street Furniture and Lighting

Street furniture includes pedestrian seating, information / wayfinding structures, and trash cans. Street furniture and lighting can be used to enhance the pedestrian experience and encourage pedestrian activity on a street.

Bicycle Crossing Treatments

Pavement Markings Through Intersections

Pavement markings can be extended through the intersection for bicyclists. Green paint can be used in "conflict zones" where vehicles and bicycles may cross paths in intersections, at driveways, or at right-turn pockets. These pavement marking are typically used at signalized intersections to emphasize a connection in a larger bicycle network. They could be used along at all signalized intersections and in other select "conflict zones".

Bike Box

Bicycle boxes are designated spaces at signalized intersections, placed between a set-back stop bar and the pedestrian crosswalk, that allow bicyclists to queue in front of motor vehicles at red lights. Bike boxes are typically used at signalized intersections to facilitate turn movements as well as other movements for cyclists.

Two-Stage Left-Turn Bike Box

Two-stage left-turn bike boxes allow bicyclists to safely and comfortably make left-turns at multilane intersections from a right-side bicycle lane or cycle track. Bicyclists arriving on a green light travel into the intersection and pull out into the two-stage turn queue box away from through-moving bicycles and in front of cross street traffic, where they can wait to proceed through on the side-street green signal. Two-stage left-turn bike boxes can be applied at signalized intersections to improve bicycle crossing conditions.

Bike only signal

Bicycle-only signals can be used at intersections to provide a separate signal phase that is dedicated to bicyclists. At this stage, the MUTCD does not allow bicycle signal to operation concurrent with permissive vehicle phases.

Bicycle Detection

Many traffic signals along are actuated, meaning that green indication is given to a movement when a vehicle is detected. However, actuating a signal as a cyclist can be difficult. Bicycle detection allows cyclists to actuate the traffic signal from the bicycle lane with a detector that is calibrated to recognize a bicycle. Pavement markings could be added to show cyclists where to stand to actuate a signal. Bicycle detection is typically applied at signalized intersections that accommodate bicycles and can be used at all of the signalized intersection to improve bicycle crossing conditions.

Other Considerations

Bicycle Parking

Bicycle parking facilities provide safe and secure places for people to park their bicycles. The most common bicycle parking facility is the "staple", which provides space for up to two bicycles and is typically located along the side of the road in a commercial area or near the main entrance to a building. Bicycle parking could be applied along streets located adjacent to commercial properties.

Wayfinding Signs

Wayfinding signs are signs located along roadways or at intersections that direct bicyclists towards destinations in the area and/or to define a bicycle route. They typically include distances and average walk/cycle times. Wayfinding signs are generally used on primary bicycle routes and multiuse paths.

Attachment B

Year 2040 Auto-related Improvement Worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	239	143	330	331	150	245
Future Volume (vph)	239	143	330	331	150	245
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1417		1409	1357	1300	
Flt Permitted	1.00		0.48	1.00	0.98	
Satd. Flow (perm)	1417		714	1357	1300	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	249	149	344	345	156	255
RTOR Reduction (vph)	37	0	0	0	99	0
Lane Group Flow (vph)	361	0	344	345	312	0
Heavy Vehicles (%)	15%	21%	18%	29%	31%	15%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	4	
Permitted Phases			6			
Actuated Green, G (s)	29.7		29.7	29.7	16.0	
Effective Green, g (s)	29.7		29.7	29.7	16.0	
Actuated g/C Ratio	0.54		0.54	0.54	0.29	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	769		387	736	380	
v/s Ratio Prot	0.26			0.25	c0.24	
v/s Ratio Perm			c0.48			
v/c Ratio	0.47		0.89	0.47	0.82	
Uniform Delay, d1	7.7		11.0	7.7	18.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		21.1	0.5	13.3	
Delay (s)	8.1		32.2	8.1	31.3	
Level of Service	A		C	A	C	
Approach Delay (s)	8.1			20.1	31.3	
Approach LOS	A			C	C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.6%	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												
Traffic Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Future Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	370
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	25
Lane Group Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	345
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		75.6	120.0		60.7	120.0				35.4		50.8
Effective Green, g (s)		75.6	120.0		60.7	120.0				35.4		50.8
Actuated g/C Ratio		0.63	1.00		0.51	1.00				0.29		0.42
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1805	1255		1437	1173				799		538
v/s Ratio Prot		0.36			c0.39					c0.27		0.27
v/s Ratio Perm			0.36			c0.64						
v/c Ratio		0.56	0.36		0.76	0.64				0.92		0.64
Uniform Delay, d1		12.7	0.0		23.8	0.0				40.9		27.4
Progression Factor		1.00	1.00		1.02	1.00				1.00		1.00
Incremental Delay, d2		1.3	0.8		1.8	1.2				15.1		2.3
Delay (s)		14.0	0.8		26.0	1.2				55.9		29.7
Level of Service		B	A		C	A				E		C
Approach Delay (s)		9.9			15.9			0.0			47.1	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.2%	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												
Traffic Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Future Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1107	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1107	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1525	283	0	1450	469	409	0	711	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	21	0	0	0
Lane Group Flow (vph)	0	1525	283	0	1450	469	368	354	356	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		71.5	120.0		71.5	120.0	39.5	39.5	39.5			
Effective Green, g (s)		71.5	120.0		71.5	120.0	39.5	39.5	39.5			
Actuated g/C Ratio		0.60	1.00		0.60	1.00	0.33	0.33	0.33			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1707	1234		1623	1212	444	364	372			
v/s Ratio Prot		0.53			c0.53							
v/s Ratio Perm			0.23			0.39	0.27	0.32	0.31			
v/c Ratio		0.89	0.23		0.89	0.39	0.83	0.97	0.96			
Uniform Delay, d1		21.0	0.0		21.0	0.0	37.1	39.7	39.4			
Progression Factor		1.43	1.00		0.73	1.00	1.00	1.00	1.00			
Incremental Delay, d2		5.8	0.3		4.2	0.5	11.8	39.3	34.9			
Delay (s)		35.8	0.3		19.5	0.5	49.0	79.0	74.3			
Level of Service		D	A		B	A	D	E	E			
Approach Delay (s)		30.2			14.8			67.6			0.0	
Approach LOS		C			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.3%	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												
Traffic Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Future Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2835		1373	1390	1261	1511	1651	1095
Flt Permitted	0.09	1.00	1.00	0.08	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	132	2842	1316	124	2835		1373	1390	1261	1511	1651	1095
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)	84	1526	213	330	1284	14	546	26	330	20	34	74
RTOR Reduction (vph)	0	0	110	0	1	0	0	0	246	0	0	70
Lane Group Flow (vph)	84	1526	103	330	1297	0	284	288	84	20	34	4
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	65.6	47.8	47.8	65.6	58.4		30.4	30.4	30.4	6.5	6.5	6.5
Effective Green, g (s)	65.6	47.8	47.8	65.6	58.4		30.4	30.4	30.4	6.5	6.5	6.5
Actuated g/C Ratio	0.55	0.40	0.40	0.55	0.49		0.25	0.25	0.25	0.05	0.05	0.05
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	146	1132	524	258	1379		347	352	319	81	89	59
v/s Ratio Prot	0.03	c0.54		c0.19	0.46		0.21	c0.21		0.01	c0.02	
v/s Ratio Perm	0.28		0.08	0.51					0.07			0.00
v/c Ratio	0.58	1.35	0.20	1.28	0.94		0.82	0.82	0.26	0.25	0.38	0.07
Uniform Delay, d1	19.5	36.1	23.6	47.7	29.2		42.2	42.2	35.8	54.4	54.8	53.9
Progression Factor	0.98	0.94	1.24	0.90	0.79		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	159.0	0.3	137.2	6.6		13.6	13.4	0.3	1.2	2.0	0.4
Delay (s)	20.9	193.2	29.6	179.9	29.6		55.8	55.6	36.1	55.6	56.8	54.2
Level of Service	C	F	C	F	C		E	E	D	E	E	D
Approach Delay (s)		166.1			60.0			48.5			55.1	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	100.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	97.9%	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												
Traffic Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Future Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2747		1471	2720		1525	1396		1385	1427	
Flt Permitted	0.07	1.00		0.06	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	113	2747		91	2720		1525	1396		1385	1427	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	159	1712	43	28	1556	79	23	28	9	99	23	131
RTOR Reduction (vph)	0	1	0	0	2	0	0	9	0	0	120	0
Lane Group Flow (vph)	159	1755	0	28	1633	0	23	28	0	99	34	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	84.8	80.8		72.2	72.2		8.7	5.4		13.3	10.0	
Effective Green, g (s)	84.8	80.8		72.2	72.2		8.7	5.4		13.3	10.0	
Actuated g/C Ratio	0.71	0.67		0.60	0.60		0.07	0.05		0.11	0.08	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	231	1849		100	1636		110	62		153	118	
v/s Ratio Prot	0.07	c0.64		0.01	c0.60		0.02	c0.02		c0.07	0.02	
v/s Ratio Perm	0.42			0.16								
v/c Ratio	0.69	0.95		0.28	1.00		0.21	0.46		0.65	0.29	
Uniform Delay, d1	35.0	17.7		17.6	23.8		52.4	55.9		51.1	51.7	
Progression Factor	0.38	0.90		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	1.5		1.1	21.8		0.7	3.9		8.0	1.0	
Delay (s)	14.0	17.6		18.8	45.6		53.1	59.7		59.1	52.6	
Level of Service	B	B		B	D		D	E		E	D	
Approach Delay (s)		17.3			45.1			57.2			55.2	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	805	970	170	92	95
Future Volume (vph)	128	805	970	170	92	95
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.93	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1330	1446	1483	1212	1253	
Flt Permitted	0.17	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	232	1446	1483	1212	1253	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	136	856	1032	181	98	101
RTOR Reduction (vph)	0	0	0	20	45	0
Lane Group Flow (vph)	136	856	1032	161	154	0
Confl. Peds. (#/hr)	8			8		
Heavy Vehicles (%)	25%	21%	18%	18%	30%	24%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	61.2	61.2	61.2	61.2	14.7	
Effective Green, g (s)	61.2	61.2	61.2	61.2	14.7	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1054	1081	884	219	
v/s Ratio Prot		0.59	c0.70		c0.12	
v/s Ratio Perm	0.59			0.13		
v/c Ratio	0.80	0.81	0.95	0.18	0.71	
Uniform Delay, d1	7.4	7.5	10.1	3.5	32.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	23.5	4.9	17.4	0.1	9.9	
Delay (s)	31.0	12.4	27.5	3.6	42.4	
Level of Service	C	B	C	A	D	
Approach Delay (s)		14.9	24.0		42.4	
Approach LOS		B	C		D	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	83.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	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												
Traffic Volume (vph)	17	674	129	97	946	9	58	6	123	10	4	77
Future Volume (vph)	17	674	129	97	946	9	58	6	123	10	4	77
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	0.99		1.00	1.00			1.00			1.00	0.93
Flpb, ped/bikes	1.00	1.00		0.99	1.00			0.98			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.91			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1525	1389		1517	1419			1451			1490	1293
Flt Permitted	0.18	1.00		0.25	1.00			0.89			0.75	1.00
Satd. Flow (perm)	283	1389		405	1419			1313			1160	1293
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)	19	741	142	107	1040	10	64	7	135	11	4	85
RTOR Reduction (vph)	0	6	0	0	0	0	0	82	0	0	0	72
Lane Group Flow (vph)	19	877	0	107	1050	0	0	124	0	0	15	13
Confl. Peds. (#/hr)	4		14	14		4	22					22
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	9%	23%	16%	9%	23%	38%	0%	0%	10%	9%	25%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	63.2	63.2		63.2	63.2			12.3			12.3	12.3
Effective Green, g (s)	63.2	63.2		63.2	63.2			12.3			12.3	12.3
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.15			0.15	0.15
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)	214	1051		306	1074			193			170	190
v/s Ratio Prot		0.63			c0.74							
v/s Ratio Perm	0.07			0.26				c0.09			0.01	0.01
v/c Ratio	0.09	0.83		0.35	0.98			0.64			0.09	0.07
Uniform Delay, d1	2.6	6.7		3.4	9.5			33.5			30.8	30.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.2	5.8		0.7	21.9			7.1			0.2	0.1
Delay (s)	2.8	12.5		4.0	31.4			40.7			31.0	30.8
Level of Service	A	B		A	C			D			C	C
Approach Delay (s)		12.3			28.9			40.7			30.8	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.0%	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												
Traffic Volume (vph)	155	401	262	334	288	92	242	495	158	234	971	114
Future Volume (vph)	155	401	262	334	288	92	242	495	158	234	971	114
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1311		2906	2639	1064	2665	2950	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1311		2906	2639	1064	2665	2950	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	418	273	348	300	96	252	516	165	244	1011	119
RTOR Reduction (vph)	0	0	164	0	9	0	0	0	115	0	7	0
Lane Group Flow (vph)	161	418	109	348	387	0	252	516	50	244	1123	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	18.9	32.5	32.5	27.5	41.1		10.5	35.5	39.5	14.5	39.5	
Effective Green, g (s)	18.9	32.5	32.5	27.5	41.1		10.5	35.5	39.5	14.5	39.5	
Actuated g/C Ratio	0.15	0.25	0.25	0.21	0.32		0.08	0.27	0.30	0.11	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	206	370	304	283	414		234	720	323	297	896	
v/s Ratio Prot	0.11	c0.28		c0.26	0.30		c0.09	0.20		0.09	c0.38	
v/s Ratio Perm			0.09						0.05			
v/c Ratio	0.78	1.13	0.36	1.23	0.94		1.08	0.72	0.16	0.82	1.25	
Uniform Delay, d1	53.6	48.8	40.2	51.2	43.2		59.8	42.7	33.1	56.5	45.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.18	0.85	0.62	1.00	1.00	
Incremental Delay, d2	17.3	86.9	0.8	130.4	28.6		70.3	4.1	0.7	16.5	123.2	
Delay (s)	70.9	135.6	40.9	181.6	71.7		140.9	40.2	21.2	73.0	168.5	
Level of Service	E	F	D	F	E		F	D	C	E	F	
Approach Delay (s)		93.0			123.1			64.1			151.5	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	112.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.5%	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												
Traffic Volume (vph)	225	247	132	108	237	24	109	191	57	10	228	266
Future Volume (vph)	225	247	132	108	237	24	109	191	57	10	228	266
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	0.99		1.00	1.00			1.00	0.97		1.00	0.95
Flpb, ped/bikes	1.00	1.00		0.99	1.00			0.99	1.00		1.00	1.00
Frt	1.00	0.95		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)	1112	1312		1320	1278			1540	1198		1454	1104
Flt Permitted	0.54	1.00		0.41	1.00			0.75	1.00		0.98	1.00
Satd. Flow (perm)	633	1312		568	1278			1180	1198		1430	1104
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)	265	291	155	127	279	28	128	225	67	12	268	313
RTOR Reduction (vph)	0	34	0	0	6	0	0	0	43	0	0	200
Lane Group Flow (vph)	265	412	0	127	301	0	0	353	24	0	280	113
Confl. Peds. (#/hr)	4		11	11		4	22		4	4		22
Heavy Vehicles (%)	49%	27%	21%	25%	37%	12%	14%	9%	21%	0%	21%	28%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.3	24.3		24.3	24.3			18.2	18.2		18.2	18.2
Effective Green, g (s)	24.3	24.3		24.3	24.3			18.2	18.2		18.2	18.2
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.36	0.36		0.36	0.36
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)	304	631		273	614			425	431		515	397
v/s Ratio Prot		0.31			0.24							
v/s Ratio Perm	c0.42			0.22				c0.30	0.02		0.20	0.10
v/c Ratio	0.87	0.65		0.47	0.49			0.83	0.06		0.54	0.28
Uniform Delay, d1	11.7	9.9		8.8	8.9			14.7	10.5		12.8	11.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	22.8	2.4		1.3	0.6			12.9	0.1		1.2	0.4
Delay (s)	34.5	12.3		10.0	9.5			27.7	10.6		14.0	11.9
Level of Service	C	B		B	A			C	B		B	B
Approach Delay (s)		20.6			9.7			24.9			12.9	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.9%	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												
Traffic Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Future Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98	1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1497	1227	1464	1343		1363	2667		1458	2738	
Flt Permitted		0.71	1.00	0.55	1.00		0.07	1.00		0.15	1.00	
Satd. Flow (perm)		1097	1227	846	1343		106	2667		234	2738	
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)	85	59	71	156	46	56	77	1188	107	80	1546	106
RTOR Reduction (vph)	0	0	57	0	35	0	0	4	0	0	3	0
Lane Group Flow (vph)	0	144	14	156	67	0	77	1291	0	80	1649	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)		26.0	26.0	26.0	26.0		90.5	83.4		90.5	81.3	
Effective Green, g (s)		26.0	26.0	26.0	26.0		90.5	83.4		90.5	81.3	
Actuated g/C Ratio		0.20	0.20	0.20	0.20		0.70	0.64		0.70	0.63	
Clearance Time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5	2.5	2.5		2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		219	245	169	268		162	1710		229	1712	
v/s Ratio Prot					0.05		0.03	c0.48		0.02	c0.60	
v/s Ratio Perm		0.13	0.01	c0.18			0.30			0.22		
v/c Ratio		0.66	0.06	0.92	0.25		0.48	0.75		0.35	0.96	
Uniform Delay, d1		47.9	42.1	51.0	43.8		37.6	16.2		9.3	22.9	
Progression Factor		1.00	1.00	1.00	1.00		0.85	0.91		1.20	1.05	
Incremental Delay, d2		6.2	0.1	47.2	0.4		1.3	2.5		0.1	2.2	
Delay (s)		54.1	42.2	98.2	44.1		33.2	17.3		11.1	26.2	
Level of Service		D	D	F	D		C	B		B	C	
Approach Delay (s)		50.2			76.8			18.2			25.5	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.3%	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												
Traffic Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Future Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.87			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1379	1173			1406	1124	1446	2629		1288	2720	
Flt Permitted	0.73	1.00			0.77	1.00	0.07	1.00		0.19	1.00	
Satd. Flow (perm)	1060	1173			1122	1124	105	2629		254	2720	
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)	115	12	96	29	12	28	85	1219	15	18	1673	131
RTOR Reduction (vph)	0	82	0	0	0	24	0	1	0	0	3	0
Lane Group Flow (vph)	115	26	0	0	41	4	85	1233	0	18	1801	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)	18.9	18.9			18.9	18.9	97.6	93.4		97.6	89.3	
Effective Green, g (s)	18.9	18.9			18.9	18.9	97.6	93.4		97.6	89.3	
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.75	0.72		0.75	0.69	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	154	170			163	163	164	1888		224	1868	
v/s Ratio Prot		0.02					0.03	c0.47		0.00	c0.66	
v/s Ratio Perm	c0.11				0.04	0.00	0.36			0.06		
v/c Ratio	0.75	0.15			0.25	0.02	0.52	0.65		0.08	0.96	
Uniform Delay, d1	53.3	48.6			49.3	47.6	15.8	9.7		9.6	18.9	
Progression Factor	1.00	1.00			1.00	1.00	0.94	1.43		1.21	0.53	
Incremental Delay, d2	16.9	0.3			0.6	0.0	1.3	1.1		0.0	7.7	
Delay (s)	70.2	48.9			49.9	47.7	16.1	15.1		11.7	17.8	
Level of Service	E	D			D	D	B	B		B	B	
Approach Delay (s)		59.9			49.0			15.1			17.7	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.7%	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												
Traffic Volume (vph)	159	180	121	95	223	281	82	789	40	265	1252	146
Future Volume (vph)	159	180	121	95	223	281	82	789	40	265	1252	146
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1304		1249	1562	1293	1179	2697		1374	2765	
Flt Permitted	0.38	1.00		0.26	1.00	1.00	0.08	1.00		0.20	1.00	
Satd. Flow (perm)	485	1304		346	1562	1293	99	2697		283	2765	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	161	182	122	96	225	284	83	797	40	268	1265	147
RTOR Reduction (vph)	0	19	0	0	0	100	0	3	0	0	7	0
Lane Group Flow (vph)	161	285	0	96	225	184	83	834	0	268	1405	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4		8	6			2		
Actuated Green, G (s)	36.9	29.4		36.9	26.4	26.4	75.1	50.6		75.1	67.8	
Effective Green, g (s)	36.9	29.4		36.9	26.4	26.4	75.1	50.6		75.1	67.8	
Actuated g/C Ratio	0.28	0.23		0.28	0.20	0.20	0.58	0.39		0.58	0.52	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	2.5		3.0	2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	197	294		150	317	262	117	1049		369	1442	
v/s Ratio Prot	c0.07	c0.22		0.04	0.14		0.04	c0.31		0.14	c0.51	
v/s Ratio Perm	0.17			0.14		0.14	0.37			0.28		
v/c Ratio	0.82	0.97		0.64	0.71	0.70	0.71	0.79		0.73	0.97	
Uniform Delay, d1	41.5	49.9		37.7	48.2	48.1	21.6	35.1		33.5	30.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.17	0.98		0.57	0.52	
Incremental Delay, d2	22.4	44.3		9.0	6.6	7.6	11.1	4.1		2.6	9.9	
Delay (s)	63.9	94.2		46.6	54.8	55.7	36.3	38.6		21.8	25.7	
Level of Service	E	F		D	D	E	D	D		C	C	
Approach Delay (s)		83.7			54.0			38.4			25.1	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	84	82	917	1176	245
Future Volume (vph)	87	84	82	917	1176	245
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.97	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1374	1086		2639	2545	
Flt Permitted	0.95	1.00		0.63	1.00	
Satd. Flow (perm)	1374	1086		1680	2545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	91	89	997	1278	266
RTOR Reduction (vph)	0	81	0	0	10	0
Lane Group Flow (vph)	95	10	0	1086	1534	0
Confl. Peds. (#/hr)		1	1			1
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	21%	35%	31%	25%	29%	16%
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	14.3	14.3		107.7	107.7	
Effective Green, g (s)	14.3	14.3		107.7	107.7	
Actuated g/C Ratio	0.11	0.11		0.83	0.83	
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)	151	119		1391	2108	
v/s Ratio Prot	c0.07				0.60	
v/s Ratio Perm		0.01		c0.65		
v/c Ratio	0.63	0.08		0.78	0.73	
Uniform Delay, d1	55.3	52.0		5.4	4.8	
Progression Factor	1.00	1.00		1.00	0.46	
Incremental Delay, d2	8.0	0.3		4.4	0.9	
Delay (s)	63.3	52.3		9.8	3.1	
Level of Service	E	D		A	A	
Approach Delay (s)	57.9			9.8	3.1	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.5%	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												
Traffic Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Future Volume (vph)	0	999	447	0	1073	733	0	0	0	717	0	363
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	370
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	1019	456	0	1095	748	0	0	0	732	0	335
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		96.0	150.0		82.0	150.0				45.0		59.5
Effective Green, g (s)		96.0	150.0		82.0	150.0				45.0		59.5
Actuated g/C Ratio		0.64	1.00		0.55	1.00				0.30		0.40
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1834	1255		1553	1173				813		504
v/s Ratio Prot		0.36			c0.39					c0.27		0.26
v/s Ratio Perm			0.36			c0.64						
v/c Ratio		0.56	0.36		0.71	0.64				0.90		0.66
Uniform Delay, d1		15.1	0.0		25.1	0.0				50.4		37.1
Progression Factor		1.00	1.00		1.03	1.00				1.00		1.00
Incremental Delay, d2		1.2	0.8		1.3	1.3				13.0		3.0
Delay (s)		16.3	0.8		27.0	1.3				63.4		40.0
Level of Service		B	A		C	A				E		D
Approach Delay (s)		11.5			16.6			0.0			55.5	
Approach LOS		B			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.2%	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												
Traffic Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Future Volume (vph)	0	1464	272	0	1392	450	393	0	683	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.98			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1106	1131			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1106	1131			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1525	283	0	1450	469	409	0	711	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	19	0	0	0
Lane Group Flow (vph)	0	1525	283	0	1450	469	368	356	358	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		89.7	150.0		89.7	150.0	51.3	51.3	51.3			
Effective Green, g (s)		89.7	150.0		89.7	150.0	51.3	51.3	51.3			
Actuated g/C Ratio		0.60	1.00		0.60	1.00	0.34	0.34	0.34			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1713	1234		1629	1212	461	378	386			
v/s Ratio Prot		0.53			c0.53							
v/s Ratio Perm			0.23			0.39	0.27	0.32	0.32			
v/c Ratio		0.89	0.23		0.89	0.39	0.80	0.94	0.93			
Uniform Delay, d1		25.9	0.0		25.9	0.0	44.7	47.9	47.6			
Progression Factor		1.39	1.00		0.76	1.00	1.00	1.00	1.00			
Incremental Delay, d2		5.7	0.3		4.2	0.5	9.0	31.5	28.0			
Delay (s)		41.9	0.3		23.8	0.5	53.7	79.4	75.5			
Level of Service		D	A		C	A	D	E	E			
Approach Delay (s)		35.4			18.1			69.7			0.0	
Approach LOS		D			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.3%	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												
Traffic Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Future Volume (vph)	81	1480	207	320	1245	14	530	25	320	19	33	72
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2835		1373	1390	1259	1511	1651	1095
Flt Permitted	0.10	1.00	1.00	0.06	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	146	2842	1316	92	2835		1373	1390	1259	1511	1651	1095
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)	84	1526	213	330	1284	14	546	26	330	20	34	74
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	247	0	0	70
Lane Group Flow (vph)	84	1526	128	330	1298	0	284	288	83	20	34	4
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	86.5	64.5	64.5	86.5	77.0		37.7	37.7	37.7	8.3	8.3	8.3
Effective Green, g (s)	86.5	64.5	64.5	86.5	77.0		37.7	37.7	37.7	8.3	8.3	8.3
Actuated g/C Ratio	0.58	0.43	0.43	0.58	0.51		0.25	0.25	0.25	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	161	1222	565	246	1455		345	349	316	83	91	60
v/s Ratio Prot	0.03	0.54		c0.20	0.46		0.21	c0.21		0.01	c0.02	
v/s Ratio Perm	0.27		0.10	c0.58					0.07			0.00
v/c Ratio	0.52	1.25	0.23	1.34	0.89		0.82	0.83	0.26	0.24	0.37	0.07
Uniform Delay, d1	21.7	42.8	27.0	60.5	32.8		53.0	53.0	45.0	67.8	68.3	67.2
Progression Factor	1.10	0.94	1.07	0.74	0.53		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	115.1	0.4	166.6	4.5		14.3	14.3	0.3	1.1	1.9	0.4
Delay (s)	25.0	155.2	29.4	211.6	21.8		67.3	67.4	45.3	68.9	70.2	67.5
Level of Service	C	F	C	F	C		E	E	D	E	E	E
Approach Delay (s)		134.5			60.3			59.3			68.5	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	90.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	97.9%	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												
Traffic Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Future Volume (vph)	153	1644	41	27	1494	76	22	27	9	95	22	126
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2747		1471	2719		1525	1396		1385	1427	
Flt Permitted	0.08	1.00		0.07	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	137	2747		106	2719		1525	1396		1385	1427	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	159	1712	43	28	1556	79	23	28	9	99	23	131
RTOR Reduction (vph)	0	1	0	0	2	0	0	9	0	0	119	0
Lane Group Flow (vph)	159	1755	0	28	1633	0	23	28	0	99	35	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	110.2	106.2		97.6	97.6		9.8	7.1		16.2	13.5	
Effective Green, g (s)	110.2	106.2		97.6	97.6		9.8	7.1		16.2	13.5	
Actuated g/C Ratio	0.73	0.71		0.65	0.65		0.07	0.05		0.11	0.09	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	219	1944		105	1769		99	66		149	128	
v/s Ratio Prot	0.06	c0.64		0.01	c0.60		0.02	c0.02		c0.07	0.02	
v/s Ratio Perm	0.47			0.17								
v/c Ratio	0.73	0.90		0.27	0.92		0.23	0.43		0.66	0.27	
Uniform Delay, d1	39.4	17.7		17.4	22.9		66.5	69.5		64.3	63.7	
Progression Factor	0.62	0.69		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.8		1.0	9.6		0.9	3.3		9.6	0.8	
Delay (s)	25.5	13.0		18.4	32.5		67.4	72.7		73.9	64.5	
Level of Service	C	B		B	C		E	E		E	E	
Approach Delay (s)		14.0			32.2			70.7			68.2	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.5%	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												
Traffic Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Future Volume (vph)	80	55	67	147	43	53	72	1117	101	75	1453	100
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98	1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1497	1227	1464	1343		1363	2667		1458	2771	1196
Flt Permitted		0.71	1.00	0.55	1.00		0.09	1.00		0.15	1.00	1.00
Satd. Flow (perm)		1097	1227	846	1343		133	2667		234	2771	1196
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)	85	59	71	156	46	56	77	1188	107	80	1546	106
RTOR Reduction (vph)	0	0	57	0	35	0	0	4	0	0	0	35
Lane Group Flow (vph)	0	144	14	156	67	0	77	1291	0	80	1546	71
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			2			6		2
Actuated Green, G (s)		26.0	26.0	26.0	26.0		90.5	83.4		90.5	81.3	81.3
Effective Green, g (s)		26.0	26.0	26.0	26.0		90.5	83.4		90.5	81.3	81.3
Actuated g/C Ratio		0.20	0.20	0.20	0.20		0.70	0.64		0.70	0.63	0.63
Clearance Time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)		2.5	2.5	2.5	2.5		2.5	4.6		2.5	4.6	4.6
Lane Grp Cap (vph)		219	245	169	268		179	1710		229	1732	747
v/s Ratio Prot					0.05		0.03	c0.48		0.02	c0.56	
v/s Ratio Perm		0.13	0.01	c0.18			0.27			0.22		0.06
v/c Ratio		0.66	0.06	0.92	0.25		0.43	0.75		0.35	0.89	0.10
Uniform Delay, d1		47.9	42.1	51.0	43.8		32.2	16.2		9.3	20.6	9.7
Progression Factor		1.00	1.00	1.00	1.00		0.88	0.92		1.16	1.10	0.74
Incremental Delay, d2		6.2	0.1	47.2	0.4		0.9	2.5		0.1	0.8	0.0
Delay (s)		54.1	42.2	98.2	44.1		29.3	17.4		10.8	23.4	7.2
Level of Service		D	D	F	D		C	B		B	C	A
Approach Delay (s)		50.2			76.8			18.1			21.9	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.9%	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												
Traffic Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Future Volume (vph)	108	11	90	27	11	26	80	1146	14	17	1573	123
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.97	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	0.99	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1379	1173			1406	1124	1446	2629		1288	2748	1244
Flt Permitted	0.73	1.00			0.77	1.00	0.09	1.00		0.18	1.00	1.00
Satd. Flow (perm)	1060	1173			1122	1124	134	2629		247	2748	1244
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)	115	12	96	29	12	28	85	1219	15	18	1673	131
RTOR Reduction (vph)	0	82	0	0	0	24	0	0	0	0	0	32
Lane Group Flow (vph)	115	26	0	0	41	4	85	1234	0	18	1673	99
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		2
Actuated Green, G (s)	18.9	18.9			18.9	18.9	97.6	90.6		97.6	88.8	88.8
Effective Green, g (s)	18.9	18.9			18.9	18.9	97.6	90.6		97.6	88.8	88.8
Actuated g/C Ratio	0.15	0.15			0.15	0.15	0.75	0.70		0.75	0.68	0.68
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	4.6
Lane Grp Cap (vph)	154	170			163	163	189	1832		241	1877	849
v/s Ratio Prot		0.02					0.03	c0.47		0.00	c0.61	
v/s Ratio Perm	c0.11				0.04	0.00	0.31			0.05		0.08
v/c Ratio	0.75	0.15			0.25	0.02	0.45	0.67		0.07	0.89	0.12
Uniform Delay, d1	53.3	48.6			49.3	47.6	11.9	11.3		10.3	16.7	7.1
Progression Factor	1.00	1.00			1.00	1.00	1.67	0.69		1.39	0.64	1.32
Incremental Delay, d2	16.9	0.3			0.6	0.0	0.9	1.4		0.1	3.9	0.1
Delay (s)	70.2	48.9			49.9	47.7	20.8	9.2		14.3	14.5	9.5
Level of Service	E	D			D	D	C	A		B	B	A
Approach Delay (s)		59.9			49.0			9.9			14.2	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Attachment C

TPAU Travel Demand Model Alternatives Data

Woodburn_V2_0_00_TSP_00_2040 ODOT Request 018 Scenario 1 Peak Volumes

VISUM v16 PTV AG		Woodburn_V2_2040_sc1_v16.ver
Plotted on 11.12.2018		beth.a.pickman@odot.state.or.us

Woodburn_V2_0_00_TSP_00_2040 ODOT Request 018 Scenario 2 Peak Volumes

VISUM v16 PTV AG		Woodburn_V2_2040_sc2_v16.ver
Plotted on 11.12.2018		beth.a.pickman@odot.state.or.us

Attachment D

Year 2040 Alternatives Worksheets

Intersection						
Int Delay, s/veh	172.2					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	387	128	349	335	108	333
Future Vol, veh/h	387	128	349	335	108	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	21	18	29	31	15
Mvmt Flow	403	133	364	349	113	347

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	536	0	1546	470
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	1076	-
Critical Hdwy	-	-	4.28	-	6.71	6.35
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.362	-	3.779	3.435
Pot Cap-1 Maneuver	-	-	956	-	~ 108	568
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	289	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	956	-	~ 67	568
Mov Cap-2 Maneuver	-	-	-	-	~ 67	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	179	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	$ 631.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	201	-	-	956	-
HCM Lane V/C Ratio	2.285	-	-	0.38	-
HCM Control Delay (s)	$ 631.6	-	-	11.1	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	37	-	-	1.8	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	659	1	39	658	243	5	7	88	729	3	43
Future Volume (vph)	49	659	1	39	658	243	5	7	88	729	3	43
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	0.85	1.00	0.86		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1614	2866	975	1250	2866	1430	1662	1163		1490	1468	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (perm)	1614	2866	975	1250	2866	1430	1662	1163		1490	1468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	716	1	42	715	264	5	8	96	792	3	47
RTOR Reduction (vph)	0	0	1	0	0	56	0	89	0	0	2	0
Lane Group Flow (vph)	53	716	0	42	715	208	5	15	0	428	412	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	16%	50%	33%	16%	4%	0%	50%	28%	6%	20%	11%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	5	2	8	1	6	4	8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	7.3	34.9	42.9	7.5	35.1	79.2	8.0	8.0		44.1	44.1	
Effective Green, g (s)	7.3	34.9	42.9	7.5	35.1	79.2	8.0	8.0		44.1	44.1	
Actuated g/C Ratio	0.07	0.31	0.39	0.07	0.32	0.71	0.07	0.07		0.40	0.40	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.2	2.5	2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	106	901	376	84	906	1020	119	83		591	583	
v/s Ratio Prot	0.03	c0.25	0.00	c0.03	0.25	0.08	0.00	c0.01		c0.29	0.28	
v/s Ratio Perm			0.00			0.06						
v/c Ratio	0.50	0.79	0.00	0.50	0.79	0.20	0.04	0.18		0.72	0.71	
Uniform Delay, d1	50.1	34.8	20.9	49.9	34.6	5.3	47.9	48.4		28.3	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	5.3	0.0	3.4	5.0	0.1	0.1	0.8		4.1	3.6	
Delay (s)	52.8	40.1	20.9	53.3	39.6	5.4	48.0	49.2		32.4	31.6	
Level of Service	D	D	C	D	D	A	D	D		C	C	
Approach Delay (s)		40.9			31.3			49.1			32.0	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	64.5%	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												
Traffic Volume (vph)	0	1156	462	0	1077	715	0	0	0	719	0	360
Future Volume (vph)	0	1156	462	0	1077	715	0	0	0	719	0	360
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1180	471	0	1099	730	0	0	0	734	0	367
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1180	471	0	1099	730	0	0	0	734	0	358
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		59.7	100.0		45.7	100.0				31.3		45.8
Effective Green, g (s)		59.7	100.0		45.7	100.0				31.3		45.8
Actuated g/C Ratio		0.60	1.00		0.46	1.00				0.31		0.46
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1711	1255		1298	1173				848		582
v/s Ratio Prot		0.41			c0.39					c0.27		0.28
v/s Ratio Perm			0.38			c0.62						
v/c Ratio		0.69	0.38		0.85	0.62				0.87		0.62
Uniform Delay, d1		13.8	0.0		24.0	0.0				32.4		20.5
Progression Factor		1.00	1.00		1.08	1.00				1.00		1.00
Incremental Delay, d2		2.3	0.9		3.1	1.1				9.1		1.7
Delay (s)		16.1	0.9		29.1	1.1				41.5		22.1
Level of Service		B	A		C	A				D		C
Approach Delay (s)		11.8			17.9			0.0			35.0	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.1%	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												
Traffic Volume (vph)	0	1602	298	0	1375	427	396	0	680	0	0	0
Future Volume (vph)	0	1602	298	0	1375	427	396	0	680	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1107	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1107	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1669	310	0	1432	445	412	0	708	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	12	0	0	0
Lane Group Flow (vph)	0	1669	310	0	1432	445	372	362	363	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		56.7	100.0		56.7	100.0	34.3	34.3	34.3			
Effective Green, g (s)		56.7	100.0		56.7	100.0	34.3	34.3	34.3			
Actuated g/C Ratio		0.57	1.00		0.57	1.00	0.34	0.34	0.34			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1625	1234		1545	1212	463	379	388			
v/s Ratio Prot		c0.58			0.53							
v/s Ratio Perm			0.25			0.37	0.28	0.33	0.32			
v/c Ratio		1.03	0.25		0.93	0.37	0.80	0.96	0.94			
Uniform Delay, d1		21.6	0.0		19.8	0.0	29.8	32.1	31.8			
Progression Factor		1.34	1.00		0.95	1.00	1.00	1.00	1.00			
Incremental Delay, d2		26.1	0.3		5.1	0.3	9.5	34.5	29.7			
Delay (s)		55.0	0.3		23.9	0.3	39.3	66.6	61.5			
Level of Service		E	A		C	A	D	E	E			
Approach Delay (s)		46.4			18.3			55.8			0.0	
Approach LOS		D			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	86.3%	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												
Traffic Volume (vph)	82	1601	181	287	1262	14	484	24	322	22	30	73
Future Volume (vph)	82	1601	181	287	1262	14	484	24	322	22	30	73
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2835		1373	1391	1262	1511	1651	1096
Flt Permitted	0.09	1.00	1.00	0.11	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	130	2842	1316	163	2835		1373	1391	1262	1511	1651	1096
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)	85	1651	187	296	1301	14	499	25	332	23	31	75
RTOR Reduction (vph)	0	0	98	0	1	0	0	0	248	0	0	71
Lane Group Flow (vph)	85	1651	89	296	1314	0	259	265	84	23	31	5
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	51.3	36.5	36.5	51.3	44.1		25.2	25.2	25.2	6.0	6.0	6.0
Effective Green, g (s)	51.3	36.5	36.5	51.3	44.1		25.2	25.2	25.2	6.0	6.0	6.0
Actuated g/C Ratio	0.51	0.36	0.36	0.51	0.44		0.25	0.25	0.25	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	155	1037	480	268	1250		345	350	318	90	99	65
v/s Ratio Prot	0.04	c0.58		0.16	c0.46		0.19	c0.19		0.02	c0.02	
v/s Ratio Perm	0.24		0.07	0.40					0.07			0.00
v/c Ratio	0.55	1.59	0.19	1.10	1.05		0.75	0.76	0.26	0.26	0.31	0.07
Uniform Delay, d1	18.5	31.8	21.6	39.3	27.9		34.5	34.6	30.0	44.9	45.0	44.4
Progression Factor	0.85	0.95	0.95	0.79	0.69		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	267.5	0.2	52.7	25.6		8.5	8.6	0.3	1.1	1.3	0.3
Delay (s)	16.5	297.9	20.7	83.9	45.0		43.0	43.2	30.3	46.0	46.3	44.7
Level of Service	B	F	C	F	D		D	D	C	D	D	D
Approach Delay (s)		258.5			52.2			38.1			45.3	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	137.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.3%	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												
Traffic Volume (vph)	151	1784	44	33	1484	84	25	34	12	103	24	113
Future Volume (vph)	151	1784	44	33	1484	84	25	34	12	103	24	113
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2747		1471	2719		1525	1391		1385	1433	
Flt Permitted	0.08	1.00		0.09	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	131	2747		135	2719		1525	1391		1385	1433	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	157	1858	46	34	1546	88	26	35	12	107	25	118
RTOR Reduction (vph)	0	1	0	0	3	0	0	12	0	0	101	0
Lane Group Flow (vph)	157	1903	0	34	1631	0	26	36	0	107	42	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	62.7	58.5		50.1	50.1		6.0	6.7		14.1	14.8	
Effective Green, g (s)	62.7	58.5		50.1	50.1		6.0	6.7		14.1	14.8	
Actuated g/C Ratio	0.63	0.58		0.50	0.50		0.06	0.07		0.14	0.15	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	261	1606		123	1362		91	93		195	212	
v/s Ratio Prot	0.08	c0.69		0.01	c0.60		0.02	c0.03		c0.08	0.03	
v/s Ratio Perm	0.30			0.13								
v/c Ratio	0.60	1.18		0.28	1.20		0.29	0.39		0.55	0.20	
Uniform Delay, d1	35.5	20.8		21.7	24.9		45.0	44.7		40.0	37.4	
Progression Factor	0.38	1.10		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	83.8		0.9	96.1		1.3	1.9		2.5	0.3	
Delay (s)	13.9	106.6		22.6	121.1		46.2	46.6		42.5	37.7	
Level of Service	B	F		C	F		D	D		D	D	
Approach Delay (s)		99.5			119.1			46.5			39.8	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	102.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1499	277	37	1593	0	119
Future Vol, veh/h	1499	277	37	1593	0	119
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	19	17	10	23	0	24
Mvmt Flow	1595	295	39	1695	0	127

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1891	0	-	947
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	7.38
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.3	-	-	3.54
Pot Cap-1 Maneuver	-	-	282	-	0	224
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	282	-	-	224
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	40.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	224	-	-	282	-
HCM Lane V/C Ratio	0.565	-	-	0.14	-
HCM Control Delay (s)	40.1	-	-	19.8	-
HCM Lane LOS	E	-	-	C	-
HCM 95th %tile Q(veh)	3.1	-	-	0.5	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	744	476	61	836	58	359	113	42	77	167	219
Future Volume (vph)	199	744	476	61	836	58	359	113	42	77	167	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.91	1.00	1.00	0.99	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	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	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	2771	1216	1484	2748	1114	1385	1483	1357	1458	1446	1024
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	2771	1216	1484	2748	1114	1385	1483	1357	1458	1446	1024
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)	209	783	501	64	880	61	378	119	44	81	176	231
RTOR Reduction (vph)	0	0	119	0	0	39	0	0	33	0	0	195
Lane Group Flow (vph)	209	783	382	64	880	22	378	119	11	81	176	36
Confl. Peds. (#/hr)	26		26	26		26	118		2	2		118
Heavy Vehicles (%)	15%	20%	15%	12%	21%	22%	20%	18%	8%	14%	21%	20%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	23.2	64.7	90.1	9.5	51.0	51.0	25.4	34.3	34.3	12.7	21.6	21.6
Effective Green, g (s)	23.2	64.7	90.1	9.5	51.0	51.0	25.4	34.3	34.3	12.7	21.6	21.6
Actuated g/C Ratio	0.17	0.46	0.64	0.07	0.36	0.36	0.18	0.24	0.24	0.09	0.15	0.15
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	239	1278	781	100	999	405	250	362	331	132	222	157
v/s Ratio Prot	c0.14	0.28	0.09	0.04	c0.32		c0.27	0.08		0.06	c0.12	
v/s Ratio Perm			0.23			0.02			0.01			0.03
v/c Ratio	0.87	0.61	0.49	0.64	0.88	0.05	1.51	0.33	0.03	0.61	0.79	0.23
Uniform Delay, d1	57.1	28.3	13.0	63.7	41.8	29.0	57.4	43.5	40.3	61.4	57.1	52.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	1.2	0.4	11.7	9.8	0.1	250.0	0.4	0.0	7.0	16.9	0.5
Delay (s)	84.8	29.6	13.4	75.4	51.5	29.1	307.4	43.9	40.3	68.4	74.1	52.5
Level of Service	F	C	B	E	D	C	F	D	D	E	E	D
Approach Delay (s)		31.9			51.7			227.7			62.9	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	71.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	99.2%	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												
Traffic Volume (vph)	20	767	31	111	891	71	11	10	55	55	28	20
Future Volume (vph)	20	767	31	111	891	71	11	10	55	55	28	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
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	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		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)	1484	2743		1338	2709		1235	1163		1285	1461	
Flt Permitted	0.25	1.00		0.31	1.00		0.73	1.00		0.71	1.00	
Satd. Flow (perm)	398	2743		431	2709		943	1163		966	1461	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	783	32	113	909	72	11	10	56	56	29	20
RTOR Reduction (vph)	0	2	0	0	4	0	0	49	0	0	17	0
Lane Group Flow (vph)	20	813	0	113	977	0	11	17	0	56	32	0
Confl. Peds. (#/hr)	9		33	33		9	18		4	4		18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	12%	20%	27%	24%	22%	10%	33%	50%	26%	29%	4%	22%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	40.5	35.0		40.5	38.7		8.0	8.0		8.0	8.0	
Effective Green, g (s)	40.5	35.0		40.5	38.7		8.0	8.0		8.0	8.0	
Actuated g/C Ratio	0.64	0.55		0.64	0.61		0.13	0.13		0.13	0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.3		2.5	5.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	284	1511		353	1650		118	146		121	184	
v/s Ratio Prot	0.00	0.30		c0.03	c0.36			0.01			0.02	
v/s Ratio Perm	0.04			0.18			0.01			c0.06		
v/c Ratio	0.07	0.54		0.32	0.59		0.09	0.12		0.46	0.17	
Uniform Delay, d1	4.4	9.1		4.7	7.6		24.5	24.6		25.8	24.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.7		0.4	0.9		0.3	0.3		2.0	0.3	
Delay (s)	4.5	9.8		5.1	8.5		24.8	24.9		27.8	25.1	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		9.7			8.2			24.9			26.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	47.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	143	830	1030	133	62	95
Future Vol, veh/h	143	830	1030	133	62	95
Conflicting Peds, #/hr	8	0	0	8	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	130	-	-	60	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	25	21	18	18	30	24
Mvmt Flow	152	883	1096	141	66	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1104	0	-	0	1850	556
Stage 1	-	-	-	-	1104	-
Stage 2	-	-	-	-	746	-
Critical Hdwy	4.6	-	-	-	7.4	7.38
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.45	-	-	-	3.8	3.54
Pot Cap-1 Maneuver	510	-	-	-	~ 48	422
Stage 1	-	-	-	-	225	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	510	-	-	-	~ 33	419
Mov Cap-2 Maneuver	-	-	-	-	~ 33	-
Stage 1	-	-	-	-	223	-
Stage 2	-	-	-	-	253	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	$ 681.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	510	-	-	-	75
HCM Lane V/C Ratio	0.298	-	-	-	2.227
HCM Control Delay (s)	15	-	-	-	$ 681.6
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	1.2	-	-	-	15.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	51.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	675	123	95	968	10	59	6	126	10	4	77
Future Vol, veh/h	17	675	123	95	968	10	59	6	126	10	4	77
Conflicting Peds, #/hr	4	0	14	14	0	4	22	0	0	0	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	185	-	-	-	-	-	-	-	55
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	23	16	9	23	38	0	0	10	9	25	7
Mvmt Flow	19	742	135	104	1064	11	65	7	138	11	4	85

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1079	0	0	891	0	0	1626	2149	452	1694	2210	563
Stage 1	-	-	-	-	-	-	861	861	-	1282	1282	-
Stage 2	-	-	-	-	-	-	765	1288	-	412	928	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.5	6.5	7.1	7.68	7	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.5	4	3.4	3.59	4.25	3.37
Pot Cap-1 Maneuver	602	-	-	714	-	-	69	49	533	56	32	457
Stage 1	-	-	-	-	-	-	321	375	-	165	194	-
Stage 2	-	-	-	-	-	-	366	237	-	569	297	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	589	-	-	714	-	-	~ 41	40	526	31	26	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 41	40	-	31	26	-
Stage 1	-	-	-	-	-	-	307	358	-	159	165	-
Stage 2	-	-	-	-	-	-	241	202	-	398	284	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	$ 558.4	47.4
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	589	-	-	714	-	-	29	446
HCM Lane V/C Ratio	2.018	0.032	-	-	0.146	-	-	0.531	0.19
HCM Control Delay (s)	$ 558.4	11.3	-	-	10.9	-	-	225.5	15
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	17.7	0.1	-	-	0.5	-	-	1.7	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	403	261	329	294	92	247	494	156	234	966	117
Future Volume (vph)	156	403	261	329	294	92	247	494	156	234	966	117
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	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	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1312		2906	2639	1054	1374	2948	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1312		2906	2639	1054	1374	2948	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	162	420	272	343	306	96	257	515	162	244	1006	122
RTOR Reduction (vph)	0	0	197	0	8	0	0	0	114	0	7	0
Lane Group Flow (vph)	163	420	75	343	394	0	257	515	49	244	1121	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Effective Green, g (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Actuated g/C Ratio	0.20	0.23	0.23	0.20	0.23		0.11	0.30	0.30	0.12	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	278	347	285	263	307		328	781	318	163	891	
v/s Ratio Prot	0.11	0.28		c0.26	c0.30		c0.09	0.20		c0.18	c0.38	
v/s Ratio Perm			0.06						0.05			
v/c Ratio	0.59	1.21	0.26	1.30	1.28		0.78	0.66	0.15	1.50	1.26	
Uniform Delay, d1	47.5	49.8	40.6	52.2	49.8		56.1	40.0	33.2	57.2	45.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.27	0.93	0.60	1.00	1.00	
Incremental Delay, d2	3.1	118.5	0.5	161.7	149.5		7.7	2.8	0.7	253.0	125.3	
Delay (s)	50.6	168.3	41.1	214.0	199.3		78.9	40.0	20.7	310.3	170.7	
Level of Service	D	F	D	F	F		E	D	C	F	F	
Approach Delay (s)		105.4			206.0			47.3			195.5	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	142.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	26	48	44	34	46	32	9	128	12	47	242	27
Future Vol, veh/h	26	48	44	34	46	32	9	128	12	47	242	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	39	23	6	31	20	86	22	13	27	36	13	16
Mvmt Flow	28	51	47	36	49	34	10	136	13	50	257	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	10.5	10.3	14.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	22%	30%	15%
Vol Thru, %	86%	41%	41%	77%
Vol Right, %	8%	37%	29%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	118	112	316
LT Vol	9	26	34	47
Through Vol	128	48	46	242
RT Vol	12	44	32	27
Lane Flow Rate	159	126	119	336
Geometry Grp	1	1	1	1
Degree of Util (X)	0.243	0.21	0.197	0.515
Departure Headway (Hd)	5.522	6.009	5.957	5.52
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	598	603	659
Service Time	3.552	4.043	3.992	3.52
HCM Lane V/C Ratio	0.244	0.211	0.197	0.51
HCM Control Delay	10.3	10.6	10.5	14.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.9	0.8	0.7	3

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	143	62	131	147	102	141
Future Vol, veh/h	143	62	131	147	102	141
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	12	28	15	19	22	24
Mvmt Flow	168	73	154	173	120	166
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12.1	12.2	12.9
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	70%	42%
Vol Thru, %	47%	0%	58%
Vol Right, %	53%	30%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	278	205	243
LT Vol	0	143	102
Through Vol	131	0	141
RT Vol	147	62	0
Lane Flow Rate	327	241	286
Geometry Grp	1	1	1
Degree of Util (X)	0.456	0.378	0.44
Departure Headway (Hd)	5.02	5.644	5.536
Convergence, Y/N	Yes	Yes	Yes
Cap	723	637	652
Service Time	3.02	3.677	3.562
HCM Lane V/C Ratio	0.452	0.378	0.439
HCM Control Delay	12.2	12.1	12.9
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.4	1.8	2.2

Intersection	
Intersection Delay, s/veh	36.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	20	155	127	68	155	19	57	225	50	6	206	22
Future Vol, veh/h	20	155	127	68	155	19	57	225	50	6	206	22
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	25	25	31	16	25	18	30	13	28	54	20	9
Mvmt Flow	24	182	149	80	182	22	67	265	59	7	242	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	36.4	27.1	48.4	29.7
HCM LOS	E	D	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	7%	28%	3%
Vol Thru, %	68%	51%	64%	88%
Vol Right, %	15%	42%	8%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	332	302	242	234
LT Vol	57	20	68	6
Through Vol	225	155	155	206
RT Vol	50	127	19	22
Lane Flow Rate	391	355	285	275
Geometry Grp	1	1	1	1
Degree of Util (X)	0.886	0.798	0.668	0.686
Departure Headway (Hd)	8.162	8.081	8.445	8.974
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	441	448	427	402
Service Time	6.235	6.157	6.529	7.061
HCM Lane V/C Ratio	0.887	0.792	0.667	0.684
HCM Control Delay	48.4	36.4	27.1	29.7
HCM Lane LOS	E	E	D	D
HCM 95th-tile Q	9.3	7.2	4.7	5

Intersection	
Intersection Delay, s/veh	33.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	7	118	1	76	141	148	6	191	88	168	208	17
Future Vol, veh/h	7	118	1	76	141	148	6	191	88	168	208	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	20	40	38	23	14	25	15	22	19	18	24
Mvmt Flow	8	128	1	83	153	161	7	208	96	183	226	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.1	37.7	23.4	42
HCM LOS	C	E	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	6%	21%	43%
Vol Thru, %	67%	94%	39%	53%
Vol Right, %	31%	1%	41%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	126	365	393
LT Vol	6	7	76	168
Through Vol	191	118	141	208
RT Vol	88	1	148	17
Lane Flow Rate	310	137	397	427
Geometry Grp	1	1	1	1
Degree of Util (X)	0.647	0.314	0.829	0.868
Departure Headway (Hd)	7.515	8.258	7.518	7.314
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	480	433	480	496
Service Time	5.585	6.349	5.577	5.377
HCM Lane V/C Ratio	0.646	0.316	0.827	0.861
HCM Control Delay	23.4	15.1	37.7	42
HCM Lane LOS	C	C	E	E
HCM 95th-tile Q	4.5	1.3	8.1	9.2

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	148	29	81	88	52	15	196	33	68	217	26
Future Vol, veh/h	18	148	29	81	88	52	15	196	33	68	217	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	14	23	13	11	28	14	43	18	50	9	21	12
Mvmt Flow	21	174	34	95	104	61	18	231	39	80	255	31
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	15.7	16.7	18	22.4
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	9%	37%	22%
Vol Thru, %	93%	0%	76%	40%	70%
Vol Right, %	0%	100%	15%	24%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	33	195	221	311
LT Vol	15	0	18	81	68
Through Vol	196	0	148	88	217
RT Vol	0	33	29	52	26
Lane Flow Rate	248	39	229	260	366
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.536	0.071	0.448	0.498	0.673
Departure Headway (Hd)	7.776	6.587	7.026	6.891	6.625
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	462	541	509	520	542
Service Time	5.551	4.362	5.104	4.967	4.695
HCM Lane V/C Ratio	0.537	0.072	0.45	0.5	0.675
HCM Control Delay	19.3	9.9	15.7	16.7	22.4
HCM Lane LOS	C	A	C	C	C
HCM 95th-tile Q	3.1	0.2	2.3	2.7	5

Intersection	
Intersection Delay, s/veh	64.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	193	231	123	110	237	22	112	185	60	10	231	264
Future Vol, veh/h	193	231	123	110	237	22	112	185	60	10	231	264
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	49	27	21	25	37	12	14	9	21	0	21	28
Mvmt Flow	227	272	145	129	279	26	132	218	71	12	272	311
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	95.3	46.2	69.7	40.2
HCM LOS	F	E	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	38%	0%	100%	0%	100%	0%	4%	0%
Vol Thru, %	62%	0%	0%	65%	0%	92%	96%	0%
Vol Right, %	0%	100%	0%	35%	0%	8%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	60	193	354	110	259	241	264
LT Vol	112	0	193	0	110	0	10	0
Through Vol	185	0	0	231	0	237	231	0
RT Vol	0	60	0	123	0	22	0	264
Lane Flow Rate	349	71	227	416	129	305	284	311
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.992	0.181	0.703	1.153	0.386	0.878	0.759	0.8
Departure Headway (Hd)	10.717	9.691	11.14	9.965	11.208	10.833	10.094	9.711
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	342	373	325	362	324	338	360	376
Service Time	8.417	7.391	8.935	7.76	8.908	8.533	7.794	7.411
HCM Lane V/C Ratio	1.02	0.19	0.698	1.149	0.398	0.902	0.789	0.827
HCM Control Delay	80.8	14.5	36.7	127.2	20.8	57	38.5	41.7
HCM Lane LOS	F	B	E	F	C	F	E	E
HCM 95th-tile Q	11	0.7	5	16.3	1.8	8.2	6	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	55	68	151	40	52	68	1118	103	73	1449	91
Future Volume (vph)	78	55	68	151	40	52	68	1118	103	73	1449	91
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.98	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1499	1227		1478	1206	1363	2666		1458	2740	
Flt Permitted		0.55	1.00		0.59	1.00	0.06	1.00		0.14	1.00	
Satd. Flow (perm)		844	1227		904	1206	92	2666		220	2740	
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)	83	59	72	161	43	55	72	1189	110	78	1541	97
RTOR Reduction (vph)	0	0	55	0	0	42	0	5	0	0	3	0
Lane Group Flow (vph)	0	142	17	0	204	13	72	1294	0	78	1635	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4	2			6		
Actuated Green, G (s)		30.3	30.3		30.3	30.3	86.2	80.1		86.2	77.0	
Effective Green, g (s)		30.3	30.3		30.3	30.3	86.2	80.1		86.2	77.0	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.66	0.62		0.66	0.59	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		196	285		210	281	150	1642		203	1622	
v/s Ratio Prot							0.03	c0.49		0.02	c0.60	
v/s Ratio Perm		0.17	0.01		c0.23	0.01	0.28			0.24		
v/c Ratio		0.72	0.06		0.97	0.05	0.48	0.79		0.38	1.01	
Uniform Delay, d1		46.0	38.8		49.4	38.6	41.1	18.6		11.2	26.5	
Progression Factor		1.00	1.00		1.00	1.00	0.80	0.71		1.15	1.13	
Incremental Delay, d2		11.7	0.1		53.6	0.0	1.2	2.7		0.1	8.7	
Delay (s)		57.7	38.8		103.1	38.7	34.0	15.9		13.0	38.6	
Level of Service		E	D		F	D	C	B		B	D	
Approach Delay (s)		51.4			89.4			16.9			37.4	
Approach LOS		D			F			B			D	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.7%	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												
Traffic Volume (vph)	110	11	91	27	11	26	78	1143	14	17	1571	122
Future Volume (vph)	110	11	91	27	11	26	78	1143	14	17	1571	122
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1288			1406	1124	1446	2629		1289	2720	
Flt Permitted		0.82			0.73	1.00	0.05	1.00		0.17	1.00	
Satd. Flow (perm)		1078			1064	1124	75	2629		227	2720	
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)	117	12	97	29	12	28	83	1216	15	18	1671	130
RTOR Reduction (vph)	0	21	0	0	0	22	0	0	0	0	4	0
Lane Group Flow (vph)	0	205	0	0	41	6	83	1231	0	18	1797	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		26.6			26.6	26.6	89.9	82.9		89.9	81.1	
Effective Green, g (s)		26.6			26.6	26.6	89.9	82.9		89.9	81.1	
Actuated g/C Ratio		0.20			0.20	0.20	0.69	0.64		0.69	0.62	
Clearance Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		220			217	229	144	1676		214	1696	
v/s Ratio Prot							0.04	c0.47		0.00	c0.66	
v/s Ratio Perm		c0.19			0.04	0.01	0.36			0.05		
v/c Ratio		0.93			0.19	0.03	0.58	0.73		0.08	1.06	
Uniform Delay, d1		50.8			42.8	41.3	25.6	16.0		15.7	24.5	
Progression Factor		1.00			1.00	1.00	1.44	0.81		1.31	0.67	
Incremental Delay, d2		41.1			0.3	0.0	3.1	2.0		0.0	32.3	
Delay (s)		91.8			43.1	41.4	40.1	15.0		20.7	48.6	
Level of Service		F			D	D	D	B		C	D	
Approach Delay (s)		91.8			42.4			16.6			48.3	
Approach LOS		F			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.3%	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												
Traffic Volume (vph)	160	180	121	95	225	280	83	789	40	265	1251	149
Future Volume (vph)	160	180	121	95	225	280	83	789	40	265	1251	149
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			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	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1304			1457	1293	1179	2697		1374	2763	
Flt Permitted	0.30	1.00			0.47	1.00	0.10	1.00		0.26	1.00	
Satd. Flow (perm)	382	1304			697	1293	122	2697		369	2763	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	162	182	122	96	227	283	84	797	40	268	1264	151
RTOR Reduction (vph)	0	18	0	0	0	65	0	3	0	0	7	0
Lane Group Flow (vph)	162	286	0	0	323	218	84	834	0	268	1408	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.7	
Effective Green, g (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.7	
Actuated g/C Ratio	0.27	0.27			0.27	0.27	0.63	0.51		0.63	0.57	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	101	346			184	343	144	1379		352	1566	
v/s Ratio Prot		0.22					0.04	0.31		0.09	c0.51	
v/s Ratio Perm	0.42				c0.46	0.17	0.33			c0.39		
v/c Ratio	1.60	0.83			1.76	0.64	0.58	0.60		0.76	0.90	
Uniform Delay, d1	47.8	44.9			47.8	42.2	17.0	22.5		28.9	24.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.35	1.37	
Incremental Delay, d2	312.9	14.5			361.3	3.4	4.9	2.0		0.9	0.9	
Delay (s)	360.6	59.4			409.1	45.6	21.9	24.4		39.9	35.0	
Level of Service	F	E			F	D	C	C		D	C	
Approach Delay (s)		164.1			239.3			24.2			35.7	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	82.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	84	80	919	1180	237
Future Vol, veh/h	86	84	80	919	1180	237
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	35	31	25	29	16
Mvmt Flow	93	91	87	999	1283	258

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2085	772	1541	0	-	0
Stage 1	1412	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Critical Hdwy	7.22	7.6	4.72	-	-	-
Critical Hdwy Stg 1	6.22	-	-	-	-	-
Critical Hdwy Stg 2	6.22	-	-	-	-	-
Follow-up Hdwy	3.71	3.65	2.51	-	-	-
Pot Cap-1 Maneuver	~ 36	279	310	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 13	278	310	-	-	-
Mov Cap-2 Maneuver	~ 78	-	-	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	155	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	143.4		6.9		0
HCM LOS	F				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	310	-	78	278	-	-
HCM Lane V/C Ratio	0.281	-	1.198	0.328	-	-
HCM Control Delay (s)	21.1	5.7	259.8	24.2	-	-
HCM Lane LOS	C	A	F	C	-	-
HCM 95th %tile Q(veh)	1.1	-	7	1.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	54.8					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	392	115	231	340	103	233
Future Vol, veh/h	392	115	231	340	103	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	21	18	29	31	15
Mvmt Flow	408	120	241	354	107	243

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	528	0	1303	468
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	835	-
Critical Hdwy	-	-	4.28	-	6.71	6.35
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.362	-	3.779	3.435
Pot Cap-1 Maneuver	-	-	963	-	154	569
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	963	-	115	569
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	285	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4	223.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	257	-	-	963	-
HCM Lane V/C Ratio	1.362	-	-	0.25	-
HCM Control Delay (s)	223.8	-	-	10	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	18.7	-	-	1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	589	1	34	565	262	3	5	85	753	2	25
Future Volume (vph)	32	589	1	34	565	262	3	5	85	753	2	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	0.85	1.00	0.86		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1614	2866	975	1250	2866	1430	1662	1162		1490	1479	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (perm)	1614	2866	975	1250	2866	1430	1662	1162		1490	1479	
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)	35	640	1	37	614	285	3	5	92	818	2	27
RTOR Reduction (vph)	0	0	1	0	0	69	0	85	0	0	1	0
Lane Group Flow (vph)	35	640	0	37	614	216	3	12	0	425	421	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	16%	50%	33%	16%	4%	0%	50%	28%	6%	20%	11%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	5	2	8	1	6	4	8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	4.7	30.6	38.4	5.4	31.3	74.3	7.8	7.8		43.0	43.0	
Effective Green, g (s)	4.7	30.6	38.4	5.4	31.3	74.3	7.8	7.8		43.0	43.0	
Actuated g/C Ratio	0.05	0.30	0.37	0.05	0.30	0.72	0.08	0.08		0.42	0.42	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.2	2.5	2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	73	848	362	65	868	1028	125	87		620	615	
v/s Ratio Prot	0.02	c0.22	0.00	c0.03	0.21	0.09	0.00	c0.01		c0.29	0.28	
v/s Ratio Perm			0.00			0.06						
v/c Ratio	0.48	0.75	0.00	0.57	0.71	0.21	0.02	0.14		0.69	0.68	
Uniform Delay, d1	48.1	32.9	20.4	47.8	31.9	4.8	44.2	44.6		24.6	24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	4.2	0.0	9.0	2.9	0.1	0.1	0.5		2.9	2.9	
Delay (s)	51.7	37.1	20.4	56.8	34.9	4.9	44.3	45.1		27.5	27.5	
Level of Service	D	D	C	E	C	A	D	D		C	C	
Approach Delay (s)		37.9			26.6			45.1			27.5	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.5%	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												
Traffic Volume (vph)	0	1112	462	0	1081	715	0	0	0	774	0	307
Future Volume (vph)	0	1112	462	0	1081	715	0	0	0	774	0	307
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1135	471	0	1103	730	0	0	0	790	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	1135	471	0	1103	730	0	0	0	790	0	305
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		58.4	100.0		44.4	100.0				32.6		47.1
Effective Green, g (s)		58.4	100.0		44.4	100.0				32.6		47.1
Actuated g/C Ratio		0.58	1.00		0.44	1.00				0.33		0.47
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1673	1255		1261	1173				883		598
v/s Ratio Prot		0.40			c0.39					c0.29		0.24
v/s Ratio Perm			0.38			c0.62						
v/c Ratio		0.68	0.38		0.87	0.62				0.89		0.51
Uniform Delay, d1		14.3	0.0		25.3	0.0				32.1		18.4
Progression Factor		1.00	1.00		1.11	1.00				1.00		1.00
Incremental Delay, d2		2.2	0.9		3.6	1.0				11.5		0.5
Delay (s)		16.6	0.9		31.6	1.0				43.5		18.9
Level of Service		B	A		C	A				D		B
Approach Delay (s)		12.0			19.4			0.0			36.5	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
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												
Traffic Volume (vph)	0	1663	248	0	1399	472	384	0	693	0	0	0
Future Volume (vph)	0	1663	248	0	1399	472	384	0	693	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1106	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1106	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1732	258	0	1457	492	400	0	722	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	10	0	0	0
Lane Group Flow (vph)	0	1732	258	0	1457	492	360	377	365	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		56.0	100.0		56.0	100.0	35.0	35.0	35.0			
Effective Green, g (s)		56.0	100.0		56.0	100.0	35.0	35.0	35.0			
Actuated g/C Ratio		0.56	1.00		0.56	1.00	0.35	0.35	0.35			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1604	1234		1526	1212	472	387	396			
v/s Ratio Prot		c0.60			0.53							
v/s Ratio Perm			0.21			0.41	0.27	0.34	0.32			
v/c Ratio		1.08	0.21		0.95	0.41	0.76	0.97	0.92			
Uniform Delay, d1		22.0	0.0		20.8	0.0	28.8	32.0	31.2			
Progression Factor		1.36	1.00		0.95	1.00	1.00	1.00	1.00			
Incremental Delay, d2		44.4	0.3		9.0	0.5	6.9	38.4	26.4			
Delay (s)		74.3	0.3		28.7	0.5	35.7	70.4	57.6			
Level of Service		E	A		C	A	D	E	E			
Approach Delay (s)		64.7			21.6			55.0			0.0	
Approach LOS		E			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	88.7%	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												
Traffic Volume (vph)	85	1491	252	307	1143	11	556	24	291	17	35	73
Future Volume (vph)	85	1491	252	307	1143	11	556	24	291	17	35	73
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2836		1373	1389	1262	1511	1651	1096
Flt Permitted	0.10	1.00	1.00	0.12	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	143	2842	1316	181	2836		1373	1389	1262	1511	1651	1096
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)	88	1537	260	316	1178	11	573	25	300	18	36	75
RTOR Reduction (vph)	0	0	155	0	1	0	0	0	214	0	0	70
Lane Group Flow (vph)	88	1537	105	316	1188	0	298	300	86	18	36	5
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	47.5	32.8	32.8	47.5	40.1		28.8	28.8	28.8	6.2	6.2	6.2
Effective Green, g (s)	47.5	32.8	32.8	47.5	40.1		28.8	28.8	28.8	6.2	6.2	6.2
Actuated g/C Ratio	0.48	0.33	0.33	0.48	0.40		0.29	0.29	0.29	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	158	932	431	266	1137		395	400	363	93	102	67
v/s Ratio Prot	0.04	c0.54		0.17	c0.42		c0.22	0.22		0.01	c0.02	
v/s Ratio Perm	0.22		0.08	0.39					0.07			0.00
v/c Ratio	0.56	1.65	0.24	1.19	1.05		0.75	0.75	0.24	0.19	0.35	0.07
Uniform Delay, d1	19.4	33.6	24.5	39.3	29.9		32.4	32.3	27.2	44.5	45.0	44.2
Progression Factor	0.89	0.94	1.03	0.80	0.72		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	292.6	0.1	88.3	23.2		7.6	7.3	0.2	0.7	1.5	0.3
Delay (s)	17.6	324.1	25.5	119.7	44.9		40.0	39.7	27.5	45.3	46.5	44.5
Level of Service	B	F	C	F	D		D	D	C	D	D	D
Approach Delay (s)		268.6			60.6			35.7			45.2	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	143.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.1%	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												
Traffic Volume (vph)	138	1640	54	47	1391	89	31	49	18	104	32	100
Future Volume (vph)	138	1640	54	47	1391	89	31	49	18	104	32	100
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2740		1471	2718		1525	1391		1385	1449	
Flt Permitted	0.08	1.00		0.09	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	130	2740		139	2718		1525	1391		1385	1449	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	144	1708	56	49	1449	93	32	51	19	108	33	104
RTOR Reduction (vph)	0	2	0	0	4	0	0	15	0	0	92	0
Lane Group Flow (vph)	144	1762	0	49	1538	0	32	55	0	108	45	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	62.2	56.3		50.4	50.4		9.4	7.9		13.4	11.9	
Effective Green, g (s)	62.2	56.3		50.4	50.4		9.4	7.9		13.4	11.9	
Actuated g/C Ratio	0.62	0.56		0.50	0.50		0.09	0.08		0.13	0.12	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	248	1542		148	1369		143	109		185	172	
v/s Ratio Prot	0.07	c0.64		0.02	c0.57		0.02	c0.04		c0.08	0.03	
v/s Ratio Perm	0.29			0.15								
v/c Ratio	0.58	1.14		0.33	1.12		0.22	0.51		0.58	0.26	
Uniform Delay, d1	33.7	21.9		21.2	24.8		41.9	44.2		40.7	40.1	
Progression Factor	0.38	1.05		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	65.1		1.0	65.7		0.6	2.7		3.9	0.6	
Delay (s)	13.1	88.1		22.2	90.5		42.5	46.9		44.5	40.7	
Level of Service	B	F		C	F		D	D		D	D	
Approach Delay (s)		82.4			88.4			45.5			42.4	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	81.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑		↱
Traffic Vol, veh/h	1347	283	30	1519	0	117
Future Vol, veh/h	1347	283	30	1519	0	117
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	19	17	10	23	0	24
Mvmt Flow	1433	301	32	1616	0	124

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1736	0	-	869
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	7.38
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.3	-	-	3.54
Pot Cap-1 Maneuver	-	-	326	-	0	255
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	326	-	-	255
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	31.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	255	-	-	326	-
HCM Lane V/C Ratio	0.488	-	-	0.098	-
HCM Control Delay (s)	31.9	-	-	17.2	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	2.5	-	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	750	428	71	860	69	328	119	49	92	177	206
Future Volume (vph)	183	750	428	71	860	69	328	119	49	92	177	206
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.91	1.00	1.00	0.99	1.00	1.00	0.82
Flpb, ped/bikes	1.00	1.00	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	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	2771	1215	1484	2748	1114	1385	1483	1357	1458	1446	1022
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	2771	1215	1484	2748	1114	1385	1483	1357	1458	1446	1022
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)	193	789	451	75	905	73	345	125	52	97	186	217
RTOR Reduction (vph)	0	0	112	0	0	46	0	0	40	0	0	183
Lane Group Flow (vph)	193	789	339	75	905	27	345	125	12	97	186	34
Confl. Peds. (#/hr)	26		26	26		26	118		2	2		118
Heavy Vehicles (%)	15%	20%	15%	12%	21%	22%	20%	18%	8%	14%	21%	20%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	22.1	64.0	89.3	10.4	52.3	52.3	25.3	33.4	33.4	14.3	22.4	22.4
Effective Green, g (s)	22.1	64.0	89.3	10.4	52.3	52.3	25.3	33.4	33.4	14.3	22.4	22.4
Actuated g/C Ratio	0.16	0.45	0.63	0.07	0.37	0.37	0.18	0.24	0.24	0.10	0.16	0.16
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	226	1256	768	109	1018	412	248	351	321	147	229	162
v/s Ratio Prot	c0.13	0.28	0.08	0.05	c0.33		c0.25	0.08		0.07	c0.13	
v/s Ratio Perm			0.20			0.02			0.01			0.03
v/c Ratio	0.85	0.63	0.44	0.69	0.89	0.07	1.39	0.36	0.04	0.66	0.81	0.21
Uniform Delay, d1	57.9	29.5	13.2	63.8	41.7	28.6	57.9	44.9	41.5	61.1	57.3	51.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.2	1.3	0.3	15.2	10.2	0.1	198.9	0.5	0.0	9.2	18.8	0.5
Delay (s)	83.2	30.8	13.5	79.0	51.9	28.8	256.8	45.3	41.5	70.2	76.2	52.2
Level of Service	F	C	B	E	D	C	F	D	D	E	E	D
Approach Delay (s)		32.4			52.2			184.7			64.6	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	65.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	141.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	97.1%	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												
Traffic Volume (vph)	22	792	32	108	932	73	12	11	55	54	27	21
Future Volume (vph)	22	792	32	108	932	73	12	11	55	54	27	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
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	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		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)	1484	2743		1338	2710		1235	1163		1285	1450	
Flt Permitted	0.24	1.00		0.30	1.00		0.73	1.00		0.71	1.00	
Satd. Flow (perm)	376	2743		417	2710		942	1163		965	1450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	22	808	33	110	951	74	12	11	56	55	28	21
RTOR Reduction (vph)	0	2	0	0	3	0	0	49	0	0	18	0
Lane Group Flow (vph)	22	839	0	110	1022	0	12	18	0	55	31	0
Confl. Peds. (#/hr)	9		33	33		9	18		4	4		18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	12%	20%	27%	24%	22%	10%	33%	50%	26%	29%	4%	22%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	41.9	36.4		41.9	40.1		8.0	8.0		8.0	8.0	
Effective Green, g (s)	41.9	36.4		41.9	40.1		8.0	8.0		8.0	8.0	
Actuated g/C Ratio	0.65	0.56		0.65	0.62		0.12	0.12		0.12	0.12	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.3		2.5	5.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	273	1538		347	1674		116	143		118	178	
v/s Ratio Prot	0.00	0.31		c0.03	c0.38			0.02			0.02	
v/s Ratio Perm	0.05			0.18			0.01			c0.06		
v/c Ratio	0.08	0.55		0.32	0.61		0.10	0.13		0.47	0.17	
Uniform Delay, d1	4.4	9.0		4.6	7.6		25.3	25.3		26.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.8		0.4	1.0		0.3	0.3		2.1	0.3	
Delay (s)	4.5	9.8		5.0	8.6		25.6	25.6		28.6	25.8	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		9.6			8.3			25.6			27.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	53.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	148	851	1067	125	59	100
Future Vol, veh/h	148	851	1067	125	59	100
Conflicting Peds, #/hr	8	0	0	8	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	130	-	-	60	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	25	21	18	18	30	24
Mvmt Flow	157	905	1135	133	63	106

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1143	0	-	0	1911	576
Stage 1	-	-	-	-	1143	-
Stage 2	-	-	-	-	768	-
Critical Hdwy	4.6	-	-	-	7.4	7.38
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.45	-	-	-	3.8	3.54
Pot Cap-1 Maneuver	491	-	-	-	~ 43	409
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	353	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	491	-	-	-	~ 29	406
Mov Cap-2 Maneuver	-	-	-	-	~ 29	-
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	238	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	$ 772
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	491	-	-	-	70
HCM Lane V/C Ratio	0.321	-	-	-	2.416
HCM Control Delay (s)	15.8	-	-	-	$ 772
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	1.4	-	-	-	16.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	48.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	698	117	99	998	10	53	5	125	11	4	76
Future Vol, veh/h	17	698	117	99	998	10	53	5	125	11	4	76
Conflicting Peds, #/hr	4	0	14	14	0	4	22	0	0	0	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	185	-	-	-	-	-	-	-	55
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	23	16	9	23	38	0	0	10	9	25	7
Mvmt Flow	19	767	129	109	1097	11	58	5	137	12	4	84

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1112	0	0	910	0	0	1673	2212	462	1748	2271	580
Stage 1	-	-	-	-	-	-	883	883	-	1324	1324	-
Stage 2	-	-	-	-	-	-	790	1329	-	424	947	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.5	6.5	7.1	7.68	7	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.5	4	3.4	3.59	4.25	3.37
Pot Cap-1 Maneuver	585	-	-	702	-	-	64	45	525	51	29	445
Stage 1	-	-	-	-	-	-	311	367	-	155	184	-
Stage 2	-	-	-	-	-	-	354	226	-	560	290	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	573	-	-	702	-	-	~ 37	36	518	28	23	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 37	36	-	28	23	-
Stage 1	-	-	-	-	-	-	297	350	-	149	155	-
Stage 2	-	-	-	-	-	-	230	190	-	392	277	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	$ 549.4	58.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	101	573	-	-	702	-	-	26	434
HCM Lane V/C Ratio	1.991	0.033	-	-	0.155	-	-	0.634	0.192
HCM Control Delay (s)	$ 549.4	11.5	-	-	11.1	-	-	276.2	15.3
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	17	0.1	-	-	0.5	-	-	2	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	414	260	307	310	93	248	478	144	235	939	129
Future Volume (vph)	169	414	260	307	310	93	248	478	144	235	939	129
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	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	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1315		2906	2639	1054	1374	2939	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1315		2906	2639	1054	1374	2939	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	176	431	271	320	323	97	258	498	150	245	978	134
RTOR Reduction (vph)	0	0	191	0	8	0	0	0	105	0	8	0
Lane Group Flow (vph)	176	431	80	320	412	0	258	498	45	245	1104	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Effective Green, g (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Actuated g/C Ratio	0.20	0.23	0.23	0.20	0.23		0.11	0.30	0.30	0.12	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	278	347	285	263	308		328	781	318	163	888	
v/s Ratio Prot	0.12	0.29		c0.24	c0.31		c0.09	0.19		c0.18	c0.38	
v/s Ratio Perm			0.07						0.04			
v/c Ratio	0.63	1.24	0.28	1.22	1.34		0.79	0.64	0.14	1.50	1.24	
Uniform Delay, d1	48.0	49.8	40.7	52.2	49.8		56.1	39.7	33.1	57.2	45.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.27	0.91	0.54	1.00	1.00	
Incremental Delay, d2	4.7	131.1	0.6	127.0	171.8		8.1	2.7	0.6	255.6	118.8	
Delay (s)	52.6	180.8	41.3	179.3	221.5		79.3	39.0	18.5	312.9	164.2	
Level of Service	D	F	D	F	F		E	D	B	F	F	
Approach Delay (s)		112.1			203.3			47.1			191.0	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	141.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	25	48	45	33	45	30	9	130	13	46	242	27
Future Vol, veh/h	25	48	45	33	45	30	9	130	13	46	242	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	39	23	6	31	20	86	22	13	27	36	13	16
Mvmt Flow	27	51	48	35	48	32	10	138	14	49	257	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	10.4	10.3	14.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	21%	31%	15%
Vol Thru, %	86%	41%	42%	77%
Vol Right, %	9%	38%	28%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	152	118	108	315
LT Vol	9	25	33	46
Through Vol	130	48	45	242
RT Vol	13	45	30	27
Lane Flow Rate	162	126	115	335
Geometry Grp	1	1	1	1
Degree of Util (X)	0.247	0.209	0.19	0.513
Departure Headway (Hd)	5.501	5.995	5.963	5.508
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	599	602	660
Service Time	3.529	4.03	3.999	3.508
HCM Lane V/C Ratio	0.248	0.21	0.191	0.508
HCM Control Delay	10.3	10.6	10.4	14.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1	0.8	0.7	2.9

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	137	62	131	143	103	139
Future Vol, veh/h	137	62	131	143	103	139
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	12	28	15	19	22	24
Mvmt Flow	161	73	154	168	121	164
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11.9	11.9	12.7
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	69%	43%
Vol Thru, %	48%	0%	57%
Vol Right, %	52%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	274	199	242
LT Vol	0	137	103
Through Vol	131	0	139
RT Vol	143	62	0
Lane Flow Rate	322	234	285
Geometry Grp	1	1	1
Degree of Util (X)	0.446	0.365	0.436
Departure Headway (Hd)	4.983	5.617	5.516
Convergence, Y/N	Yes	Yes	Yes
Cap	725	641	655
Service Time	2.992	3.647	3.525
HCM Lane V/C Ratio	0.444	0.365	0.435
HCM Control Delay	11.9	11.9	12.7
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.3	1.7	2.2

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	24	151	56	54	146	41	22	210	37	12	198	25
Future Vol, veh/h	24	151	56	54	146	41	22	210	37	12	198	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	25	25	31	16	25	18	30	13	28	54	20	9
Mvmt Flow	28	178	66	64	172	48	26	247	44	14	233	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.6	18.9	21.7	21.2
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	10%	22%	5%
Vol Thru, %	78%	65%	61%	84%
Vol Right, %	14%	24%	17%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	269	231	241	235
LT Vol	22	24	54	12
Through Vol	210	151	146	198
RT Vol	37	56	41	25
Lane Flow Rate	316	272	284	276
Geometry Grp	1	1	1	1
Degree of Util (X)	0.628	0.543	0.558	0.587
Departure Headway (Hd)	7.149	7.195	7.083	7.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	500	497	505	470
Service Time	5.246	5.293	5.179	5.744
HCM Lane V/C Ratio	0.632	0.547	0.562	0.587
HCM Control Delay	21.7	18.6	18.9	21.2
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	4.3	3.2	3.4	3.7

Intersection	
Intersection Delay, s/veh	23.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	192	3	67	174	102	9	171	73	104	180	21
Future Vol, veh/h	12	192	3	67	174	102	9	171	73	104	180	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	20	40	38	23	14	25	15	22	19	18	24
Mvmt Flow	13	209	3	73	189	111	10	186	79	113	196	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.1	30.4	19.9	24.5
HCM LOS	C	D	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	6%	20%	34%
Vol Thru, %	68%	93%	51%	59%
Vol Right, %	29%	1%	30%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	207	343	305
LT Vol	9	12	67	104
Through Vol	171	192	174	180
RT Vol	73	3	102	21
Lane Flow Rate	275	225	373	332
Geometry Grp	1	1	1	1
Degree of Util (X)	0.568	0.47	0.762	0.676
Departure Headway (Hd)	7.433	7.517	7.361	7.345
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	484	479	492	491
Service Time	5.493	5.58	5.413	5.401
HCM Lane V/C Ratio	0.568	0.47	0.758	0.676
HCM Control Delay	19.9	17.1	30.4	24.5
HCM Lane LOS	C	C	D	C
HCM 95th-tile Q	3.5	2.5	6.6	5

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	134	25	75	87	50	13	168	29	62	187	24
Future Vol, veh/h	16	134	25	75	87	50	13	168	29	62	187	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	14	23	13	11	28	14	43	18	50	9	21	12
Mvmt Flow	19	158	29	88	102	59	15	198	34	73	220	28
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	13.5	14.4	14.9	17
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	9%	35%	23%
Vol Thru, %	93%	0%	77%	41%	68%
Vol Right, %	0%	100%	14%	24%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	181	29	175	212	273
LT Vol	13	0	16	75	62
Through Vol	168	0	134	87	187
RT Vol	0	29	25	50	24
Lane Flow Rate	213	34	206	249	321
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.437	0.059	0.374	0.442	0.56
Departure Headway (Hd)	7.384	6.199	6.532	6.374	6.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	488	577	550	564	578
Service Time	5.13	3.945	4.583	4.422	4.279
HCM Lane V/C Ratio	0.436	0.059	0.375	0.441	0.555
HCM Control Delay	15.8	9.3	13.5	14.4	17
HCM Lane LOS	C	A	B	B	C
HCM 95th-tile Q	2.2	0.2	1.7	2.2	3.4

Intersection	
Intersection Delay, s/veh	44.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	177	178	110	156	9	152	149	66	5	195	146
Future Vol, veh/h	109	177	178	110	156	9	152	149	66	5	195	146
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	49	27	21	25	37	12	14	9	21	0	21	28
Mvmt Flow	128	208	209	129	184	11	179	175	78	6	229	172
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	69.6	21.6	50.5	21.8
HCM LOS	F	C	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	50%	0%	100%	0%	100%	0%	3%	0%
Vol Thru, %	50%	0%	0%	50%	0%	95%	97%	0%
Vol Right, %	0%	100%	0%	50%	0%	5%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	301	66	109	355	110	165	200	146
LT Vol	152	0	109	0	110	0	5	0
Through Vol	149	0	0	177	0	156	195	0
RT Vol	0	66	0	178	0	9	0	146
Lane Flow Rate	354	78	128	418	129	194	235	172
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.915	0.18	0.364	1.038	0.364	0.528	0.593	0.415
Departure Headway (Hd)	9.561	8.478	10.219	8.943	10.393	10.042	9.328	8.956
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	426	355	409	348	361	391	405
Service Time	7.261	6.178	7.875	6.599	8.093	7.742	7.028	6.656
HCM Lane V/C Ratio	0.927	0.183	0.361	1.022	0.371	0.537	0.601	0.425
HCM Control Delay	58.7	13	18.6	85.2	18.9	23.4	24.7	17.9
HCM Lane LOS	F	B	C	F	C	C	C	C
HCM 95th-tile Q	9.5	0.6	1.6	13.5	1.6	2.9	3.7	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	56	67	150	41	52	68	1086	102	73	1396	90
Future Volume (vph)	78	56	67	150	41	52	68	1086	102	73	1396	90
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.98	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1500	1227		1478	1206	1363	2666		1458	2740	
Flt Permitted		0.55	1.00		0.59	1.00	0.07	1.00		0.15	1.00	
Satd. Flow (perm)		846	1227		903	1206	107	2666		233	2740	
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)	83	60	71	160	44	55	72	1155	109	78	1485	96
RTOR Reduction (vph)	0	0	54	0	0	42	0	5	0	0	3	0
Lane Group Flow (vph)	0	143	17	0	204	13	72	1259	0	78	1578	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4	2			6		
Actuated Green, G (s)		30.3	30.3		30.3	30.3	86.2	80.1		86.2	77.0	
Effective Green, g (s)		30.3	30.3		30.3	30.3	86.2	80.1		86.2	77.0	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.66	0.62		0.66	0.59	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		197	285		210	281	159	1642		211	1622	
v/s Ratio Prot							0.03	c0.47		0.02	c0.58	
v/s Ratio Perm		0.17	0.01		c0.23	0.01	0.27			0.23		
v/c Ratio		0.73	0.06		0.97	0.05	0.45	0.77		0.37	0.97	
Uniform Delay, d1		46.0	38.8		49.4	38.6	39.6	18.2		10.9	25.5	
Progression Factor		1.00	1.00		1.00	1.00	0.77	0.71		1.07	1.10	
Incremental Delay, d2		11.8	0.1		53.6	0.0	1.1	2.5		0.1	2.9	
Delay (s)		57.8	38.8		103.1	38.7	31.5	15.4		11.7	31.0	
Level of Service		E	D		F	D	C	B		B	C	
Approach Delay (s)		51.5			89.4			16.3			30.0	
Approach LOS		D			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.1%	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												
Traffic Volume (vph)	105	11	91	28	10	25	76	1114	15	16	1527	113
Future Volume (vph)	105	11	91	28	10	25	76	1114	15	16	1527	113
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1286			1419	1124	1446	2628		1289	2722	
Flt Permitted		0.82			0.72	1.00	0.06	1.00		0.18	1.00	
Satd. Flow (perm)		1079			1058	1124	90	2628		239	2722	
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)	112	12	97	30	11	27	81	1185	16	17	1624	120
RTOR Reduction (vph)	0	22	0	0	0	22	0	1	0	0	3	0
Lane Group Flow (vph)	0	199	0	0	41	5	81	1200	0	17	1741	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		26.2			26.2	26.2	90.3	83.3		90.3	81.7	
Effective Green, g (s)		26.2			26.2	26.2	90.3	83.3		90.3	81.7	
Actuated g/C Ratio		0.20			0.20	0.20	0.69	0.64		0.69	0.63	
Clearance Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		217			213	226	152	1683		222	1710	
v/s Ratio Prot							0.04	c0.46		0.00	c0.64	
v/s Ratio Perm		c0.18			0.04	0.00	0.33			0.05		
v/c Ratio		0.92			0.19	0.02	0.53	0.71		0.08	1.02	
Uniform Delay, d1		50.8			43.1	41.6	19.7	15.4		14.9	24.1	
Progression Factor		1.00			1.00	1.00	1.55	0.80		1.32	0.66	
Incremental Delay, d2		38.3			0.3	0.0	2.0	1.9		0.0	18.6	
Delay (s)		89.1			43.4	41.7	32.5	14.2		19.6	34.4	
Level of Service		F			D	D	C	B		B	C	
Approach Delay (s)		89.1			42.7			15.3			34.3	
Approach LOS		F			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.3%	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												
Traffic Volume (vph)	149	180	120	99	221	277	81	773	42	262	1225	137
Future Volume (vph)	149	180	120	99	221	277	81	773	42	262	1225	137
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			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	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1305			1453	1293	1179	2695		1374	2767	
Flt Permitted	0.30	1.00			0.46	1.00	0.11	1.00		0.26	1.00	
Satd. Flow (perm)	382	1305			682	1293	134	2695		378	2767	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	151	182	121	100	223	280	82	781	42	265	1237	138
RTOR Reduction (vph)	0	18	0	0	0	65	0	3	0	0	6	0
Lane Group Flow (vph)	151	285	0	0	323	215	82	820	0	265	1369	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.8	
Effective Green, g (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.8	
Actuated g/C Ratio	0.27	0.27			0.27	0.27	0.63	0.51		0.63	0.57	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	101	346			180	343	150	1378		357	1570	
v/s Ratio Prot		0.22					0.03	0.30		0.09	c0.49	
v/s Ratio Perm	0.40				c0.47	0.17	0.31			c0.38		
v/c Ratio	1.50	0.82			1.79	0.63	0.55	0.60		0.74	0.87	
Uniform Delay, d1	47.8	44.9			47.8	42.1	15.9	22.3		28.6	24.1	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.34	1.36	
Incremental Delay, d2	267.6	14.3			378.8	3.1	3.2	1.9		1.9	1.8	
Delay (s)	315.3	59.1			426.6	45.2	19.1	24.2		40.3	34.4	
Level of Service	F	E			F	D	B	C		D	C	
Approach Delay (s)		144.3			249.5			23.7			35.4	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	82.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	79	76	910	1175	218
Future Vol, veh/h	78	79	76	910	1175	218
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	35	31	25	29	16
Mvmt Flow	85	86	83	989	1277	237

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2057	759	1515	0	-	0
Stage 1	1397	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	7.22	7.6	4.72	-	-	-
Critical Hdwy Stg 1	6.22	-	-	-	-	-
Critical Hdwy Stg 2	6.22	-	-	-	-	-
Follow-up Hdwy	3.71	3.65	2.51	-	-	-
Pot Cap-1 Maneuver	~ 38	285	319	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	284	319	-	-	-
Mov Cap-2 Maneuver	86	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	180	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	101.1	6.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	319	-	86	284	-	-
HCM Lane V/C Ratio	0.259	-	0.986	0.302	-	-
HCM Control Delay (s)	20.2	5	180	23.1	-	-
HCM Lane LOS	C	A	F	C	-	-
HCM 95th %tile Q(veh)	1	-	5.6	1.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	66.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	119	258	343	101	244
Future Vol, veh/h	389	119	258	343	101	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	15	21	18	29	31	15
Mvmt Flow	405	124	269	357	105	254

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	529	0	1362	467
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	895	-
Critical Hdwy	-	-	4.28	-	6.71	6.35
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.362	-	3.779	3.435
Pot Cap-1 Maneuver	-	-	962	-	141	570
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	355	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	962	-	~ 102	570
Mov Cap-2 Maneuver	-	-	-	-	~ 102	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	256	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.4	274.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	243	-	-	962	-
HCM Lane V/C Ratio	1.479	-	-	0.279	-
HCM Control Delay (s)	274.1	-	-	10.2	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	21	-	-	1.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	584	1	33	593	257	3	5	79	744	2	28
Future Volume (vph)	33	584	1	33	593	257	3	5	79	744	2	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	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	1.00	0.85	1.00	0.86		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1614	2866	975	1250	2866	1430	1662	1162		1490	1477	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (perm)	1614	2866	975	1250	2866	1430	1662	1162		1490	1477	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	635	1	36	645	279	3	5	86	809	2	30
RTOR Reduction (vph)	0	0	1	0	0	65	0	80	0	0	1	0
Lane Group Flow (vph)	36	635	0	36	645	214	3	11	0	421	419	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	16%	50%	33%	16%	4%	0%	50%	28%	6%	20%	11%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA		Split	NA	
Protected Phases	5	2	8	1	6	4	8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	4.7	30.4	38.1	5.3	31.0	73.3	7.7	7.7		42.3	42.3	
Effective Green, g (s)	4.7	30.4	38.1	5.3	31.0	73.3	7.7	7.7		42.3	42.3	
Actuated g/C Ratio	0.05	0.30	0.37	0.05	0.30	0.72	0.08	0.08		0.41	0.41	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.2	2.5	2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	74	852	363	64	869	1025	125	87		616	611	
v/s Ratio Prot	0.02	0.22	0.00	c0.03	c0.23	0.09	0.00	c0.01		0.28	c0.28	
v/s Ratio Perm			0.00			0.06						
v/c Ratio	0.49	0.75	0.00	0.56	0.74	0.21	0.02	0.13		0.68	0.69	
Uniform Delay, d1	47.6	32.4	20.1	47.3	32.0	4.8	43.8	44.1		24.5	24.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	3.9	0.0	8.9	3.8	0.1	0.1	0.5		2.9	2.9	
Delay (s)	51.2	36.3	20.1	56.2	35.8	4.9	43.8	44.6		27.3	27.4	
Level of Service	D	D	C	E	D	A	D	D		C	C	
Approach Delay (s)		37.1			27.6			44.6			27.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.4%	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												
Traffic Volume (vph)	0	1091	462	0	1081	715	0	0	0	774	0	307
Future Volume (vph)	0	1091	462	0	1081	715	0	0	0	774	0	307
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		4.5
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)		2866	1255		2842	1173				2710		1271
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		2866	1255		2842	1173				2710		1271
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1113	471	0	1103	730	0	0	0	790	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	1113	471	0	1103	730	0	0	0	790	0	305
Confl. Peds. (#/hr)	5		2	2		5	1					1
Heavy Vehicles (%)	0%	16%	16%	0%	17%	24%	0%	0%	0%	19%	0%	17%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		58.4	100.0		44.4	100.0				32.6		47.1
Effective Green, g (s)		58.4	100.0		44.4	100.0				32.6		47.1
Actuated g/C Ratio		0.58	1.00		0.44	1.00				0.33		0.47
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1673	1255		1261	1173				883		598
v/s Ratio Prot		0.39			c0.39					c0.29		0.24
v/s Ratio Perm			0.38			c0.62						
v/c Ratio		0.67	0.38		0.87	0.62				0.89		0.51
Uniform Delay, d1		14.2	0.0		25.3	0.0				32.1		18.4
Progression Factor		1.00	1.00		1.10	1.00				1.00		1.00
Incremental Delay, d2		2.1	0.9		3.7	1.0				11.5		0.5
Delay (s)		16.3	0.9		31.5	1.0				43.5		18.9
Level of Service		B	A		C	A				D		B
Approach Delay (s)		11.7			19.4			0.0			36.5	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.8%	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												
Traffic Volume (vph)	0	1642	248	0	1398	472	385	0	692	0	0	0
Future Volume (vph)	0	1642	248	0	1398	472	385	0	692	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	0.99	0.99			
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	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		2866	1234		2725	1212	1350	1106	1132			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		2866	1234		2725	1212	1350	1106	1132			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1710	258	0	1456	492	401	0	721	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	10	0	0	0
Lane Group Flow (vph)	0	1710	258	0	1456	492	361	376	365	0	0	0
Confl. Peds. (#/hr)	4		3	3		4			2	2		
Heavy Vehicles (%)	0%	16%	18%	0%	22%	20%	17%	0%	23%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		56.1	100.0		56.1	100.0	34.9	34.9	34.9			
Effective Green, g (s)		56.1	100.0		56.1	100.0	34.9	34.9	34.9			
Actuated g/C Ratio		0.56	1.00		0.56	1.00	0.35	0.35	0.35			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1607	1234		1528	1212	471	385	395			
v/s Ratio Prot		c0.60			0.53							
v/s Ratio Perm			0.21			0.41	0.27	0.34	0.32			
v/c Ratio		1.06	0.21		0.95	0.41	0.77	0.98	0.92			
Uniform Delay, d1		21.9	0.0		20.7	0.0	28.9	32.1	31.3			
Progression Factor		1.38	1.00		0.95	1.00	1.00	1.00	1.00			
Incremental Delay, d2		38.5	0.3		8.7	0.5	7.0	39.0	26.8			
Delay (s)		68.8	0.3		28.4	0.5	35.9	71.2	58.1			
Level of Service		E	A		C	A	D	E	E			
Approach Delay (s)		59.8			21.4			55.5			0.0	
Approach LOS		E			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	88.0%	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												
Traffic Volume (vph)	84	1468	256	316	1144	11	556	24	290	17	36	72
Future Volume (vph)	84	1468	256	316	1144	11	556	24	290	17	36	72
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	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	0.98	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1363	2842	1316	1409	2836		1373	1389	1262	1511	1651	1096
Flt Permitted	0.10	1.00	1.00	0.12	1.00		0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	143	2842	1316	182	2836		1373	1389	1262	1511	1651	1096
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)	87	1513	264	326	1179	11	573	25	299	18	37	74
RTOR Reduction (vph)	0	0	160	0	1	0	0	0	213	0	0	69
Lane Group Flow (vph)	87	1513	104	326	1189	0	298	300	86	18	37	5
Confl. Peds. (#/hr)	3					3	1		4	4		1
Heavy Vehicles (%)	22%	17%	13%	18%	17%	23%	15%	8%	16%	10%	6%	34%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	6		2	2					8			4
Actuated Green, G (s)	47.4	32.6	32.6	47.4	40.0		28.8	28.8	28.8	6.3	6.3	6.3
Effective Green, g (s)	47.4	32.6	32.6	47.4	40.0		28.8	28.8	28.8	6.3	6.3	6.3
Actuated g/C Ratio	0.47	0.33	0.33	0.47	0.40		0.29	0.29	0.29	0.06	0.06	0.06
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	6.2	6.2	2.5	6.2		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	158	926	429	267	1134		395	400	363	95	104	69
v/s Ratio Prot	0.04	c0.53		c0.18	0.42		c0.22	0.22		0.01	c0.02	
v/s Ratio Perm	0.22		0.08	0.40					0.07			0.00
v/c Ratio	0.55	1.63	0.24	1.22	1.05		0.75	0.75	0.24	0.19	0.36	0.07
Uniform Delay, d1	19.4	33.7	24.7	39.2	30.0		32.4	32.3	27.2	44.4	44.9	44.1
Progression Factor	0.89	0.94	1.04	0.81	0.73		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	285.7	0.1	102.7	24.7		7.6	7.3	0.2	0.7	1.5	0.3
Delay (s)	17.7	317.5	25.8	134.3	46.6		40.0	39.7	27.5	45.1	46.4	44.4
Level of Service	B	F	C	F	D		D	D	C	D	D	D
Approach Delay (s)		262.2			65.4			35.7			45.1	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	142.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.0%	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												
Traffic Volume (vph)	143	1618	48	38	1391	85	33	49	17	102	28	108
Future Volume (vph)	143	1618	48	38	1391	85	33	49	17	102	28	108
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5		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	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	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1554	2743		1471	2719		1525	1393		1385	1440	
Flt Permitted	0.08	1.00		0.09	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	131	2743		136	2719		1525	1393		1385	1440	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	149	1685	50	40	1449	89	34	51	18	106	29	112
RTOR Reduction (vph)	0	2	0	0	4	0	0	14	0	0	100	0
Lane Group Flow (vph)	149	1733	0	40	1534	0	34	55	0	106	42	0
Confl. Peds. (#/hr)	2		1	1		2						
Heavy Vehicles (%)	7%	20%	42%	13%	22%	6%	9%	21%	20%	20%	7%	7%
Turn Type	D.P+P	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			6								
Actuated Green, G (s)	62.3	57.9		49.8	49.8		9.4	7.9		13.3	11.8	
Effective Green, g (s)	62.3	57.9		49.8	49.8		9.4	7.9		13.3	11.8	
Actuated g/C Ratio	0.62	0.58		0.50	0.50		0.09	0.08		0.13	0.12	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	6.2		2.5	6.2		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	259	1588		126	1354		143	110		184	169	
v/s Ratio Prot	0.07	c0.63		0.01	c0.56		0.02	c0.04		c0.08	0.03	
v/s Ratio Perm	0.29			0.14								
v/c Ratio	0.58	1.09		0.32	1.13		0.24	0.50		0.58	0.25	
Uniform Delay, d1	33.5	21.1		21.7	25.1		42.0	44.2		40.7	40.1	
Progression Factor	0.38	1.11		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	42.4		1.1	69.7		0.6	2.6		3.5	0.6	
Delay (s)	12.9	65.7		22.8	94.8		42.6	46.8		44.3	40.6	
Level of Service	B	E		C	F		D	D		D	D	
Approach Delay (s)		61.5			93.0			45.4			42.2	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	72.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1337	274	29	1501	0	117
Future Vol, veh/h	1337	274	29	1501	0	117
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	19	17	10	23	0	24
Mvmt Flow	1422	291	31	1597	0	124

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1716	0	-	859
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	7.38
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.3	-	-	3.54
Pot Cap-1 Maneuver	-	-	332	-	0	259
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	332	-	-	259
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	31.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	259	-	-	332	-
HCM Lane V/C Ratio	0.481	-	-	0.093	-
HCM Control Delay (s)	31.1	-	-	17	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	2.4	-	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	749	421	72	858	70	324	119	49	93	176	201
Future Volume (vph)	181	749	421	72	858	70	324	119	49	93	176	201
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.91	1.00	1.00	0.99	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	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	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	2771	1217	1484	2748	1115	1385	1483	1357	1458	1446	1025
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	2771	1217	1484	2748	1115	1385	1483	1357	1458	1446	1025
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)	191	788	443	76	903	74	341	125	52	98	185	212
RTOR Reduction (vph)	0	0	117	0	0	47	0	0	40	0	0	178
Lane Group Flow (vph)	191	788	326	76	903	27	341	125	12	98	185	34
Confl. Peds. (#/hr)	26		26	26		26	118		2	2		118
Heavy Vehicles (%)	15%	20%	15%	12%	21%	22%	20%	18%	8%	14%	21%	20%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	22.0	60.6	86.0	12.2	50.8	50.8	25.4	33.3	33.3	14.4	22.3	22.3
Effective Green, g (s)	22.0	60.6	86.0	12.2	50.8	50.8	25.4	33.3	33.3	14.4	22.3	22.3
Actuated g/C Ratio	0.16	0.43	0.62	0.09	0.36	0.36	0.18	0.24	0.24	0.10	0.16	0.16
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	228	1203	750	129	1000	406	252	354	323	150	231	163
v/s Ratio Prot	c0.13	0.28	0.08	0.05	c0.33		c0.25	0.08		0.07	c0.13	
v/s Ratio Perm			0.19			0.02			0.01			0.03
v/c Ratio	0.84	0.66	0.43	0.59	0.90	0.07	1.35	0.35	0.04	0.65	0.80	0.21
Uniform Delay, d1	57.0	31.2	14.0	61.2	42.0	28.9	57.0	44.1	40.8	60.1	56.5	50.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	1.7	0.3	5.6	11.8	0.1	182.7	0.4	0.0	8.8	17.3	0.5
Delay (s)	79.3	32.9	14.3	66.8	53.8	29.0	239.8	44.6	40.8	68.9	73.8	51.4
Level of Service	E	C	B	E	D	C	F	D	D	E	E	D
Approach Delay (s)		33.3			53.0			172.7			63.2	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	64.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	139.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	96.7%	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												
Traffic Volume (vph)	21	794	32	108	933	71	12	10	55	55	27	21
Future Volume (vph)	21	794	32	108	933	71	12	10	55	55	27	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
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	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		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)	1484	2743		1338	2710		1235	1163		1285	1450	
Flt Permitted	0.24	1.00		0.29	1.00		0.73	1.00		0.71	1.00	
Satd. Flow (perm)	376	2743		415	2710		942	1163		966	1450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	810	33	110	952	72	12	10	56	56	28	21
RTOR Reduction (vph)	0	2	0	0	3	0	0	49	0	0	18	0
Lane Group Flow (vph)	21	841	0	110	1021	0	12	17	0	56	31	0
Confl. Peds. (#/hr)	9		33	33		9	18		4	4		18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	12%	20%	27%	24%	22%	10%	33%	50%	26%	29%	4%	22%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	42.0	36.5		42.0	40.2		8.1	8.1		8.1	8.1	
Effective Green, g (s)	42.0	36.5		42.0	40.2		8.1	8.1		8.1	8.1	
Actuated g/C Ratio	0.65	0.56		0.65	0.62		0.12	0.12		0.12	0.12	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.3		2.5	5.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	273	1537		345	1673		117	144		120	180	
v/s Ratio Prot	0.00	0.31		c0.03	c0.38			0.01			0.02	
v/s Ratio Perm	0.05			0.18			0.01			c0.06		
v/c Ratio	0.08	0.55		0.32	0.61		0.10	0.12		0.47	0.17	
Uniform Delay, d1	4.4	9.1		4.7	7.6		25.3	25.3		26.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.8		0.4	1.0		0.3	0.3		2.1	0.3	
Delay (s)	4.5	9.8		5.0	8.7		25.6	25.6		28.6	25.8	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		9.7			8.3			25.6			27.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	52.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	150	850	1068	124	58	100
Future Vol, veh/h	150	850	1068	124	58	100
Conflicting Peds, #/hr	8	0	0	8	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	130	-	-	60	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	25	21	18	18	30	24
Mvmt Flow	160	904	1136	132	62	106

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1144	0	-	0	1915	576
Stage 1	-	-	-	-	1144	-
Stage 2	-	-	-	-	771	-
Critical Hdwy	4.6	-	-	-	7.4	7.38
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.45	-	-	-	3.8	3.54
Pot Cap-1 Maneuver	490	-	-	-	~ 43	409
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	352	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	490	-	-	-	~ 29	406
Mov Cap-2 Maneuver	-	-	-	-	~ 29	-
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	235	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	$ 765.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	490	-	-	-	70
HCM Lane V/C Ratio	0.326	-	-	-	2.401
HCM Control Delay (s)	15.9	-	-	-	$ 765.4
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	1.4	-	-	-	16.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	48.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	698	115	98	1000	10	53	5	125	11	4	76
Future Vol, veh/h	17	698	115	98	1000	10	53	5	125	11	4	76
Conflicting Peds, #/hr	4	0	14	14	0	4	22	0	0	0	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	185	-	-	-	-	-	-	-	55
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	23	16	9	23	38	0	0	10	9	25	7
Mvmt Flow	19	767	126	108	1099	11	58	5	137	12	4	84

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1114	0	0	907	0	0	1671	2211	461	1748	2269	581
Stage 1	-	-	-	-	-	-	882	882	-	1324	1324	-
Stage 2	-	-	-	-	-	-	789	1329	-	424	945	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.5	6.5	7.1	7.68	7	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.68	6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.5	4	3.4	3.59	4.25	3.37
Pot Cap-1 Maneuver	584	-	-	704	-	-	64	45	526	51	30	445
Stage 1	-	-	-	-	-	-	312	367	-	155	184	-
Stage 2	-	-	-	-	-	-	354	226	-	560	291	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	572	-	-	704	-	-	~ 37	36	519	28	24	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 37	36	-	28	24	-
Stage 1	-	-	-	-	-	-	298	350	-	149	155	-
Stage 2	-	-	-	-	-	-	230	191	-	392	278	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	$ 549.4	55.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	101	572	-	-	704	-	-	27	434
HCM Lane V/C Ratio	1.991	0.033	-	-	0.153	-	-	0.611	0.192
HCM Control Delay (s)	$ 549.4	11.5	-	-	11	-	-	261.2	15.3
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	17	0.1	-	-	0.5	-	-	1.9	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	414	260	307	310	93	248	478	144	235	939	129
Future Volume (vph)	169	414	260	307	310	93	248	478	144	235	939	129
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	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	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1421	1483	1218	1341	1315		2906	2639	1054	1374	2939	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1421	1483	1218	1341	1315		2906	2639	1054	1374	2939	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	176	431	271	320	323	97	258	498	150	245	978	134
RTOR Reduction (vph)	0	0	191	0	8	0	0	0	105	0	8	0
Lane Group Flow (vph)	176	431	80	320	412	0	258	498	45	245	1104	0
Confl. Peds. (#/hr)			5	5					1	1		
Heavy Vehicles (%)	17%	18%	20%	24%	25%	40%	11%	26%	38%	21%	10%	19%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	custom	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						2			
Actuated Green, G (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Effective Green, g (s)	25.5	30.5	30.5	25.5	30.5		14.7	38.5	39.3	15.5	39.3	
Actuated g/C Ratio	0.20	0.23	0.23	0.20	0.23		0.11	0.30	0.30	0.12	0.30	
Clearance Time (s)	4.5	5.5	5.5	4.5	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.2	3.2	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	278	347	285	263	308		328	781	318	163	888	
v/s Ratio Prot	0.12	0.29		c0.24	c0.31		c0.09	0.19		c0.18	c0.38	
v/s Ratio Perm			0.07						0.04			
v/c Ratio	0.63	1.24	0.28	1.22	1.34		0.79	0.64	0.14	1.50	1.24	
Uniform Delay, d1	48.0	49.8	40.7	52.2	49.8		56.1	39.7	33.1	57.2	45.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.27	0.92	0.54	1.00	1.00	
Incremental Delay, d2	4.7	131.1	0.6	127.0	171.8		8.1	2.7	0.6	255.6	118.8	
Delay (s)	52.6	180.8	41.3	179.3	221.5		79.2	39.0	18.5	312.9	164.2	
Level of Service	D	F	D	F	F		E	D	B	F	F	
Approach Delay (s)		112.1			203.3			47.1			191.0	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	141.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	46	42	32	43	32	9	128	12	47	241	27
Future Vol, veh/h	25	46	42	32	43	32	9	128	12	47	241	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	39	23	6	31	20	86	22	13	27	36	13	16
Mvmt Flow	27	49	45	34	46	34	10	136	13	50	256	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	10.3	10.2	14
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	22%	30%	15%
Vol Thru, %	86%	41%	40%	77%
Vol Right, %	8%	37%	30%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	113	107	315
LT Vol	9	25	32	47
Through Vol	128	46	43	241
RT Vol	12	42	32	27
Lane Flow Rate	159	120	114	335
Geometry Grp	1	1	1	1
Degree of Util (X)	0.241	0.2	0.187	0.51
Departure Headway (Hd)	5.478	5.986	5.923	5.479
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	656	600	606	664
Service Time	3.504	4.018	3.956	3.479
HCM Lane V/C Ratio	0.242	0.2	0.188	0.505
HCM Control Delay	10.2	10.5	10.3	14
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.9	0.7	0.7	2.9

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	61	132	143	103	139
Future Vol, veh/h	134	61	132	143	103	139
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	12	28	15	19	22	24
Mvmt Flow	158	72	155	168	121	164
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11.8	11.9	12.7
HCM LOS	B	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	69%	43%
Vol Thru, %	48%	0%	57%
Vol Right, %	52%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	275	195	242
LT Vol	0	134	103
Through Vol	132	0	139
RT Vol	143	61	0
Lane Flow Rate	324	229	285
Geometry Grp	1	1	1
Degree of Util (X)	0.446	0.358	0.435
Departure Headway (Hd)	4.968	5.614	5.501
Convergence, Y/N	Yes	Yes	Yes
Cap	728	642	658
Service Time	2.977	3.644	3.51
HCM Lane V/C Ratio	0.445	0.357	0.433
HCM Control Delay	11.9	11.8	12.7
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.3	1.6	2.2

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	23	149	47	52	145	46	20	206	37	14	191	25
Future Vol, veh/h	23	149	47	52	145	46	20	206	37	14	191	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	25	25	31	16	25	18	30	13	28	54	20	9
Mvmt Flow	27	175	55	61	171	54	24	242	44	16	225	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.4	18.3	20.4	20.1
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	11%	21%	6%
Vol Thru, %	78%	68%	60%	83%
Vol Right, %	14%	21%	19%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	263	219	243	230
LT Vol	20	23	52	14
Through Vol	206	149	145	191
RT Vol	37	47	46	25
Lane Flow Rate	309	258	286	271
Geometry Grp	1	1	1	1
Degree of Util (X)	0.605	0.509	0.55	0.566
Departure Headway (Hd)	7.036	7.116	6.931	7.528
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	511	502	517	476
Service Time	5.119	5.204	5.016	5.616
HCM Lane V/C Ratio	0.605	0.514	0.553	0.569
HCM Control Delay	20.4	17.4	18.3	20.1
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	4	2.8	3.3	3.4

Intersection	
Intersection Delay, s/veh	23.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	200	4	70	178	97	10	171	73	93	175	20
Future Vol, veh/h	13	200	4	70	178	97	10	171	73	93	175	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	10	20	40	38	23	14	25	15	22	19	18	24
Mvmt Flow	14	217	4	76	193	105	11	186	79	101	190	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.4	30.5	19.9	22.8
HCM LOS	C	D	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	6%	20%	32%
Vol Thru, %	67%	92%	52%	61%
Vol Right, %	29%	2%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	254	217	345	288
LT Vol	10	13	70	93
Through Vol	171	200	178	175
RT Vol	73	4	97	20
Lane Flow Rate	276	236	375	313
Geometry Grp	1	1	1	1
Degree of Util (X)	0.569	0.488	0.764	0.642
Departure Headway (Hd)	7.418	7.442	7.334	7.382
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	486	484	491	488
Service Time	5.479	5.505	5.388	5.44
HCM Lane V/C Ratio	0.568	0.488	0.764	0.641
HCM Control Delay	19.9	17.4	30.5	22.8
HCM Lane LOS	C	C	D	C
HCM 95th-tile Q	3.5	2.6	6.6	4.5

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	140	27	71	92	45	16	171	29	59	186	26
Future Vol, veh/h	17	140	27	71	92	45	16	171	29	59	186	26
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	14	23	13	11	28	14	43	18	50	9	21	12
Mvmt Flow	20	165	32	84	108	53	19	201	34	69	219	31
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	13.8	14.4	15.3	17
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	0%	9%	34%	22%
Vol Thru, %	91%	0%	76%	44%	69%
Vol Right, %	0%	100%	15%	22%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	29	184	208	271
LT Vol	16	0	17	71	59
Through Vol	171	0	140	92	186
RT Vol	0	29	27	45	26
Lane Flow Rate	220	34	216	245	319
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.454	0.059	0.394	0.438	0.557
Departure Headway (Hd)	7.423	6.231	6.554	6.444	6.286
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	486	574	548	558	574
Service Time	5.167	3.975	4.601	4.488	4.327
HCM Lane V/C Ratio	0.453	0.059	0.394	0.439	0.556
HCM Control Delay	16.2	9.4	13.8	14.4	17
HCM Lane LOS	C	A	B	B	C
HCM 95th-tile Q	2.3	0.2	1.9	2.2	3.4

Intersection	
Intersection Delay, s/veh	32.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	172	144	105	159	10	136	149	66	5	173	139
Future Vol, veh/h	105	172	144	105	159	10	136	149	66	5	173	139
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	49	27	21	25	37	12	14	9	21	0	21	28
Mvmt Flow	124	202	169	124	187	12	160	175	78	6	204	164
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	42.6	20.7	40.1	19.1
HCM LOS	E	C	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%	100%	0%	3%	0%
Vol Thru, %	52%	0%	0%	54%	0%	94%	97%	0%
Vol Right, %	0%	100%	0%	46%	0%	6%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	66	105	316	105	169	178	139
LT Vol	136	0	105	0	105	0	5	0
Through Vol	149	0	0	172	0	159	173	0
RT Vol	0	66	0	144	0	10	0	139
Lane Flow Rate	335	78	124	372	124	199	209	164
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.851	0.174	0.339	0.892	0.34	0.527	0.519	0.389
Departure Headway (Hd)	9.142	8.079	9.874	8.635	9.9	9.548	8.927	8.554
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	396	444	364	420	363	378	404	420
Service Time	6.891	5.826	7.622	6.383	7.654	7.302	6.679	6.306
HCM Lane V/C Ratio	0.846	0.176	0.341	0.886	0.342	0.526	0.517	0.39
HCM Control Delay	46.5	12.5	17.6	50.9	17.7	22.5	21	16.7
HCM Lane LOS	E	B	C	F	C	C	C	C
HCM 95th-tile Q	8.1	0.6	1.5	9.3	1.5	2.9	2.9	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	55	67	150	41	52	68	1087	102	73	1396	90
Future Volume (vph)	78	55	67	150	41	52	68	1087	102	73	1396	90
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.98	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	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1499	1227		1478	1206	1363	2666		1458	2740	
Flt Permitted		0.54	1.00		0.59	1.00	0.08	1.00		0.15	1.00	
Satd. Flow (perm)		839	1227		905	1206	108	2666		234	2740	
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)	83	59	71	160	44	55	72	1156	109	78	1485	96
RTOR Reduction (vph)	0	0	55	0	0	42	0	5	0	0	3	0
Lane Group Flow (vph)	0	142	16	0	204	13	72	1260	0	78	1578	0
Confl. Peds. (#/hr)	6		6	6		6	3		3	3		3
Heavy Vehicles (%)	16%	9%	19%	13%	15%	21%	22%	23%	21%	14%	20%	21%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		4	2			6		
Actuated Green, G (s)		30.1	30.1		30.1	30.1	86.4	80.3		86.4	77.2	
Effective Green, g (s)		30.1	30.1		30.1	30.1	86.4	80.3		86.4	77.2	
Actuated g/C Ratio		0.23	0.23		0.23	0.23	0.66	0.62		0.66	0.59	
Clearance Time (s)		4.5	4.5		4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		194	284		209	279	160	1646		212	1627	
v/s Ratio Prot							0.03	c0.47		0.02	c0.58	
v/s Ratio Perm		0.17	0.01		c0.23	0.01	0.27			0.23		
v/c Ratio		0.73	0.06		0.98	0.05	0.45	0.77		0.37	0.97	
Uniform Delay, d1		46.2	38.9		49.6	38.8	39.4	18.0		10.8	25.3	
Progression Factor		1.00	1.00		1.00	1.00	0.77	0.70		1.07	1.10	
Incremental Delay, d2		12.6	0.1		54.9	0.0	1.0	2.5		0.1	2.7	
Delay (s)		58.8	39.0		104.5	38.8	31.3	15.2		11.6	30.5	
Level of Service		E	D		F	D	C	B		B	C	
Approach Delay (s)		52.2			90.5			16.0			29.6	
Approach LOS		D			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.1%	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												
Traffic Volume (vph)	106	11	93	28	10	25	77	1115	15	16	1528	112
Future Volume (vph)	106	11	93	28	10	25	77	1115	15	16	1528	112
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.94			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1286			1419	1124	1446	2628		1289	2722	
Flt Permitted		0.82			0.72	1.00	0.06	1.00		0.18	1.00	
Satd. Flow (perm)		1080			1056	1124	89	2628		238	2722	
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)	113	12	99	30	11	27	82	1186	16	17	1626	119
RTOR Reduction (vph)	0	22	0	0	0	22	0	1	0	0	3	0
Lane Group Flow (vph)	0	202	0	0	41	5	82	1201	0	17	1742	0
Confl. Peds. (#/hr)	10					10	6		6	6		6
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	19%	50%	25%	5%	57%	29%	15%	26%	40%	29%	21%	15%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	2			6		
Actuated Green, G (s)		26.4			26.4	26.4	90.1	83.1		90.1	81.4	
Effective Green, g (s)		26.4			26.4	26.4	90.1	83.1		90.1	81.4	
Actuated g/C Ratio		0.20			0.20	0.20	0.69	0.64		0.69	0.63	
Clearance Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)		219			214	228	152	1679		221	1704	
v/s Ratio Prot							0.04	c0.46		0.00	c0.64	
v/s Ratio Perm		c0.19			0.04	0.00	0.34			0.05		
v/c Ratio		0.92			0.19	0.02	0.54	0.72		0.08	1.02	
Uniform Delay, d1		50.8			43.0	41.5	20.1	15.6		15.0	24.3	
Progression Factor		1.00			1.00	1.00	1.54	0.80		1.32	0.65	
Incremental Delay, d2		39.5			0.3	0.0	2.0	1.9		0.0	19.9	
Delay (s)		90.3			43.3	41.5	33.0	14.4		19.8	35.8	
Level of Service		F			D	D	C	B		B	D	
Approach Delay (s)		90.3			42.6			15.6			35.6	
Approach LOS		F			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.5%	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												
Traffic Volume (vph)	151	179	118	98	221	279	80	771	41	264	1225	139
Future Volume (vph)	151	179	118	98	221	279	80	771	41	264	1225	139
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			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	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1222	1306			1454	1293	1179	2696		1374	2766	
Flt Permitted	0.30	1.00			0.47	1.00	0.11	1.00		0.26	1.00	
Satd. Flow (perm)	384	1306			694	1293	134	2696		380	2766	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	153	181	119	99	223	282	81	779	41	267	1237	140
RTOR Reduction (vph)	0	18	0	0	0	65	0	3	0	0	6	0
Lane Group Flow (vph)	153	282	0	0	322	217	81	817	0	267	1371	0
Confl. Peds. (#/hr)			4	4			1		2	2		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	36%	22%	30%	33%	12%	15%	41%	22%	27%	21%	18%	19%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.9	
Effective Green, g (s)	34.5	34.5			34.5	34.5	82.0	66.5		82.0	73.9	
Actuated g/C Ratio	0.27	0.27			0.27	0.27	0.63	0.51		0.63	0.57	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5			2.5	2.5	2.5	4.6		2.5	4.6	
Lane Grp Cap (vph)	101	346			184	343	149	1379		358	1572	
v/s Ratio Prot		0.22					0.03	0.30		0.09	c0.50	
v/s Ratio Perm	0.40				c0.46	0.17	0.31			c0.38		
v/c Ratio	1.51	0.81			1.75	0.63	0.54	0.59		0.75	0.87	
Uniform Delay, d1	47.8	44.7			47.8	42.2	15.9	22.3		28.5	24.0	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.35	1.36	
Incremental Delay, d2	275.7	13.3			359.0	3.3	3.2	1.9		1.9	1.7	
Delay (s)	323.5	58.1			406.7	45.5	19.1	24.1		40.3	34.4	
Level of Service	F	E			F	D	B	C		D	C	
Approach Delay (s)		147.7			238.1			23.7			35.3	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	80.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	79	75	907	1173	217
Future Vol, veh/h	78	79	75	907	1173	217
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	21	35	31	25	29	16
Mvmt Flow	85	86	82	986	1275	236

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2050	757	1512	0	-	0
Stage 1	1394	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Critical Hdwy	7.22	7.6	4.72	-	-	-
Critical Hdwy Stg 1	6.22	-	-	-	-	-
Critical Hdwy Stg 2	6.22	-	-	-	-	-
Follow-up Hdwy	3.71	3.65	2.51	-	-	-
Pot Cap-1 Maneuver	~ 38	286	320	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	285	320	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	186	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	98.8	6.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	320	-	87	285	-	-
HCM Lane V/C Ratio	0.255	-	0.975	0.301	-	-
HCM Control Delay (s)	20.1	4.9	175.5	23	-	-
HCM Lane LOS	C	A	F	C	-	-
HCM 95th %tile Q(veh)	1	-	5.5	1.2	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Location	Solutions	Preliminary Screening: Environmental Impacts	Engineering Challenges	Land Use Consistency	Project Cost	Preliminary Preferred Solution	document
Air System							
n/a							
Bicycle System							
Major Arterials							
OR 219/OR 214 from Willow Avenue to Progress Way	Widen roadway and widen bike lanes	Y	Y	Y	$$		
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 219 from Butteville Road to Willow Avenue	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	Current TSP
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 214 from Progress Way to OR 99E	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	Current TSP
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 99E from northern UGB to Lincoln Street	Widen roadway and widen bike lanes	Y	Y	Y	$$		
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 99E from Lincoln Street to southern City Boundary	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 99E from southern City Boundary to southern UGB	Install shared lane markings and signs	N	N	Y	$		Highway 99E Corridor Plan
	Widen roadway and install bike lanes						
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$	✓	Highway 99E Corridor Plan
Minor Arterials							
OR 219 from western UGB to Butteville Road	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Butteville Road/OR 219 from northern UGB to southern UGB	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Evergreen Road from OR 214 to Hayes Street	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
Boones Ferry Road from northern UGB to Hazelnut Drive	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		BLTS
	Install shared lane markings and signs	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Boones Ferry Road/Settlemier Avenue from Hazelnut Drive to Harrison Street	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		BLTS
	Reduce lane width and widen bike lanes	N	N	Y	$		
	Widen roadway and widen bike lanes	Y	Y	Y	$$		
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Settlemier Avenue from Harrison Street to railroad tracks	Install shared lane markings and signs	N	N	Y	$	✓	Current TSP
Boones Ferry Road from Dahlia Street to southern UGB	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		
	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Front Street	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		Current TSP
	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Garfield Street from 3rd Street to Front Street	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	Downtown Development Plan
Garfield Street from Smith Drive to 3rd Street	Install shared lane markings and signs	N	N	Y	$	✓	
Young Street	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$	✓	
	Widen roadway and install bike lanes	Y	Y	Y	$$		
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
OR 211	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		BLTS
	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Widen roadway and install buffered bike lanes	Y	Y	Y	$$$		
Service Collectors							

Location	Solutions	Preliminary Screening				Preliminary Preferred Solution	document
		Environmental Impacts	Engineering Challenges	Land Use Consistency	Project Cost		
Arney Road from Robin Avenue to OR 219	Install shared lane markings and signs	N	N	Y	$	✓	
Stacy Allison Way from Evergreen Road to Center Street	Reduce lane width and install bike lanes	N	N	Y	$		Current TSP
	Widen roadway and install bike lanes	Y	Y	Y	$$		
	Enhance the parallel route of Harvard Drive from Stacy Allison Way to Evergreen Road. Install buffered bike lanes on both sides of the roadway	Y	Y	Y	$$	✓	
Hayes Street from Harvard Drive to Cascade Drive	Reduce lane width and install bike lanes	N	N	Y	$	✓	Current TSP
Hayes Street from Cascade Drive to Settlemier Avenue	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
Parr Road from western UGB to western City Boundary	Reduce lane width and install bike lanes	N	N	Y	$		
	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
Lincoln Street	Install shared lane markings and signs	N	N	Y	$	✓	Mill Creek Greenway Master Plan
Cleveland Street	Install shared lane markings and signs	N	N	Y	$	✓	Mill Creek Greenway Master Plan
Hardcastle Avenue	Install shared lane markings and signs	N	N	Y	$	✓	Current TSP
	Widen roadway and install bike lanes	Y	Y	Y	$$		
Brown Street	Install shared lane markings and signs	N	N	Y	$	✓	
	Widen roadway and install bike lanes	Y	Y	Y	$$		
Cooley Road from OR 211 to Aubrey Way	Widen roadway and install bike lanes	Y	Y	Y	$$	✓	
	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		BLTS
Cooley Road from Aubrey Way to Hardcastle Avenue	Install bike lane striping	N	N	Y	$	✓	
	Perform an engineering study to consider reduction of the posted speed limit	N	N	Y	$		
Access Streets							
Stubb Road	Install shared lane markings and signs	N	N	Y	$	✓	
Astor Way	Install shared lane markings and signs	N	N	Y	$	✓	
Tukwila Drive from Boones Ferry Road to Hazelnut Drive	Install shared lane markings and signs	N	N	Y	$	✓	
5th Street	Install shared lane markings and signs	N	N	Y	$	✓	Current TSP
Gatch Street	Install shared lane markings and signs	N	N	Y	$	✓	
Park Avenue	Install shared lane markings and signs	N	N	Y	$	✓	
Local Streets							
Evergreen Road from Country Club Court to OR 214	Install shared lane markings and signs	N	N	Y	$	✓	
Country Club Road from Evergreen Road to Astor Way	Install shared lane markings and signs	N	N	Y	$	✓	
Cascade Drive	Install shared lane markings and signs	N	N	Y	$	✓	
Smith Drive from Hayes Street to Garfield Street	Install shared lane markings and signs	N	N	Y	$	✓	
Meridian Drive	Install shared lane markings and signs	N	N	Y	$	✓	Current TSP
Marine System							
n/a							
Pedestrian System							
Major Arterials							
OR 219 from Butteville Road to Woodland Avenue	Install new sidewalks	N	N	Y	$$	✓	
	Install new sidewalks with landscaping	Y	Y	Y	$$$		
OR 99E from northern UGB to Lincoln Street	Evaluate light levels and install street lighting	N	N	Y	$	✓	
OR 99E from Lincoln Street to southern City Boundary	Install new sidewalks	N	N	Y	$$	✓	
	Install new sidewalks with landscaping	Y	Y	Y	$$$		
OR 99E from southern City Boundary to southern UGB	Install new sidewalks	N	N	Y	$$	✓	
	Install new sidewalks with landscaping	Y	Y	Y	$$$		
Minor Arterials							
Butteville Road/OR 219 from northern UGB to southern UGB	Install new sidewalks	N	N	Y	$	✓	
	Install new sidewalks with landscaping	N	N	Y	$$		
Evergreen Road	Fill in the gaps	N	N	Y	$$	✓	
Boones Ferry Road from northern UGB to Hazelnut Drive	Install new sidewalks on one side	N	N	Y	$	✓	
Settlemier Avenue from Oak Street to Parr Road	Install new sidewalks on one side	N	N	Y	$	✓	

Location	Solutions	Preliminary Screening				Preliminary Preferred Solution	document
		Environmental Impacts	Engineering Challenges	Land Use Consistency	Project Cost		
Boones Ferry Road from Parr Road to southern UGB	Install new sidewalks	N	N	Y	$	✓	
Front Street from northern UGB to Hazelnut Drive	Install new sidewalks on one side	N	N	Y	$	✓	
Young Street	Fill in the gaps	N	N	Y	$	✓	
OR 211	Install new sidewalks	N	N	Y	$$	✓	
	Install new sidewalks with landscaping	Y	Y	Y	$$$		
Service Collectors							
Hayes Street	Fill in the gaps	N	N	Y	$$	✓	
Parr Road	Install new sidewalks	N	N	Y	$$	✓	
	Install new sidewalks with landscaping	Y	Y	Y	$$$		
Lincoln Street	Fill in the gaps	N	N	Y	$$	✓	
Industrial Avenue	Install new sidewalks	N	N	Y	$	✓	
Progress Way	Install new sidewalks	N	N	Y	$$	✓	
Hardcastle Avenue	Fill in the gaps	N	N	Y	$$	✓	
Brown Street	Fill in the gaps	N	N	Y	$$	✓	
Cooley Road	Fill in the gaps	N	N	Y	$$	✓	
	Evaluate light levels and install street lighting	N	N	Y	$		
Access Streets							
Woodland Avenue from Jory Street to Arney Road	Install new sidewalks on one side	N	N	Y	$	✓	
Stubb Road	Install new sidewalks	N	N	Y	$	✓	
Oregon Way from Country Club Road to OR 214	Install new sidewalks	N	N	Y	$$	✓	
Hazelnut Drive from Graystone Drive to Front Street	Fill in the gaps	N	N	Y	$$	✓	
Gatch Street	Fill in the gaps	N	N	Y	$	✓	
Park Avenue from Hardcastle Avenue to Lincoln Street	Install new sidewalks on one side	N	N	Y	$	✓	
Local Streets							
Willow Avenue from McNaught Road to OR 219	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Cascade Drive	Install new sidewalks	N	N	Y	$	✓	
Leasure Street	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Church Street from Leasure Street to Settlemier Avenue	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Garfield Street from Smith Drive to Settlemier Avenue	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Smith Drive from Hayes Street to Garfield Street	Install new sidewalks on one side	N	N	Y	$		
	Install new sidewalks on both sides	N	Y	Y	$$	✓	
Ben Brown Lane	Fill in the gaps	Y	N	Y	$	✓	
Oak Street	Install new sidewalks on one side	Y	N	Y	$	✓	
Ogle Street	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Stark Street	Install new sidewalks on one side	Y	N	Y	$		
	Install new sidewalks on both sides	Y	Y	Y	$$	✓	
Intersections							
Front Street/Young Street	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection	N	Y	Y	$	✓	Downtown Development Plan
Front Street/Lincoln Street	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection	N	Y	Y	$	✓	Downtown Development Plan
Cascade Drive/Hayes Street	Install an enhanced pedestrian crossing	N	N	Y	$	✓	
Park Avenue/Legion Park Driveway	Install an enhanced pedestrian crossing	N	N	Y	$	✓	
Hazelnut Drive/Broadmoor Place Accessway	Install an enhanced pedestrian crossing	N	N	Y	$	✓	
OR 99E from OR 214 to Young Street	Install enhanced pedestrian crossings along OR 99E at every major intersection between OR 214 and Young Street	N	N	Y	$$	✓	Highway 99E Corridor Plan
OR 99E	Install countdown pedestrian timers and construct ADA enhancements at all signalized intersections along OR 99E	N	Y	Y	$	✓	Highway 99E Corridor Plan

Location	Solutions	Preliminary Screening: Environmental Impacts	Preliminary Screening: Engineering Challenges	Preliminary Screening: Land Use Consistency	Preliminary Screening: Project Cost	Preliminary Preferred Solution	document
OR 99E from Arlington Street to Nelson Lane	Install curb extensions along OR 99E at every major intersection between Arlington Street and Nelson Lane (up to 15 locations). Potential locations include: o Alexandria Avenue o James Street o Williams Street o Blaine Street o Aztec Drive o Laurel Avenue o Tomlin Avenue	N	Y	Y	$$	✓	Highway 99E Corridor Plan
Multi-Use Pathways							
Butteville Road/OR 219 from northern UGB to southern UGB	Widen roadway and install widen shoulders	Y	Y	Y	$$		Marion County TSP (Figure 9-1)
Mill Creek corridor	Construct the Mill Creek Greenway	Y	Y	Y	$$$	✓	Mill Creek Greenway Master Plan
Mill Creek corridor	Mill Creek Greenway – Northern tributary	Y	Y	Y	$$$	✓	
Mill Creek corridor	Mill Creek Greenway – Western tributary	Y	Y	Y	$$$	✓	
Mill Creek corridor	Evergreen Road extension south to planned Mill Creek Greenway	Y	Y	Y	$$$	✓	
Mill Creek corridor	North-south connection on Hardcastle Avenue and Lincoln Street west of Washington Elementary School	Y	Y	Y	$$$	✓	
Mill Creek corridor	Extend Mill Creek corridor off-street pathway to Belle Passi Road	Y	Y	Y	$$$	✓	Highway 99E Corridor Plan
Safe Routes to School							
See Bicycle and Pedestrian Improvements							
Off-street Improvements							
June Way Accessway to OR 99E (near the Audrey Way intersection)	Accessway	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
Johnson Street Accessway to OR 99E	Accessway	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
Elm Street Accessway to OR 99E	Accessway	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
Wilson Street Accessway to OR 99E	Accessway	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
Hawley Street Accessway to OR 99E	Accessway (possibly part of future street extension)	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
A Street Accessway to Cleveland Street	Accessway	Y	Y	Y	$	✓	
Mill Creek Greenway crossing at Young Street	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Downtown Development Plan
Mill Creek Greenway crossing at Hazelnut Drive	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	
Mill Creek Greenway crossing at Bulldog Drive - East	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at OR 214	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Hardcastle Avenue	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Lincoln Street	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Cleveland Street and railroad tracks	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Ben Brown Lane	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Settlemier Avenue	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Parr Road	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Front Street and railroad tracks	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Bulldog Drive - West	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Meridian Drive	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Mill Creek Greenway crossing at Boones Ferry Road	At-grade mid-block crossing treatment	Y	Y	Y	$	✓	Mill Creek Greenway Master Plan
Pipeline System							
n/a							
Rail System							
Front Street	Establish a downtown Amtrak passenger rail stop along Front Street in downtown Woodburn, potentially as a public-private partnership at the "Y" property adjacent to Locomotive Park	Y	Y	Y	$$	✓	from Woodburn Transit Plan Update - other plan review
Front Street and Cleveland Street	Investigate the opportunity to remove private grade railroad crossings by providing alternative access to parcels as development and redevelopment occurs	Y	Y	Y	$	✓	Current TSP

Location	Solutions	Preliminary Screening: Environmental Impacts	Preliminary Screening: Engineering Challenges	Preliminary Screening: Land Use Consistency	Preliminary Screening: Project Cost	Preliminary Preferred Solution	document
Butteville Road, north of OR 219	Explore a passenger rail stop if commuter rail is extended between Wilsonville and Beaverton down to Salem	Y	Y	Y	$$$		Current TSP
	Roadway System						
Access Management							
City-wide	Develop city-wide access spacing standards according to a roadway's functional classification	N	N	Y	$	✓	Current TSP and Highway 99E Corridor Plan
City-wide	Investigate and implement opportunities to provide alternative access to nonstate facilities when reasonable access can occur (consistent with the State's Division 51 access management standards)	N	N	Y	$	✓	Current TSP
City-wide	Through development, right-of-way dedications should be provided to facilitate the future planned transportation system in the vicinity of the proposed development	N	N	Y	$$	✓	Current TSP
City-wide	Through development, half-street improvements (sidewalks, curb and gutter, bicycle lanes/paths, and/or travel lanes) should be provided along all site frontages that do not have full buildout improvements in place at the time of development	N	N	Y	$	✓	Current TSP
City-wide	Define a variance process for when the standard cannot be met	N	N	Y	$	✓	
City-wide	Establish an approach for access consolidation over time to move in the direction of the standards at each opportunity (see above). Cross-over easements should be provided on all compatible parcels (topography, access, and land use) to facilitate future access between adjacent parcels and inter-parcel circulation.	N	N	Y	$	✓	
City-wide	Consider opportunities to restrict certain turning movements at accesses (such as a right in-right out access)	N	N	Y	$	✓	Highway 99E Corridor Plan
Street Connectivity							
South Arterial	Construct the Southern Arterial from Evergreen Road to OR 99E (2 lanes)	Y	Y	Y	$$$	✓	current TSP, Woodburn proposed in Marion County TSP (Table 8-18)
Evergreen Road	Extend south to Parr Road	Y	Y	Y	$$	✓	Current TSP
Stacy Allison Drive	Extend south to Parr Road	Y	Y	Y	$$$	✓	Current TSP
Brown Street	Extend south to the South Arterial	Y	Y	Y	$$	✓	Current TSP
Woodland Avenue	Extend west to Butteville Road through future development	Y	Y	Y	$$	✓	
Ben Brown Lane from Settlemier Avenue to Elans Way	Re-designate Ben Brown Lane as an Access Street	N	N	N	$	✓	
Ben Brown Lane	Extend Ben Brown Lane to Evergreen Road as an Access Street as part of future residential development	Y	Y	Y	$$	✓	
Capacity							
OR 219 from Butteville Road to Woodland Avenue	Widen roadway to include two lanes in each direction and a two-way left-turn lane	Y	Y	Y	$$	✓	Current TSP
OR 214 from Cascade Drive to OR 99E	Widen roadway to include two lanes in each direction and a two-way left-turn lane	Y	Y	Y	$$$	✓	Current TSP
OR 99E from Young Street to south UGB	Widen roadway to provide a continuous two-way left-turn lane and wider shoulders (in conjunction with pedestrian and bicycle facility improvements)	Y	Y	Y	$$	✓	Highway 99E Corridor Plan
Parr Road	Upgrade to service collector urban standards	Y	Y	Y	$$	✓	Current TSP
Butteville Road, south of OR 219	Upgrade to minor arterial urban standards	Y	Y	Y	$$$	✓	Current TSP
Brown Street	Upgrade to service collector urban standards	Y	Y	Y	$$	✓	Current TSP
OR 214/I-5 Southbound Ramp Intersection	Signal retiming	N	Y	N	$	✓	
	Establish alternative mobility standards	N	N	N	$	✓	

		Preliminary Screening				Preliminary	
Location	Solutions	Environmental Impacts	Engineering Challenges	Land Use Consistency	Project Cost	Preferred Solution	document
OR 214/I-5 Northbound Ramp Intersection	Signal retiming	N	Y	N	$	✓	
	Establish alternative mobility standards	N	N	N	$	✓	
OR 214/Evergreen Road Intersection	Signal retiming	N	Y	N	$	✓	
OR 214/Oregon Way/Country Club Road Intersection	Signal retiming	N	Y	N	$	✓	
OR 214/Front Street Ramp Intersection	Install a traffic signal	Y	Y	Y	$$	✓	Current TSP
OR 214/Park Street Intersection	Install a traffic signal	Y	Y	Y	$$	✓	Current TSP
OR 214/OR 211/OR 99E Intersection	Reconfigure southbound approach to have two turn-lanes and the east leg to have two receiving lanes, including signal retiming	Y	Y	Y	$$	✓	
Parr Road/Settlemier Avenue Intersection	Install a traffic signal	Y	Y	Y	$$	✓	
OR 99E/Hardcastle Avenue Intersection	Reconfigure the westbound approach to incorporate one left-turn lane and one thru-right turn lane	Y	Y	Y	$$	✓	
	Reconfigure the westbound approach to incorporate one left-turn lane and one thru-right turn lane and install a separate right-turn lane on the southbound approach, including signal retiming	Y	Y	Y	$$		
OR 99E/Lincoln Street Intersection	Reconfigure the eastbound approach to incorporate one left-turn lane and one thru-right turn lane	Y	Y	Y	$$	✓	
	Reconfigure the eastbound approach to incorporate one left-turn lane and one thru-right turn lane and install a separate right-turn lane on the southbound approach, including signal retiming	Y	Y	Y	$$		
OR 99E/Young Street Intersection	Install a third westbound lane to provide separate left, thru, and right turn lanes. Implement protected-permissive left-turn phasing on the eastbound and westbound approaches.	Y	Y	Y	$	✓	Highway 99E Corridor Plan
OR 99E/Cleveland Street Intersection	Install a traffic signal, including OR 99E coordination	N	Y	Y	$	✓	Current TSP
Butteville Road/OR 219 Intersection	Install a traffic signal	Y	Y	Y	$$	✓	
Safety							
Butteville Road/Parr Road	Rebuild intersection due to grades on approaches	Y	Y	Y	$$	✓	from Marion County TSP (Table 8-5)
Southern OR 219/Butteville Road	Realign OR 219 to improve intersection(s) with Butteville Road	Y	Y	Y	$$	✓	from Marion County TSP (Table 8-20)
	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements)	Y	Y	Y	$$	✓	Current TSP
Northern OR 214/Butteville Road Intersection	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements)	Y	Y	Y	$$	✓	Current TSP
OR 99E	Update roadway lighting to meet ODOT roadway lighting standards	Y	Y	Y	$	✓	Highway 99E Corridor Plan
OR 99E access between Young Street and Cleveland Street	Restrict certain turning movements	N	Y	Y	$		Highway 99E Corridor Plan
	Close street accesses and potential lot consolidation	N	Y	Y	$$	✓	Highway 99E Corridor Plan
Front Street/Lincoln Street Intersection	Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)	N	N	Y	$	✓	
Front Street/Young Street/Garfield Street Intersection	Evaluate the intersection layout, signing, and striping in correlation to the railroad tracks. Provide clarification for westbound drivers trying to proceed through the intersection	Y	Y	Y	$	✓	
OR 99E/Tomlin Avenue	Restrict the southbound left-turn movement	N	N	Y	$		
	Evaluate the intersection layout, signing, and striping, including any sight distance constraints	Y	Y	Y	$	✓	
City-wide	Evaluate traffic safety along OR 99E, OR 219/OR214, Front Street, Evergreen Road, and other key corridors to identify appropriate countermeasures	N	Y	Y	$	✓	
Transit System							

Location	Solutions	Preliminary Screening: Environmental Impacts	Preliminary Screening: Engineering Challenges	Preliminary Screening: Land Use Consistency	Preliminary Screening: Project Cost	Preliminary Preferred Solution	document
Service Enhancements							
Woodburn Fleet	Purchase of Category B and C vehicles (1 each) for use in the City's expanded transit services. (100% funding level 2020-21)	N	N	Y	$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Woodburn Fleet	Purchase a Category B vehicle that will replace the second oldest full size vehicle in the WTS fleet; will be used for the City's existing local fixed route circulator. (130% funding level 2021)	N	N	Y	$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Woodburn Fixed Route	Addition of weekend service for Woodburn Transit Service fixed route and paratransit services (Sat. 9am-5pm, Sun.9am-3pm) by up to 2,156 revenue hours (FY20-21). (100% funding level 2020-21)	N	N	Y	$$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Woodburn Fixed Route	Modify the existing 60 minute fixed route loop; add an additional 30 minute route that will serve high frequency stops on weekdays (7am-7pm) within the Woodburn city limits. Total additional service will be up to 6,192 revenue hours (FY20-21). (100% funding level 2020-21)	N	N	Y	$$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Woodburn Fixed Route	Modify the existing 60-min. fixed route by adding a new 30 min. route that serves high frequency stops (up to 1,456 revenue hours); this service will operate Saturdays (9am-5pm) and Sundays (9am-3pm). Also includes Dial-a-Ride (DAR) service. (130% funding level 2020-21)	N	N	Y	$$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Woodburn Fixed Route	Increase frequency to 30 minutes	N	N	Y	$$	✓	from Woodburn Transit Plan Update (Figure 2-1)
Woodburn Fixed Route	Provide Saturday service	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn Fixed Route	Provide Sunday service	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn Fixed Route	Convert existing route to two-way operations	N	N	Y	$$		from Woodburn Transit Plan Update (Figure 2-1)
	Separate route into two routes with one-way operations	N	N	Y	$$		
	Separate route into two routes with two-way operations	N	N	Y	$$	✓	
	Add a new fixed route in City center (30-minute frequency to major local destinations)	N	N	Y	$		from Woodburn Transit Plan Update (Figure ES-2 and 10-2)
	Restructure "long" loop, expanded to serve the neighborhood in southeast Woodburn	N	N	Y	$		from Woodburn Transit Plan Update (Figure ES-2 and 10-2)
Parr Road corridor via an extension of Evergreen Road	New or re-routed service (as growth occurs)	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Crosby Road corridor	New or re-routed service (as growth occurs)	N	N	Y	$		from Woodburn Transit Plan Update - other plan review
Butteville Road corridor	New or re-routed service (as growth occurs)	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Employment center southwest of I-5/OR 214 interchange	New or re-routed service (as growth occurs)	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn Industrial Park along the Progress Way and Industrial Avenue corridors	New or re-routed service (as growth occurs)	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Gateway subarea	New or re-routed service. Refocus local and regional transit service in the Gateway subarea (between Front Street and Mill Creek) to support a mixed-use district	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn Company Stores	Establish a free shuttle between the Woodburn Company Stores and Downtown Woodburn, hourly during peak shopping and entertainment hours	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
City-wide	Peak-only employer shuttle	N	N	Y	$$		from Woodburn Transit Plan Update - chapter 10
Intercity Service Enhancements							
Urban and Rural Cherriots Regional Services	Expand service for up to 7,557 revenue hours on urban & rural Regional services. Includes startup costs for hiring new employees, and coordination of schedules with connecting services. Also establishes a Youth fare category (ages 6-18). (100% funding level 2020-21)	N	N	Y	$$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium

Location	Solutions	Preliminary Screening: Environmental Impacts	Preliminary Screening: Engineering Challenges	Preliminary Screening: Land Use Consistency	Preliminary Screening: Project Cost	Preliminary Preferred Solution	document
Keizer to Wilsonville	Establish one new Regional route from Keizer to Wilsonville with a stop at the Woodburn Memorial Park and Ride. Increase service on weekdays by 30 percent on urban & rural Regional services by up to 5,245 revenue hours. (130% funding level 2020-21)	N	N	Y	$$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Urban and Rural Cherriots Regional Services	Add Saturday service to urban & rural Cherriots Regional services with up to 3,919 revenue hours of new service (FY20-21). Includes coordination of schedules with other connecting services. (100% funding level 2020-21)	N	N	Y	$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
Urban and Rural Cherriots Regional Services	Add 30 percent more Saturday service to urban & rural Regional services by up to 215 revenue hours (FY20-21). In FY21, adds 6 holidays to the same routes. Includes coordination of schedules with connecting services. (130% funding level 2020-21)	N	N	Y	$	✓	from Ted at Cherriots as part of the STIF application for the 2019-21 biennium
City-wide	Coordinate transfers between the different agency services in Woodburn	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn	Provide a stop in Woodburn for SMART Route 1X	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn to Salem	Provide service to downtown Salem (and east to State offices): Incorporate a stop at the planned Park & Ride for the SMART express route between Wilsonville and Salem	N	Y	Y	$$$	✓	from Woodburn Transit Plan Update - other plan review
Woodburn to Portland	Provide service to Portland - connect to TriMet via the Tualatin Park-and-Ride, directly into downtown Portland, to the Westside Express Service (southern terminus at Wilsonville SMART Central), or the MAX Orange Line light rail service.	N	Y	Y	$$$		from Woodburn Transit Plan Update - other plan review
Woodburn to Hubbard	Provide a new demand-responsive service to Hubbard one day per week	N	Y	Y	$$		from Woodburn Transit Plan Update - chapter 10
Woodburn to Wilsonville	Provide service to WES station in Wilsonville	N	N	Y	$$		from Woodburn Transit Plan Update - chapter 10
Stop Enhancements							
City-wide	Post static bus route information at bus stops	N	N	Y	$	✓	from Woodburn Transit Plan Update
Stop 755016: Walmart	New shelter	N	N	Y	$	✓	
Stop 20419: Garfield Street	New shelter	N	N	Y	$	✓	
Park-and-Ride Facilities							
n/a							
Other Transit Solutions							
City-wide	Investigate transferring the paratransit system to a local social service agency	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
Truck Freight System							
n/a							
Other Solutions							
Intermodal Route Connectivity							
City-wide	Provide wayfinding to bike routes, multi-use paths, trails (as constructed), parks, schools, and other essential destinations	N	N	Y	$	✓	
City-wide	Provide bike racks at bus stops	N	N	Y	$	✓	from Woodburn Transit Plan Update
TSMO							
City-wide	Lead or provide support of potential TSM and TDM strategies	N	N	Y	$	✓	
City-wide	Identify opportunities for collaborative marketing with local business owners and operators, developers, and transit service providers	N	N	Y	$	✓	
City-wide	Update the Woodburn Development Ordinance to limit and/or allow for flexible parking requirements	N	N	Y	$	✓	
City-wide	Develop access management standards that reflect functional classification of the roadway	N	N	Y	$	✓	
City-wide	Implement truck signal priority at all signalized intersections along OR 214 and OR 99E	N	Y	Y	$	✓	
City-wide	Promote regional carpool/vanpool program	N	N	Y	$	✓	from Woodburn Transit Plan Update (Figure ES-2)

Location	Solutions	Preliminary Screening: Environmental Impacts	Preliminary Screening: Engineering Challenges	Preliminary Screening: Land Use Consistency	Preliminary Screening: Project Cost	Preliminary Preferred Solution	document
City-wide	Provide transit fare subsidies	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
City-wide	Establish carpool matching programs for ride-sharing	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
City-wide	Establish carpool parking programs	N	N	Y	$	✓	Current TSP
City-wide	Schedule shift changes to occur outside of peak travel periods	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
City-wide	Allow employees to work at home one day a week	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
City-wide	Establish neighborhood commercial and mixed-use nodes within the City	N	N	Y	$	✓	from Woodburn Transit Plan Update - other plan review
OR 99E	Work with ODOT to develop and implement a Traffic Management Plan for the OR 99E corridor that responds to increased congestion resulting from incidents on I-5 and regional events	N	Y	Y	$	✓	Highway 99E Corridor Plan

TECHNICAL MEMORANDUM #6

Preferred Alternatives

Date:	June 7, 2019	Project #: 21071.5
To:	Chris Kerr & Eric Liljequist, City of Woodburn Michael Duncan, Oregon Department of Transportation, Region 2 Technical Advisory Committee and Community Advisory Committee	
From:	Matt Hughart and Molly McCormick, Kittleson & Associates, Inc.	
Subject:	Technical Memo #6: Preferred Alternatives (Subtask 5.1)	

The purpose of this memorandum is to identify the projects included in the planned and financially constrained transportation systems for the Woodburn Transportation System Plan (TSP) update. Previous technical memorandums documented existing and future transportation system needs, see *Tech Memo 3: Existing Conditions Inventory and Analysis* and *Tech Memo 4: Future Systems Conditions*, and potential solutions to address the needs, see *Tech Memo 5: Alternatives Analysis and Funding Program*. The consultant team combined the information provided in these and other technical memorandums to develop projects for the planned transportation system and identify priorities for the financially constrained transportation system based on the TSP goals and objectives and evaluation criteria, see *Tech Memo 2: Project Goals and Objectives and Evaluation Criteria*. The information provided in this memorandum was revised based on input from the project team and the general public. The projects identified in this memorandum for the planned and financially constrained transportation systems will be incorporated in the Woodburn TSP update.

PROJECT EVALUATION CRITERIA AND PRIORITIZATION

The project evaluation criteria were used to evaluate projects included in the planned transportation system and identify priorities for the financially constrained transportation system. The projects were identified as high, medium, and low priority projects based on how well they address the goals of the TSP update. The goals are documented in *Tech Memo 2* and summarized below.

- **Goal I: Multimodal Mobility** – Provide a multimodal transportation system that avoids or reduces a reliance on one form of transportation and minimizes energy consumption and air quality impacts.
- **Goal II: Connectivity** – Provide an interconnected street system that is adequately sized to accommodate existing and projected traffic demands in the Woodburn area.
- **Goal III: Safety** – Provide a transportation system that enhances the safety and security of all transportation modes in the Woodburn area.

- **Goal IV: Strategic Investment** – Provide a financially sustainable transportation system through responsible stewardship of assets and financial resource.
- **Goal V: Land Use and Transportation Integration** – Review and update land use standards and ordinances to create a balanced built environment where existing and planned land uses are supported by an efficient multi-modal transportation system.
- **Goal VI: Coordination** – Develop a transportation system that is consistent with the City's adopted comprehensive plan and adopted plans of state, regional, and other local jurisdictions.

The evaluation criteria are included in *Attachment A*. Attachment A also indicates how the evaluation criteria were used to evaluate and prioritize the projects. A summary of the evaluations for the plan projects is included in *Attachment B*.

PLANNING LEVEL COST ESTIMATES

Planning level cost estimates were developed for the projects based on average unit costs for similar projects within the Pacific Northwest. The cost estimates help provide a realistic plan that reflects the City's financial forecast. The financially constrained plan was developed by identifying forecasted transportation funding (documented in *Tech Memo 3: Existing Conditions Inventory and Analysis*) and selecting higher priority projects from the planned system that can be funded with forecasted funds.

TRANSPORTATION FUNDING

The TSP will include a planned transportation system, which identifies all of the projects and programs needed to address all of the transportation needs within the city, and a financially constrained transportation system, which identifies the projects and programs the City anticipates being able to fund over the next 20 years. The amount of local funds available for capital projects in the TSP is estimated to be approximately $26.2 million or roughly $1.31 million per year.[1]

[1] This number does not include potential additional funding from state and federal grants such as the Statewide Transportation Improvement Program (STIP). While it is likely that these funds will be used to fund some transportation improvements within the city over the next 20 years, these funding sources are not accounted for in the City's revenue forecast because of the uncertainty in acquiring them.

PLANNED TRANSPORTATION SYSTEM COST SUMMARY

Table 1 provides a summary of the full cost of the planned and financially constrained transportation systems. As shown, the full cost of the planned system is approximately $129.3 million over the 20-year period, including $26.2 million in high priority projects, $101.6 million in medium priority projects, and $1.5 million in low priority projects. Based on the anticipated funds available for capital improvement projects, **the financially constrained plan includes all of the high priority projects.** This leaves no forecasted funding for the City to complete medium and low priority projects over the 20-year period.

Table 1: Planned Transportation System Cost Summary

Project Type	High Priority (Financially Constrained Plan Projects) (0-5 years)	Medium Priority (5-10 years)	Low Priority (10-20 years)	Total
Planned Transportation System				
Bicycle	$8,125,000	$11,915,000	$100,000	$20,140,000
Pedestrian	$6,750,000	$10,300,000	$285,000	$17,335,000
Roadway	$9,200,000	$73,140,000	$500,000	$82,840,000
Safety	$2,100,000	$5,360,000	$100,000	$7,560,000
Transit	--	$100,000	$15,000	$115,000
TDM[1]	$25,000	$100,000	$315,000	$440,000
Land Use	--	--	$50,000	$50,000
Access Management	--	--	$125,000	$125,000
Rail	--	$10,000	$15,000	$25,000
Total	**$26,200,000**	**$100,925,000**	**$1,505,000**	**$128,630,000**
Available Funding				
Total	$6,550,000	$6,550,000	$13,100,000	$26,200,000

TDM: Transportation Demand Management
1: Includes annual costs occurred every year.

BICYCLE PLAN

On-street bike lanes and other bicycle facilities are currently provided on a few roadways within the city. Therefore, the bicycle plan includes several projects along the city's Major and Minor Arterial and Service Collector streets for connectivity throughout the city. The bicycle plan also includes projects on access and local street that provide direct access to essential destinations.

Table 2 identifies the bicycle plan projects for the Woodburn TSP update. As shown, the projects are separated based on roadway classification. The priorities shown in Table 2 are based on the project evaluation criteria as well as input from the project team and the general public. The cost estimates are based on average unit costs for roadway improvements. Figure 1 illustrates the location of the bicycle plan projects.

Table 2: Bicycle Plan Projects

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
Major Arterials					
B1	OR 219 from Butteville Road to Willow Avenue	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	Cost included in R2[2]
B2	OR 214 from Progress Way to OR 99E	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	Cost included in R3[2]
B3	OR 99E from Lincoln Street to southern City Boundary	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	Cost included in R4[2]
B4	OR 99E from southern City Boundary to southern UGB	Bike lanes	Widen roadway and install buffered bike lanes in coordination with ODOT	Medium	Cost included in R4[2]
Minor Arterials					
B5	OR 219 from western UGB to Butteville Road	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	$650,000
B6	Butteville Road/OR 219 from northern UGB to OR 219	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	$3,200,000
B7	Butteville Road from OR 219 to southern UGB	Bike lanes	Widen roadway and install bike lanes	Medium	Cost included in R6[2]
B8	Evergreen Road from OR 214 to Hayes Street	Bike lanes	Widen roadway and install bike lanes	Medium	$500,000
B9	Boones Ferry Road from northern UGB to Hazelnut Drive	Bike lanes	Widen roadway and install bike lanes	Medium	$500,000
B10	Settlemier Avenue from Harrison Street to railroad tracks	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School, Heritage Elementary School, Valor Middle School, and St. Luke's School	Medium	$25,000
B11	Boones Ferry Road from Dahlia Street to southern UGB	Bike lanes	Widen roadway and install bike lanes	Medium	$1,500,000
B12	Front Street from northern UGB to Boones Ferry Road	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Woodburn High School, Heritage Elementary School, Valor Middle School, and St. Luke's School	High	$8,050,000

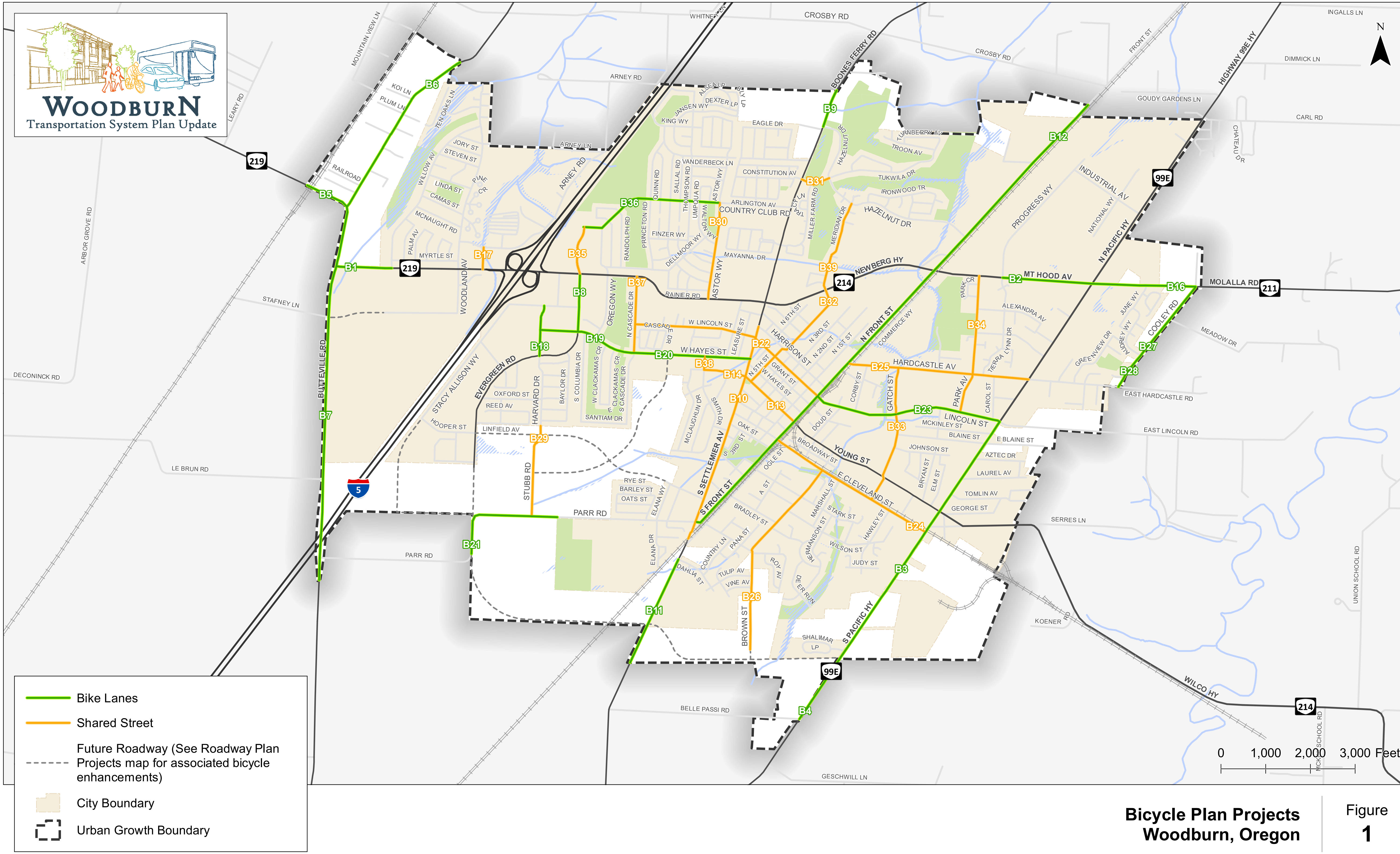
Project Number	Location	Type	Description	Priority	Cost Estimate[3]
B13	Garfield Street from 3rd Street to Front Street	Shared street	Install shared lane markings and signs.	Low	$10,000
B14	Garfield Street from Smith Drive to 3rd Street	Shared street	Install shared lane markings and signs.	Low	$10,000
B15[1]	Young Street	Study	Perform a corridor evaluation that would consider design treatments to improve bicycle comfort and safety such as striping, signing, and wayfinding	Medium	$15,000
B16	OR 211 from OR 99E to eastern UGB	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	Medium	$1,000,000
Service Collectors					
B17	Arney Road from Robin Avenue to OR 219	Shared street	Install shared lane markings and signs in coordination with ODOT	Low	$5,000
B18	Harvard Drive from Stacy Allison Way to Evergreen Road	Bike lanes	Enhance the parallel route of Harvard Drive from Stacy Allison Way to Evergreen Road in place of Stacy Allison Way. Install buffered bike lane striping on both sides of the roadway	Medium	$15,000
B19	Hayes Street from Harvard Drive to Cascade Drive	Bike lanes	Install bike lane striping. This project improves safe routes to school for Nellie Muir Elementary School	Medium	$35,000
B20	Hayes Street from Cascade Drive to Settlemier Avenue	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Nellie Muir Elementary School	Medium	$3,000,000
B21	Parr Road from western UGB to western City Boundary	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	High	Cost included in R5[2]
B22	Lincoln Street from Cascade Drive to Front Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	Medium	$20,000
B23	Lincoln Street from Front Street to OR 99E	Bike lanes	Install bike lane striping. This project improves safe routes to school for Washington Elementary School	High	$55,000
B24	Cleveland Street from Front Street to OR 99E	Shared street	Install shared lane markings and signs	Low	$15,000
B25	Hardcastle Avenue from Front Street to OR 99E	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	High	$15,000
B26	Brown Street from Cleveland Street to end of roadway	Shared street	Install shared lane markings and signs	Low	$20,000
B27	Cooley Road from OR 211 to Aubrey Way	Bike lanes	Widen roadway and install bike lanes	Medium	$1,300,000
B28	Cooley Road from Aubrey Way to Hardcastle Avenue	Bike lanes	Install bike lane striping	Medium	$15,000
Access Streets					
B29	Stubb Road from Harvard Drive to Parr Road	Shared street	Install shared lane markings and signs	Low	Cost included in R26[2]
B30	Astor Way from Country Club Road to OR 214	Shared street	Install shared lane markings and signs	Low	$15,000
B31	Tukwila Drive from Boones Ferry Road to Hazelnut Drive	Shared street	Install shared lane markings and signs	Low	$5,000
B32	5th Street from OR 214 to Garfield Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for St Luke's School	Medium	$20,000

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
B33	Gatch Street from Hardcastle Road to Cleveland Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	Medium	$15,000
B34	Park Avenue from OR 214 to Lincoln Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	Medium	$20,000
B35	Evergreen Road from Country Club Court to OR 214	Shared street	Install shared lane markings and signs	Low	$10,000
Local Streets					
B36	Country Club Road from Evergreen Road to Astor Way	Bike lanes	Install bike lane striping	Medium	$40,000
B37	Cascade Drive from OR 214 to Hayes Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School	Medium	$10,000
B38	Smith Drive from Hayes Street to Garfield Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School	Medium	$5,000
B39	Meridian Drive from Hazelnut Drive to OR 214	Shared street	Install shared lane markings and signs	Low	$10,000
B40[1]	City-wide	Wayfinding	Provide wayfinding to bike routes, multi-use paths, parks, schools, and other essential destinations	Medium	$30,000
				TOTAL High Priority Costs	**$8,125,000**
				TOTAL Medium Priority Costs	**$11,915,000**
				TOTAL Low Priority Costs	**$100,000**
				TOTAL Program Costs (20 years)	**$20,140,000**

1. Project not shown on Bicycle Plan Map.

2. Cost estimates are not included for projects that would be completed as part of a roadway project, such as locations where additional roadway width is needed to install bike lanes. The cost for these projects is included in the corresponding roadway projects described later in the memo.

3. The cost estimates presented to not include costs associated with right-of-way acquisition due to its high variability depending on location, parcel sizes, and other characteristics.



Bicycle Plan Projects
Woodburn, Oregon

Figure 1

PEDESTRIAN PLAN

A majority of city streets currently have sidewalks on at least one side of the roadway. The pedestrian plan includes several projects to construct new sidewalks where they are lacking and to fill in the gaps in the existing sidewalks along the city's streets. Although many of the pedestrian projects are located on Service Collector streets or higher, a few local street pedestrian projects are included to provide access to essential destinations such as schools, parks, churches, etc. The pedestrian plan also includes several enhanced pedestrian crossings as well as multi-use paths and accessways that augment and support the pedestrian system.

Table 3 identifies the pedestrian plan projects for the Woodburn TSP update. As shown, the projects are separated into projects based on roadway classification, as well as projects at intersections and in other locations throughout the city. The priorities shown in Table 3 are based on the project evaluation criteria as well as input from the project team and the general public. The cost estimates are based on average unit costs for roadway improvements. Figure 2 illustrates the location of the pedestrian plan projects.

Table 3: Pedestrian Plan Projects

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
Major Arterials					
P1	OR 219 from Butteville Road to Willow Avenue	New sidewalks	Install new sidewalks in coordination with ODOT	Medium	Cost included in R2[2]
P2	OR 99E from northern UGB to Lincoln Street	Street lighting	Evaluate light levels and install street lighting in coordination with ODOT	Medium	$700,000
P3	OR 99E from Lincoln Street to southern City Boundary	New sidewalks	Remove existing sidewalks and install new sidewalks in coordination with ODOT	Medium	Cost included in R4[2]
P4	OR 99E from southern City Boundary to southern UGB	New sidewalks	Install new sidewalks in coordination with ODOT	Medium	Cost included in R4[2]
Minor Arterials					
P5	Butteville Road/OR 219 from northern UGB to OR 219	New sidewalks	Install new sidewalks in coordination with ODOT	Medium	$1,500 ,000
P6	Butteville Road from OR 219 to southern UGB	New sidewalks	Install new sidewalks	Medium	Cost included in R6[2]
P7	Evergreen Road from Stacy Allison Way to Boean Lane	Sidewalks - Fill in gaps	Fill in the gaps	High	$200,000
P8	Boones Ferry Road from northern UGB to Hazelnut Drive	New sidewalks	Install new sidewalks on one side	Medium	$150 ,000
P9	Settlemier Avenue from Oak Street to Parr Road	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Nellie Muir Elementary School, Heritage Elementary School, and Valor Middle School	High	$300,000

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
P10	Boones Ferry Road from Parr Road to southern UGB	New sidewalks	Install new sidewalks. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	High	$800,000
P11	Front Street from northern UGB to Hazelnut Drive	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Woodburn High School	High	$400,000
P12	Young Street	Sidewalks - Fill in gaps	Fill in the gaps	Medium	$200,000
P13	OR 211 from OR 99E to eastern UGB	New sidewalks	Install new sidewalks in coordination with ODOT	Medium	$500,000
Service Collectors					
P14	Hayes Street from Harvard Drive to Settlemier Avenue	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Nellie Muir Elementary School	High	$600,000
P15	Parr Road from western UGB to western City Boundary	New sidewalks	Install new sidewalks. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	High	Cost included in R5[2]
P16	Lincoln Street from Cascade Drive to OR 99E	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	High	$450,000
P17	Industrial Avenue from Progress Way to OR 99E	New sidewalks	Install new sidewalks	Medium	$500,000
P18	Progress Way from Industrial Avenue to OR 214	New sidewalks	Install new sidewalks	Medium	$850,000
P19	Hardcastle Avenue from Front Street to Cooley Road	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	High	$450,000
P20	Brown Street from Cleveland Street to end of roadway	Sidewalks - Fill in gaps	Fill in the gaps	Medium	Cost included in R7[2]
P21	Cooley Road from OR 211 to Hardcastle Avenue	Sidewalks - Fill in gaps	Fill in the gaps	Medium	$650,000
Access Streets					
P22	Woodland Avenue from Jory Street to Arney Road	New sidewalks	Install new sidewalks on one side	Medium	$250,000
P23	Stubb Road from Harvard Drive to Parr Road	New sidewalks	Install new sidewalks	Medium	Cost included in R26[2]
P24	Oregon Way from Country Club Road to OR 214	New sidewalks	Install new sidewalks	Medium	$250,000
P25	Hazelnut Drive from Graystone Drive to Front Street	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Woodburn High School	High	$150,000
P26	Gatch Street from Hardcastle Road to Cleveland Street	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	High	$350,000
P27	Park Avenue from Hardcastle Avenue to Lincoln Street	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Washington Elementary School	High	$65,000
Local Streets					
P28	Willow Avenue from McNaught Road to OR 219	New sidewalks	Install new sidewalks on both sides	Medium	$350,000

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
P29	Cascade Drive from OR 214 to Hayes Street	New sidewalks	Install new sidewalks. This project improves safe routes to school for Nellie Muir Elementary School	High	$400,000
P30	Ben Brown Lane from end of roadway to Boones Ferry Road	Sidewalks - Fill in gaps	Fill in the gaps	Medium	$200,000
P31	Oak Street from Boones Ferry Road to Front Street	New sidewalks	Install new sidewalks on one side	Medium	$150,000
P32	Ogle Street from Cleveland Street to Boones Ferry Road	New sidewalks	Install new sidewalks on one side	Medium	$900,000
Pedestrian Crossing Enhancements					
P33	Front Street/Young Street	Enhanced crossing	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection	Medium	$15,000
P34	Front Street/Lincoln Street	Enhanced crossing	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection. This project improves safe routes to school for St Luke's School	High	$15,000
P35	Cascade Drive/Hayes Street	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Nellie Muir Elementary School	High	$65,000
P36	Park Avenue/Legion Park Driveway	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves access to Legion Park	Medium	$65,000
P37	Hazelnut Drive/Broadmoor Place Accessway	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Woodburn High School	High	$65,000
P38	OR 214/N Bulldog Drive	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, update the existing crossing to an enhanced pedestrian crossing with a pedestrian hybrid beacon coordinated with the surrounding traffic signals in coordination with ODOT. This project improves safe routes to school for Woodburn High School	High	$150,000
P39	OR 99E from OR 214 to Young Street	Enhanced crossing – Signalized intersection	As identified in the Highway 99E Corridor Plan, install countdown pedestrian timers and construct ADA enhancements at key signalized intersections along OR 99E in coordination with ODOT, including: • OR 214/OR 211 • Hardcastle Avenue • Lincoln Road • Young Street	Medium	$605,000
P40	OR 99E from OR 214 to Young Street	Enhanced crossing	As identified in the Highway 99E Corridor Plan, install curb extensions on minor street legs of intersections (curb extensions to shorten pedestrian crossing distances parallel to OR 99E, not for crossing of OR 99E) between Arlington Street and Cleveland Street (up to 8 locations) in coordination with ODOT. Potential locations include: • Alexandria Avenue • James Street • Williams Street • Blaine Street • Aztec Drive • Laurel Avenue • Tomlin Avenue	Medium	$950,000

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
P41	OR 99E, north of Williams Street	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).	High	$75,000
P42	OR 99E, between NE Laurel Avenue and Tomlin Avenue	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).	High	$75,000
P43	OR 99E, between Blaine Street and Aztec Drive	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).	High	$75,000
P44	OR 99E, north of Mount Jefferson Avenue	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).	Medium	$75,000
P45	OR 99E, north of James Street	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).	Medium	$75,000
P46	Boones Ferry Road/Constitution Avenue/Tukwila Drive	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Woodburn High School	High	$65,000
Multi-use Pathways					
P47	Mill Creek Greenway	Multi-use pathway	As identified in the Mill Creek Greenway Master Plan, construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: • Hazelnut Drive • Bulldog Drive (east crossing) • OR 214 (state highway) • Hardcastle Avenue • Lincoln Street • Young Street • Cleveland Street and railroad tracks This project improves safe routes to school for Woodburn High School	High	$2,000,000

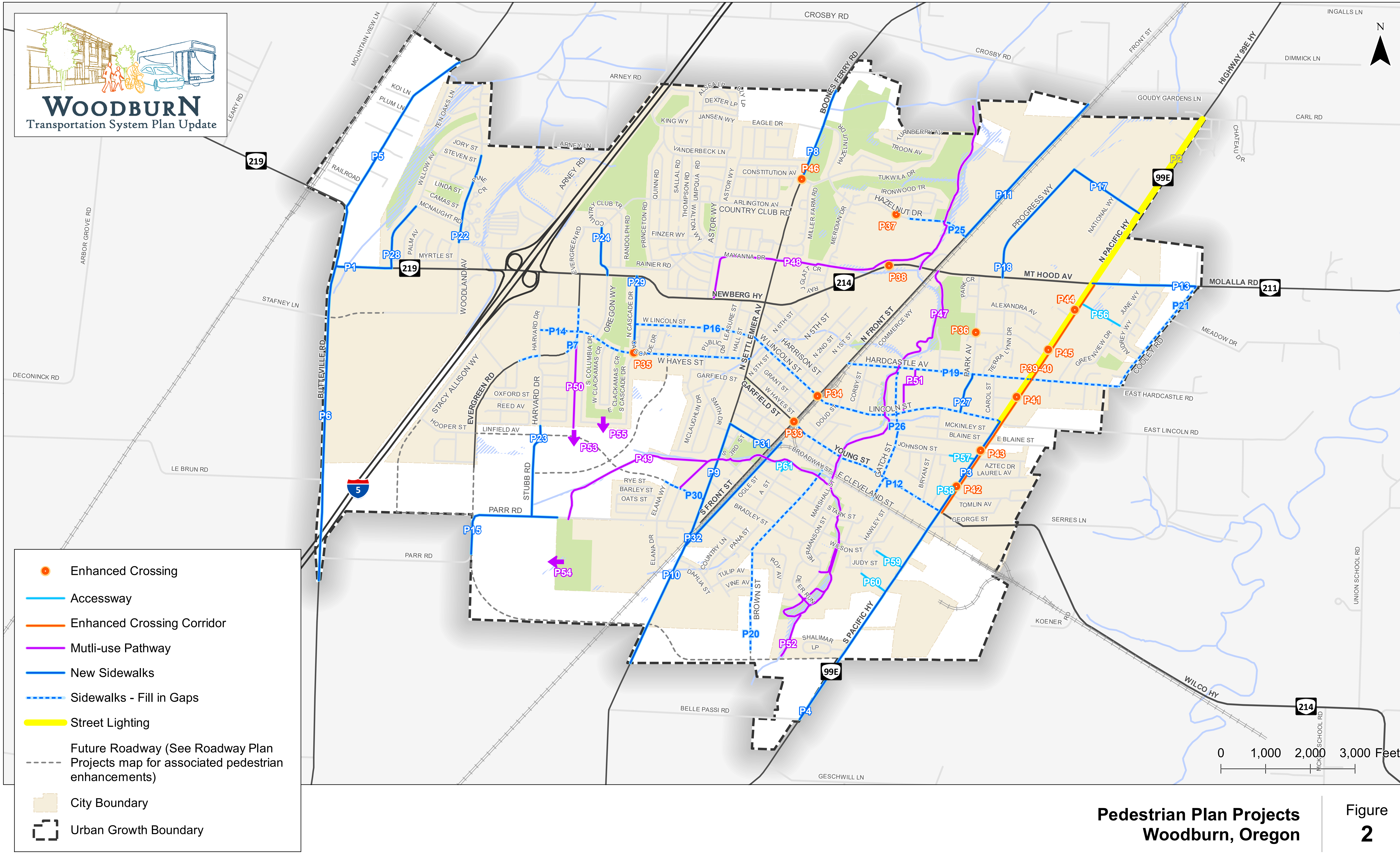
Project Number	Location	Type	Description	Priority	Cost Estimate[3]
P48	Mill Creek Greenway – Northern tributary	Multi-use pathway	As identified in the Mill Creek Greenway Master Plan, construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: • Bulldog Drive (west crossing) • Meridian Drive • Boones Ferry Road This project improves safe routes to school for Woodburn High School, Lincoln Elementary School, and French Prairie Middle School	Medium	$700,000
P49	Mill Creek Greenway – Western tributary	Multi-use pathway	As identified in the Mill Creek Greenway Master Plan, construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: • Parr Road • Ben Brown Lane • Settlemier Avenue • Front Street and railroad tracks This project improves safe routes to school for Heritage Elementary School and Valor Middle School	Medium	$900,000
P50	Evergreen Road Multi-Use Path	Multi-use pathway	Construct a multi-use path extending from Evergreen Road south to planned Mill Creek Greenway	Medium	$150,000
P51	Washington Elementary School Multi-Use Path	Multi-use pathway	As identified in the Highway 99E Corridor Plan, construct a north-south multi-use path connection between Hardcastle Avenue and Lincoln Street, west of Washington Elementary School. This project improves safe routes to school for Washington Elementary School	Medium	$90,000
P52	Mill Creek Greenway - Southern extension	Multi-use pathway	As identified in the Highway 99E Corridor Plan, construct extension of Mill Creek Greenway multi-use path to Belle Passi Road	Medium	$90,000
P53	Evergreen Road Pedestrian Connection	Multi-use pathway	Construct a connection between the Evergreen Road multi-use path and pedestrian facilities that are part of future development to the south	Medium	$20,000
P54	Centennial Park Pedestrian Connection	Multi-use pathway	Construct a connection between the Centennial Park multi-use path and pedestrian facilities that are part of future development to the west	Medium	$20,000
P55	Santiam Drive Pedestrian Connection	Multi-use pathway	Construct a connection between Santiam Drive and pedestrian facilities that are part of future development to the south	Medium	$20,000
Off-street Improvements					
P56	June Way Accessway	Accessway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E (near the Audrey Way intersection), may not connect directly as it runs parallel to OR 99E	Low	$80,000
P57	Johnson Street Accessway	Accessway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E	Low	$45,000

Project Number	Location	Type	Description	Priority	Cost Estimate[3]
P58	Elm Street Accessway	Accessway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E, may not connect directly as it runs parallel to OR 99E	Low	$25,000
P59	Wilson Street Accessway	Accessway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E	Low	$55,000
P60	Hawley Street Accessway	Accessway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E (possibly part of future street extension), may not connect directly as it runs parallel to OR 99E	Low	$55,000
P61	A Street Accessway	Accessway	Install a new accessway that connects A Street north to Cleveland Street and/or Mill Creek Greenway (western tributary).	Low	$25,000
P62[1]	City-wide	Wayfinding	Provide wayfinding to bike routes, multi-use paths, parks, schools, and other essential destinations	Medium	$30,000
TOTAL High Priority Costs					**$6,750,000**
TOTAL Medium Priority Costs					**$10,300,000**
TOTAL Low Priority Costs					**$285,000**
TOTAL Program Costs (20 years)					**$17,335,000**

1. Project not shown on Pedestrian Plan Map

2. Cost estimates are not included for projects that would be completed as part of a roadway project, such as locations where roadway widening will relocate the curb and require new sidewalks to be installed. The cost for these projects is included in the corresponding roadway projects described later in the memo.

3. The cost estimates presented to not include costs associated with right-of-way acquisition due to its high variability depending on location, parcel sizes, and other characteristics.



Pedestrian Plan Projects
Woodburn, Oregon

Figure 2

Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

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ROADWAY PLAN

The street system within Woodburn is largely built-out within the city boundary, and there are few opportunities to construct new roadways unless initiated by new development and zone changes. However, there are several operational issues under existing and projected future traffic conditions. Therefore, the roadway plan includes projects based on street system connectivity, capacity of key intersections and segments, and safety.

Functional Classification

The proposed change to the functional classification of roadways within Woodburn was determined based on a review of the existing Woodburn TSP and expected development in southwest Woodburn. Table 4 summarizes the proposed change in functional classification.

Table 4: Proposed Change in Functional Classification

Street	Segment	Existing Classification	Future Classification
Ben Brown Lane	Settlemier Avenue to Elans Way	Local	Access

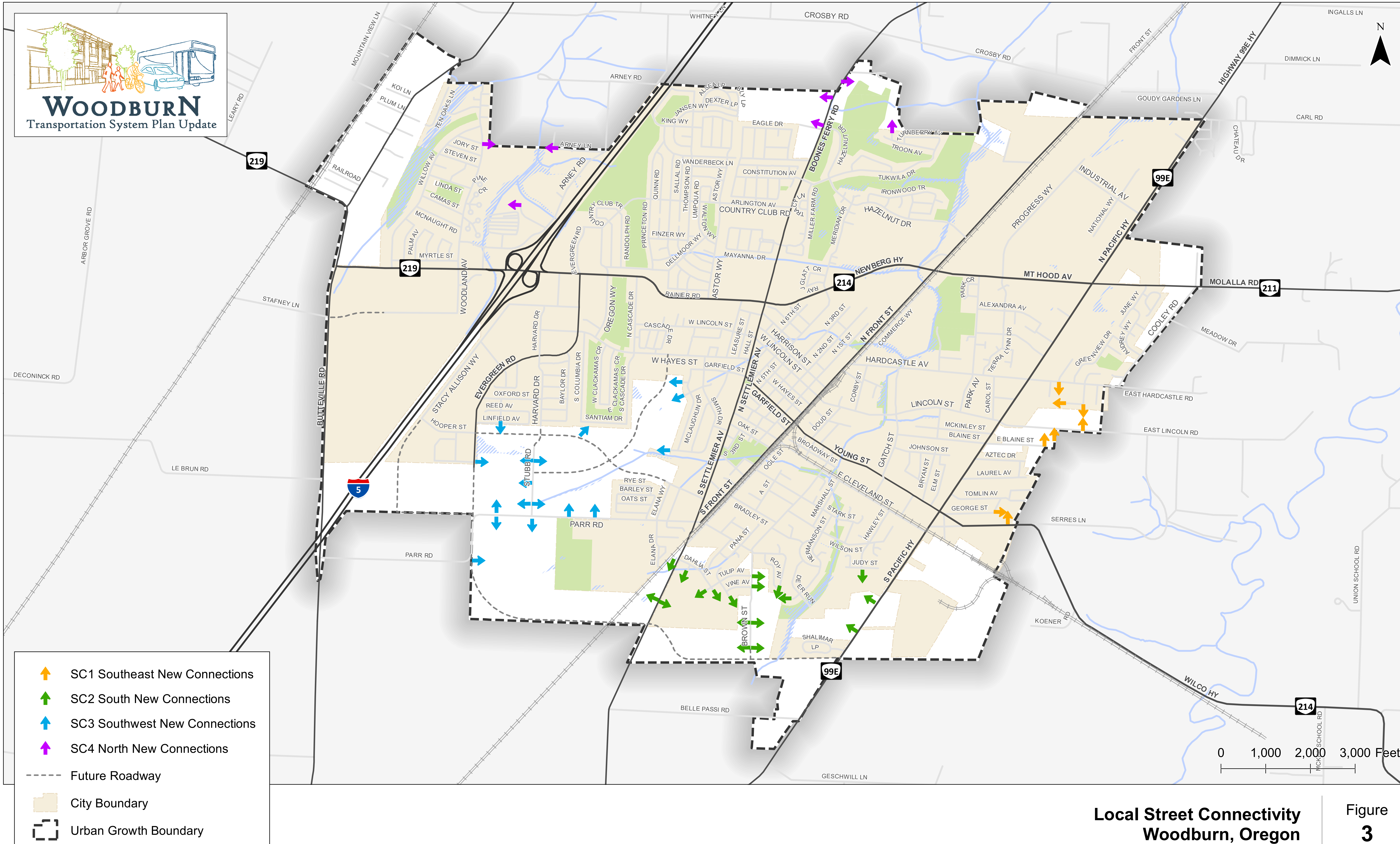
Street System Connectivity

As indicated above, the street system within Woodburn is largely built-out. Therefore, there are limited opportunities for new arterial, Service Collector, or Access Streets. However, there are opportunities for new local streets in select areas throughout the city that could improve access and circulation for all travel modes.

Figure 3 illustrates the general location of the local street connections identified for the Woodburn TSP update. Roadway alignments for each connection are not provided as they are anticipated to be determined as part of future development. Table 5 summarizes the connections and identifies their priority based on the project evaluation criteria. Costs are not provided for these projects as they are anticipated to be constructed by future development. Any local street connectivity projects that are desired to be city-initiated projects should be identified as a high priority and included in the cost-constrained plan.

Table 5: Street Connections by Priority

Project Number	Location	Type	Description	Priority
SC1	Southeast Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	Medium
SC2	South Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	Medium
SC3	Southwest Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	Medium
SC4	North Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	Medium



Local Street Connectivity
Woodburn, Oregon

Figure
3

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

Roadway Capacity

The roadway capacity projects developed for the Woodburn TSP update are summarized in Table 6 and shown in Figure 4. These projects are intended to address existing and projected future transportation system needs for motor vehicles as well as all other modes of transportation that depend on the roadway system for travel, such as pedestrians, bicyclists, transit users, and truck freight.

Table 6: Roadway Plan Projects

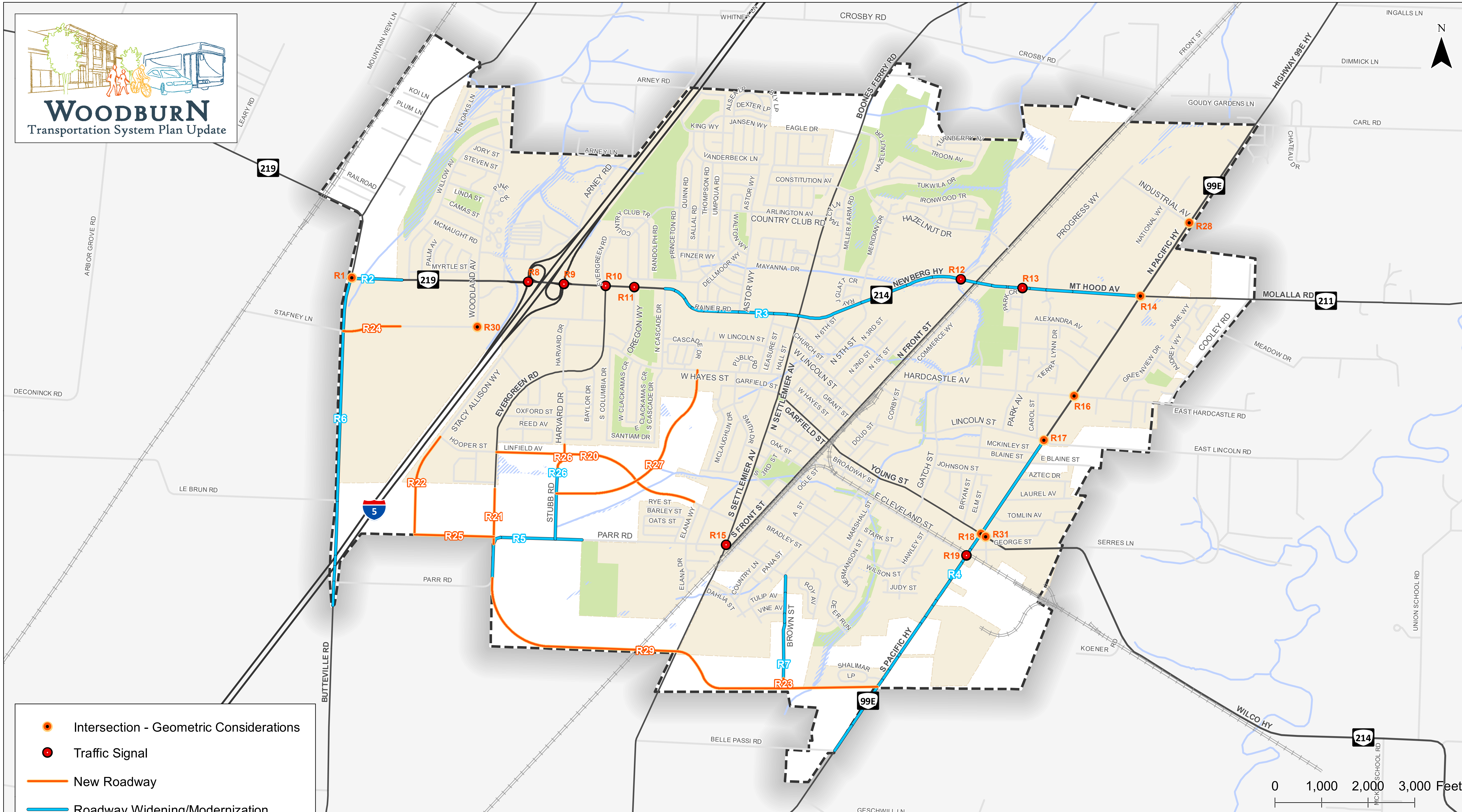
Project Number	Location	Type	Description	Priority	Cost Estimate[2]
R1	Southern OR 219/Butteville Road Intersection	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) in coordination with ODOT	High	$2,750,000
R2	OR 219 from Butteville Road to Willow Road	Street design	Widen roadway to include two lanes in each direction and a two-way left-turn lane (in conjunction with pedestrian and bicycle facility improvements) in coordination with ODOT	High	$1,700,000 (Cost includes B1 and P1)
R3	OR 214 from Cascade Drive to OR 99E	Street design	Widen roadway to include two lanes in each direction and a two-way left-turn lane, including changes to signal timing as appropriate, in coordination with ODOT (and in conjunction with bicycle facility improvements)	Medium	$20,300,000 (Cost includes B2)
R4	OR 99E from Lincoln Street to south UGB	Street design	As identified in the Highway 99E Corridor Plan, widen roadway to provide a continuous two-way left-turn lane and wider shoulders, including changes to signal timing as appropriate, in coordination with ODOT (and in conjunction with pedestrian and bicycle facility improvements)	Medium	$12,300,000 (Cost includes B3, B4, P3, and P4)
R5	Parr Road from western UGB to western City Boundary	Street design	Upgrade to Service Collector urban standards including bicycle and pedestrian enhancements	Low	$0[1] (Project includes B21 and P15)
R6	Butteville Road from OR 219 to southern UGB	Street design	Upgrade to Minor Arterial urban standards including bicycle and pedestrian enhancements	Low	$0[1] (Project includes B7 and P6)
R7	Brown Street from Comstock Avenue to end of roadway	Street design	Upgrade to Service Collector urban standards including bicycle and pedestrian enhancements	Low	$0[1] (Project includes P20)
R8	OR 214/I-5 Southbound Ramp Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	Medium	$15,000
R9	OR 214/I-5 Northbound Ramp Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	Medium	$15,000
R10	OR 214/Evergreen Road Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	Medium	$15,000
R11	OR 214/Oregon Way/Country Club Road Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	Medium	$15,000
R12	OR 214/Front Street Ramp Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT	Medium	$500,000
R13	OR 214/Park Street Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT	Medium	$500,000

Project Number	Location	Type	Description	Priority	Cost Estimate[2]
R14	OR 214/OR 211/OR 99E Intersection	Intersection - geometric considerations	Install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing in coordination with ODOT	Medium	$900,000
R15	Parr Road/Settlemier Avenue Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout	Low	$500,000
R16	OR 99E/Hardcastle Avenue Intersection	Intersection - geometric considerations	Reconfigure the westbound approach to incorporate one left-turn lane and one thru-right turn lane in coordination with ODOT	Medium	$20,000
R17	OR 99E/Lincoln Street Intersection	Intersection - geometric considerations	Install a shared through-right turn lane on the eastbound approach and reconfigure the existing approach lane as a separate left-turn lane in coordination with ODOT	Medium	$500,000
R18	OR 99E/Young Street Intersection	Intersection - geometric considerations	As identified in the Highway 99E Corridor Plan, install a third westbound lane to provide separate left, thru, and right turn lanes in coordination with ODOT. Implement protected-permissive left-turn phasing on the eastbound and westbound approaches.	Medium	$550,000
R19	OR 99E/Cleveland Street Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT. Consideration should be given to railroad preemption and the proximity to the signalized intersection at OR 99E and Young Street.	Medium	$500,000
R20	Ben Brown Lane	New roadway	Extend Ben Brown Lane to Evergreen Road as an Access Street	Medium	$5,100,000
R21	Evergreen Road	New roadway	Extend south to Parr Road	High	$4,750,000
R22	Stacy Allison Way	New roadway	Extend south to UGB	Medium	$7,300,000
R23	Brown Street	New roadway	Extend south to the South Arterial	Medium	$800,000
R24	Woodland Avenue	New roadway	Extend west to Butteville Road	Medium	$2,450,000
R25	East-west Connection in Southwest Woodburn	New roadway	Construct a new Local Industrial Street connecting the southern extensions of Stacy Allison Way and Evergreen Road	Medium	$1,800,000
R26	Stubb Road from Harvard Drive to Parr Road	Street design and new roadway	Upgrade the existing roadway to Access Street standards and extend north to Harvard Drive including bicycle and pedestrian enhancements	Medium	$1,900,000
R27	North-south Connection in Southwest Woodburn	New roadway	Construct a new Access Street connecting Hayes Street to Stubb Street	Medium	$5,150,000
R28	OR 99E/Industrial Avenue Intersection	Intersection - geometric considerations	Evaluate the intersection layout, control, signing, and striping, including any sight distance constraints in coordination with ODOT	Medium	$100,000
R29	South Arterial	New roadway	Construct the Southern Arterial from Evergreen Road to OR 99E (2 lanes)	Medium	$12,250,000

Project Number	Location	Type	Description	Priority	Cost Estimate[2]
R30	Woodland Avenue Curve Modification	Intersection - geometric considerations	Modify the intersection layout to address truck turning movement constraints	Medium	$100,000
R31	George Street/Hillsboro Silverton Highway Intersection	Intersection - geometric considerations	As identified in the Highway 99E Corridor Plan, close vehicular access to George Street from Hillsboro Silverton Highway when future local street access is provided to the east	Medium	$60,000
				TOTAL High Priority Costs	**$9,200,000**
				TOTAL Medium Priority Costs	**$73,140,000**
				TOTAL Low Priority Costs	**$500,000**
				TOTAL Program Costs (20 years)	**$82,840,000**

1. Project to be funded by others

2. The cost estimates presented to not include costs associated with right-of-way acquisition due to its high variability depending on location, parcel sizes, and other characteristics.



- Intersection - Geometric Considerations
- Traffic Signal
- New Roadway
- Roadway Widening/Modernization
- City Boundary
- Urban Growth Boundary

Roadway Plan Projects
Woodburn, Oregon

Figure
4

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

Traffic Safety

Traffic safety has a significant impact on how people use the transportation system within Woodburn, particularly in areas where real or perceived safety risks prevent people from using more active travel modes, such as walking, biking, and taking transit. The traffic safety solutions identified in *Tech Memo 5* are largely focused on systemic issues that occur along roadways and at intersections throughout the city. Table 6 identifies the traffic safety projects that will be included in the Woodburn TSP update. Additional safety projects and improvements were identified as part of the pedestrian, bicycle, transit, and motor vehicle plans earlier in this memorandum. Figure 5 illustrates the traffic safety plan projects.

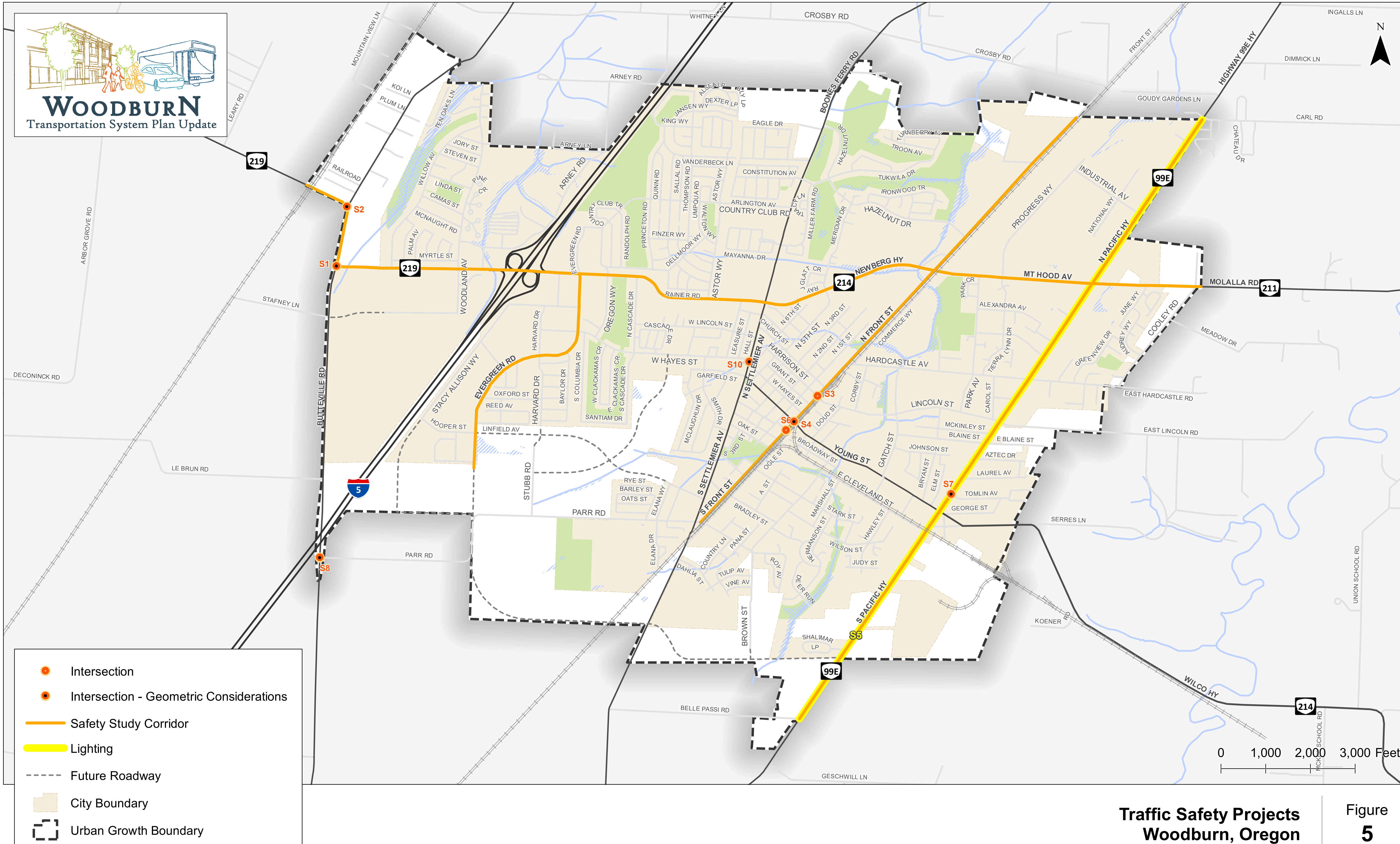
Table 7: Traffic Safety Projects

Project Number	Location	Type	Description	Priority	Cost Estimate[2]
S1	Southern OR 219/Butteville Road	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) if/when warranted and in coordination with ODOT	High	Cost included in R1
S2	Northern OR 214/Butteville Road Intersection	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) if/when warranted and in coordination with ODOT	Medium	$500,000 to $2,000,000[1]
S3	Front Street/Lincoln Street Intersection	Intersection	Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)	Medium	$50,000
S4	Front Street/Young Street/Garfield Street Intersection	Intersection - geometric considerations	Evaluate the intersection layout, signing, and striping in correlation to the railroad tracks. Provide clarification for westbound drivers trying to proceed through the intersection	Medium	$100,000
S5	OR 99E	Lighting	As identified in the Highway 99E Corridor Plan, update roadway lighting to meet ODOT roadway lighting standards in coordination with ODOT	Medium	$2,150,000
S6	OR 99E access between Young Street and Cleveland Street	Intersection	As identified in the Highway 99E Corridor Plan and in coordination with ODOT: Restrict left-turn movements and eventually close the Silverton Avenue intersection on OR 99E and vacate the segment of Silverton Avenue between OR 99E and Birds Eye Avenue Restrict left-turn movements onto Birds Eye Avenue from Hillsboro Silverton Highway and eventually close the Birds Eye Avenue intersection on Hillsboro Silverton Highway and vacate the segment of Birds Eye Avenue between Hillsboro Silverton Highway and Silverton Avenue	Medium	$60,000
S7	OR 99E/Tomlin Avenue	Intersection - geometric considerations	Evaluate the intersection layout, signing, and striping in coordination with ODOT, including any sight distance constraints. Consider restricting the southbound left-turn movement	High	$100,000
S8	Butteville Road/Parr Road	Intersection - geometric considerations	Modify intersection to address existing sight distance and geometric limitations	Medium	$100,000,000

Project Number	Location	Type	Description	Priority	Cost Estimate[2]
S9	City-wide	Study	Evaluate traffic safety along OR 99E, OR 219/OR214, Front Street, Evergreen Road, and other key corridors to identify appropriate countermeasures	Low	$100,000
S10	Settlemier Avenue/Hayes Street	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements)	High	$500,000 to $2,000,000[1]
TOTAL High Priority Costs					**$2,100,000**
TOTAL Medium Priority Costs					**$5,360,000**
TOTAL Low Priority Costs					**$100,000**
TOTAL Program Costs (20 years)					**$7,560,000**

1. A cost estimate range is provided to allow for a design project to determine the appropriate intersection control using additional data, such as right-of-way information and surrounding environmental conditions. $500,000 is the planning-level cost estimate if a traffic signal is determined, and $2,000,000 is the planning-level cost estimate if a roundabout is determined. The higher cost estimate was included in all totals.

2. The cost estimates presented to not include costs associated with right-of-way acquisition due to its high variability depending on location, parcel sizes, and other characteristics.



Traffic Safety Projects
Woodburn, Oregon

Figure
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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Woodburn, Oregon Department of Transportation

TRANSIT PLAN

Public transit can provide important connections to destinations for people that do not drive or bike and can provide an additional option for all transportation system users. Public transit complements walking, bicycling, or driving trips: users can walk to and from transit stops and their homes, shopping or work places, people can drive to park-and-ride locations to access a bus, or people can bring their bikes on transit vehicles and bicycle from a transit stop to their final destination.

Providing transit service in smaller cities is generally led by a local or regional transit agency and relies on appropriate land uses and densities that can support transit service. The city can plan for transit-supportive land use patterns and support future transit viability by designing and building streets that will comfortably accommodate transit stops and include the right-of-way that could allow for transit stops to be located as close as possible to important destinations in the city. At a minimum, a transit stop should be well-signed and have a comfortable space to wait. Benches and shelter from the weather can improve user comfort and including bike parking near bus stops allows people to leave their bike at one trip-end instead of taking it with them on the bus.

Public transit service within Woodburn is provided by Woodburn Transit Service, supplemented by regional service provided by Cherriots Regional and Canby Area Transit. In addition to coordinating as needed with local and regional transit agencies to help implement their planned service enhancements, the City of Woodburn can support improved transit service by providing easy and safe walking and bicycling connections between key roadways, neighborhoods, and local destinations; by providing amenities, such as shelters and benches, at transit stops; by encouraging an appropriate mix and density of uses that support public transit; and by providing and planning for park-and-ride locations. Table 8 summarizes the transit plan identified for Woodburn.

Table 8: Transit Plan

Project Number	Location	Agency Responsible	Description	Priority	Cost Estimate
T1	Woodburn Fleet	Woodburn Transit	Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Purchase of Category B and C vehicles (1 each) for use in the City's expanded transit services. (100% funding level 2020-21)	Medium	$5,000
T2	Woodburn Fleet	Woodburn Transit	Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Purchase a Category B vehicle that will replace the second oldest full-size vehicle in the WTS fleet; will be used for the City's existing local fixed route circulator. (130% funding level 2021)	Medium	$5,000

Project Number	Location	Agency Responsible	Description	Priority	Cost Estimate
T3	Woodburn Fixed Route	Woodburn Transit	Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Addition of weekend service for Woodburn Transit Service fixed route and paratransit services (Sat. 9am-5pm, Sun.9am-3pm) by up to 2,156 revenue hours (FY20-21). (100% funding level 2020-21)	Medium	$5,000
T4	Woodburn Fixed Route	Woodburn Transit	Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Modify the existing 60-minute fixed route loop; add an additional 30-minute route that will serve high frequency stops on weekdays (7am-7pm) within the Woodburn city limits. Total additional service will be up to 6,192 revenue hours (FY20-21). (100% funding level 2020-21)	Medium	$5,000
T5	Woodburn Fixed Route	Woodburn Transit	Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Modify the existing 60-min. fixed route by adding a new 30 min. route that serves high frequency stops (up to 1,456 revenue hours); this service will operate Saturdays (9am-5pm) and Sundays (9am-3pm). Also includes Dial-a-Ride (DAR) service. (130% funding level 2020-21)	Medium	$5,000
T6	Woodburn Fixed Route	Woodburn Transit	Increase frequency of existing route to 30 minutes	Medium	$0[1]
T7	Woodburn Fixed Route	Woodburn Transit	Convert existing route to two-way operations	Medium	$0[1]
T8	City-wide	Woodburn Transit	Work with Woodburn Transit as growth occurs to provide new or re-routed service to other areas of Woodburn including: • Parr Road via an extension of Evergreen Road • Crosby Road • Butteville Road • The employment center southwest of the I-5/OR 214 interchange • Woodburn Industrial Park along the Progress Way and Industrial Avenue corridors • Gateway subarea between Front Street and Mill Creek • Neighborhoods in southeast Woodburn	Medium	$5,000
T9	Woodburn Company Stores	Woodburn Transit	Coordinate with Woodburn Transit to establish a free shuttle between the Woodburn Company Stores and Downtown Woodburn, hourly during peak shopping and entertainment hours	Medium	$5,000
T10	City-wide	Woodburn Transit	Coordinate with Woodburn Transit and major employers to establish a peak-only employer shuttle	Medium	$5,000
T11	Urban and Rural Cherriots Regional Services	Cherriots	Coordinate with Cherriots to deliver service enhancements funded through the STIF: Expand service for up to 7,557 revenue hours on urban & rural Regional services. Includes startup costs for hiring new employees, and coordination of schedules with connecting services. Also establishes a Youth fare category (ages 6-18).(100% funding level 2020-21)	Medium	$5,000

Project Number	Location	Agency Responsible	Description	Priority	Cost Estimate
T12	Keizer to Wilsonville	Cherriots	Coordinate with Cherriots to deliver service enhancements funded through the STIF: Establish one new Regional route from Keizer to Wilsonville with a stop at the Woodburn Memorial Park and Ride. Increase service on weekdays by 30 percent on urban & rural Regional services by up to 5,245 revenue hours. (130% funding level 2020-21)	Medium	$5,000
T13	Urban and Rural Cherriots Regional Services	Cherriots	Coordinate with Cherriots to deliver service enhancements funded through the STIF: Add Saturday service to urban & rural Cherriots Regional services with up to 3,919 revenue hours of new service (FY20-21). Includes coordination of schedules with other connecting services. (100% funding level 2020-21)	Medium	$5,000
T14	Urban and Rural Cherriots Regional Services	Cherriots	Coordinate with Cherriots to deliver service enhancements funded through the STIF: Add 30 percent more Saturday service to urban & rural Regional services by up to 215 revenue hours (FY20-21). In FY21, adds 6 holidays to the same routes. Includes coordination of schedules with connecting services. (130% funding level 2020-21)	Medium	$5,000
T15	City-wide	Woodburn Transit and Cherriots	Coordinate transfers between the different agency services in Woodburn	Medium	$5,000
T16	Woodburn	Cherriots	Coordinate with Cherriots to provide a stop in Woodburn for SMART Route 1X, providing service to WES station in Wilsonville and downtown Salem	Medium	$5,000
T17	Woodburn to Portland	Cherriots	Coordinate with Cherriots to consider further new service connections for Woodburn including: • Service to Portland - connect to TriMet via the Tualatin Park-and-Ride, directly into downtown Portland, or the MAX Orange Line light rail service. • Demand-responsive service to Hubbard one day per week	Medium	$5,000
T18	City-wide	Woodburn Transit and Cherriots	Evaluate all bus stops to verify static bus route information signage is visible and accessible and that bike racks are available at major bus stops	Medium	$25,000
T19	Stop 755016: Walmart	Woodburn Transit	New shelter	Low	$5,000
T20	Stop 20419: Garfield Street	Woodburn Transit	New shelter	Low	$5,000
T21	City-wide	Woodburn Transit	Investigate transferring the paratransit system to a local social service agency	Low	$5,000
				TOTAL High Priority Costs	**$0**
				TOTAL Medium Priority Costs	**$100,000**
				TOTAL Low Priority Costs	**$15,000**
				TOTAL Program Costs (20 years)	**$115,000**

1. Project to be funded by others.

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSMO) PLAN

Transportation System Management and Operations (TSMO) is a set of integrated transportation solutions intended to improve the performance of existing transportation infrastructure. Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies are two complementary approaches to managing transportation and maximizing the efficiency of the existing system. TDM addresses the *demand* on the system: the number of vehicles traveling on the roadways each day. TDM measures include any method intended to shift travel demand from single occupant vehicles to non-auto modes or carpooling, travel at less congested times of the day, etc. TSM addresses the *supply* of the system: using strategies to improve the system efficiency without increasing roadway widths or building new roads. TSM measures are focused on improving operations by enhancing capacity during peak times, typically with advanced technologies to improve traffic operations.

Transportation System Management (TSM)

Transportation System Management (TSM) focuses on low cost strategies that can be implemented within the existing transportation infrastructure to enhance operational performance. Finding ways to better manage transportation while maximizing urban mobility and treating all modes of travel as a coordinated system is a priority. TSM strategies include traffic signal timing and phasing, traffic signal coordination, traffic calming, access management, local street connectivity and intelligent transportation systems (ITS). Traffic signal coordination and ITS typically provide the most significant tangible benefits to the traveling public. The primary focus of TSM measures are region-wide improvements, however there are a number of TSM measures that could be used in a smaller-scale environment such as within the City of Woodburn. TSM projects and programs that are recommended for the City of Woodburn to explore include the following:

- Update signal timing plans and coordinate signals to better match prevailing traffic conditions
    - OR 99E from Hardcastle Avenue to Young Street (or to the potential future Cleveland Street traffic signal) is one candidate corridor for coordination, as identified in the Highway 99E Corridor Plan
- Implement truck signal priority at key signalized intersections along OR 214 and OR 99E
- Work with ODOT to develop and implement a Traffic Management Plan for the OR 99E corridor that responds to increased congestion resulting from incidents on I-5 and regional events, as identified in the Highway 99E Corridor Plan

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a policy tool as well as a general term used to describe any action that removes single occupant vehicle trips from the roadway during peak travel demand periods. As growth in the City of Woodburn occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this potential growth in trips.

Tech Memo 5 identifies several policies and programs that may be effective for managing transportation demand in the City of Woodburn, especially within the next 10 to 20 years. Table 10 summarizes the strategies that best meet the goals and objectives of the TSP update. As with all new public and private investments, the implementation of TDM strategies is sure to draw opposition from some. Given Woodburn's lack of experience with TDM strategies, it is important that decision-makers understand their long-term costs and benefits and are able evaluate these along-side arguments from opponents in achieving outcomes that best reflect the City's vision and goals while effectively reducing travel demand.

Table 9: Transportation Demand Management Program Strategies

Program/Project Number	Name	Description	Priority	Cost Estimate
TDM1	Carpool/Vanpool Match Services	Coordinate a rideshare/carpool/vanpool program that regional commuters can use to find other commuters with similar routes to work	Low	$5,000/year
TDM2	Carpool/Vanpool Parking Program	Coordinate with employers to designate carpool/vanpool preferential parking	Low	$5,000/year
TDM3	Collaborative Marketing	Work with nearby cities, employers, transit service providers, and developers to collaborate on marketing for transportation options that provide an alternative to single-occupancy vehicles	Medium	$5,000/year
TDM4	Limited and/or Flexible Parking Requirements	Update the Woodburn Development Ordinance to include strategies that encourage multi-modal transportation	High	$25,000
TDM5	Parking Management	Modify the City's current parking policy to allow for the potential to charge for parking	Low	$10,000
TDM6	Transit Fare Subsidies	Work with Woodburn Transit to provide transit fare subsidies	Low	$5,000
TDM7	Employer TDM Measures	Work with employers to encourage TDM measures such as allowing employees to work at home one day a week and scheduling shift changes to occur outside of peak travel periods	Low	$5,000/year
			TOTAL High Priority Costs	**$25,000**
			TOTAL Medium Priority Costs	**$100,000**
			TOTAL Low Priority Costs	**$315,000**
			TOTAL Program Costs (20 years)	**$440,000**

Other potential TDM projects include:

- Encourage the development of high-speed communication in all part of the city (fiber optic, digital cable, DSL, etc). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.

Land Use

The types and intensities of land uses are closely correlated with travel demand. Land use patterns in many areas of the city are suburban in nature with low densities throughout the city and more industrial and commercial uses in the eastern part of the city near OR 99E. In the future the city will continue to have a mixture of housing and industrial densities, as well as areas of mixed-use development (i.e., a mix of residential, retail, commercial and/or office uses). *Tech Memo 5* identifies several land use strategies that could be implemented in Woodburn. Table 11 summarizes the strategies that best meet the goals and objectives of the TSP update.

Table 10: Land Use Projects

Project Number	Name	Description	Priority	Cost Estimate
LU1	Commercial and Mixed-use Nodes	Establish neighborhood commercial and mixed-use nodes within the city	Low	$25,000
LU2	Alternative Mobility Standards	Work with ODOT to develop alternative mobility standards at the I-5 interchange ramps	Low	$25,000
LU3	Right-of-way Dedications	Through development, right-of-way dedications should be provided to facilitate the future planned transportation system in the vicinity of the proposed development	Low	$0[1]
LU4	Half-street Improvements	Through development, half-street improvements (sidewalks, curb and gutter, bicycle lanes/paths, and/or travel lanes) should be provided along all site frontages that do not have full buildout improvements in place at the time of development	High	$0[1]
TOTAL High Priority Costs				**$0**
TOTAL Medium Priority Costs				**$0**
TOTAL Low Priority Costs				**$50,000**
TOTAL Program Costs (20 years)				**$50,000**

1. Project to be funded by others.

Access Management Plan

Access management is a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. Access management is a policy tool which seeks to balance mobility, the need to provide efficient, safe and timely travel with the ability to allow access to individual properties. Proper implementation of access management techniques should guarantee reduced congestion, reduced accident rates, less need for roadway widening, conservation of energy, and reduced air pollution. Measures may include but are not limited to restrictions on the type and amount of access to roadways, and use of physical controls, such as signals and channelization including raised medians, to reduce impacts of approach road traffic on the main facility.

Numerous driveways or street intersections increase the number of conflicts and potential for collisions and decrease mobility and traffic flow. The City of Woodburn, as with every city, needs a balance of streets that provide access with streets that serve mobility. *Tech Memo 5* identifies a number of potential access management techniques and strategies that help to preserve transportation system investments and guard against deteriorations in safety and increased congestion. Table 12 summarizes the projects that best meet the goals and objectives of the TSP update.

Table 11: Access Management Projects

Project Number	Name	Description	Priority	Cost Estimate
AM1	Access Spacing Standard Modification	Develop access management standards that reflect functional classification of the roadway and that coordinate with the ODOT standards that regulate several major roadways in Woodburn	Low	$25,000
AM2	Alternative Access	Investigate and implement opportunities to provide alternative access to nonstate facilities when reasonable access can occur (consistent with the State's Division 51 access management standards)	Low	$25,000
AM3	Access Variance Process	Define a variance process for when the standard cannot be met	Low	$25,000
AM4	Access Consolidation	Establish an approach for access consolidation over time to move in the direction of the standards at each opportunity. Cross-over easements should be provided on all compatible parcels (topography, access, and land use) to facilitate future access between adjacent parcels and inter-parcel circulation.	Low	$25,000
AM5	Access Movement Restrictions	Consider opportunities to restrict certain turning movements at accesses (such as a right in-right out access)	Low	$25,000
			TOTAL High Priority Costs	**$0**
			TOTAL Medium Priority Costs	**$0**
			TOTAL Low Priority Costs	**$125,000**
			TOTAL Program Costs (20 years)	**$125,000**

OTHER

Other modes and systems examined through the TSP update process include air, marine, pipeline, rail and truck freight. With the exception of the rail system, no planned projects have been identified for inclusion in the TSP update.

Rail

Through review of previous planning efforts, *Tech Memo 5* identifies a several projects to be considered for the rail system in Woodburn. Table 13 summarizes the projects that best meet the goals and objectives of the TSP update.

Table 12: Rail Projects

Project Number	Location	Description	Priority	Cost Estimate
RA1	Front Street	Establish a downtown Amtrak passenger rail stop along Front Street in downtown Woodburn, potentially as a public-private partnership at the "Y" property adjacent to Locomotive Park	Low	$10,000
RA2	Front Street and Cleveland Street	Investigate the opportunity to remove private grade railroad crossings by providing alternative access to parcels as development and redevelopment occurs	Medium	$10,000
RA3	Butteville Road, north of OR 219	Explore a passenger rail stop if commuter rail is extended between Wilsonville and Beaverton down to Salem	Low	$5,000
TOTAL High Priority Costs				**$0**
TOTAL Medium Priority Costs				**$10,000**
TOTAL Low Priority Costs				**$15,000**
TOTAL Program Costs (20 years)				**$25,000**

Attachment A

Project Evaluation Criteria

PROPOSED EVALUATION CRITERIA

The proposed evaluation criteria are based on the proposed goals and policies. A qualitative process using the evaluation criteria will be used to evaluate potential modal solutions and prioritize projects developed through the TSP update. The rating method used to evaluate the alternatives is described below.

- Most Desirable: The concept addresses the criterion and/or makes substantial improvements in the criteria category. (+1)
- No Effect: The criterion does not apply to the concept or the concept has no influence on the criteria. (0)
- Least Desirable: The concept does not support the intent of and/or negatively impacts the criteria category. (-1)

At this level of screening, the criteria will not be weighted; the ratings will be used to inform discussions about the benefits and tradeoffs of each alternative. Table 1 presents the evaluation criteria that will be used to qualitatively evaluate the solutions developed through the TSP update.

Objective	Evaluation Criteria	Evaluation Score
Goal 1 *Provide a multimodal transportation system that avoids or reduces a reliance on one form of transportation and minimizes energy consumption and air quality impacts.*		
Develop an expanded intracity bus transit system	Project will expand and improve the bus transit system	+1
	Project will have no impact to the bus transit system	0
	Project will negatively impact the bus transit system	-1
Develop a comprehensive system of bicycle facilities	Project will contribute to a comprehensive bicycle system	+1
	Project will not contribute to a comprehensive bicycle system	0
	Project will impede a comprehensive bicycle system	-1
Develop a comprehensive system of pedestrian facilities	Project will contribute to a comprehensive pedestrian system	+1
	Project will not contribute to a comprehensive pedestrian system	0
	Project will impede a comprehensive pedestrian system	-1
Goal 2 *Provide an interconnected street system that is adequately sized to accommodate existing and projected traffic demands in the Woodburn area.*		
Develop new east-west and/or north-south collector/minor arterial streets within the City	Project will result in new east-west and/or north-south connections	+1
	Project will have no impact on east-west and/or north-south connections	0
	Project will result in increased traffic demands on OR 219/214 and 99E	-1
Goal 3 Provide a transportation system that enhances the safety and security of all transportation modes in the Woodburn area.		
Address existing and potential future safety issues.	Project will address existing or potential future safety issue	+1
	Project will have no impact on an existing or potential future safety issue	0
	Project will worsen existing or potential future safety issue	-1
Identify street and railroad crossings in need of improvement, as well as those that should be closed or relocated.	Project will lead to the improvement, closure, or relocation of a rail crossing	+1
	Project will have no impact on rail crossings	0
	Project will not improve rail crossings or will result in a new rail crossing	-1
Develop a plan for designated truck routes through the City, and a plan to handle truck and rail hazardous cargoes	Project will enhance truck and freight movements	+1
	Project will have no impact on truck and freight movements	0
	Project will worsen truck and freight movements	-1

Goal 4 Provide a financially sustainable transportation system through responsible stewardship of assets and financial resources.		
Identify new and innovative funding sources for transportation improvements	Project is eligible for new and/or innovative funding	+1
	Project may not be eligible for new and/or innovative funding	0
	Project is not eligible for new and/or innovative funding	-1
Preserve and maintain the existing transportation system assets to extend their useful life	Project will preserve and maintain the existing transportation system	+1
	Project will not impact the existing transportation system	0
	Project will have a negative impact on the existing transportation system	-1
Goal 5 – Land Use and Transportation Integration Review and update land use standards and ordinances to create a balanced built environment where existing and planned land uses are supported by an efficient multi-modal transportation system.		
TBD		

Attachment B

Project Evaluation Matrix

Project Number	Location/Name	Type	Description	Multimodal Mobility Objective A	Multimodal Mobility Objective B	Multimodal Mobility Objective C	Connectivity Objective A	Safety Objective A	Safety Objective B	Safety Objective C	Strategic Investment Objective A	Strategic Investment Objective B	Total	Priority	Cost (1000s)
	Bicycle System														
	Major Arterials														
B1	OR 219 from Butteville Road to Willow Avenue	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	
B2	OR 214 from Progress Way to OR 99E	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	
B3	OR 99E from Lincoln Street to southern City Boundary	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	
B4	OR 99E from southern City Boundary to southern UGB	Bike lanes	Widen roadway and install buffered bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	
	Minor Arterials														
B5	OR 219 from western UGB to Butteville Road	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	$ 650
B6	Butteville Road/OR 219 from northern UGB to OR 219	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	$ 3,200
B7	Butteville Road from OR 219 to southern UGB	Bike lanes	Widen roadway and install bike lanes	0	1	0	0	0	0	0	0	1	2	Medium	$ -
B8	Evergreen Road from OR 214 to Hayes Street	Bike lanes	Widen roadway and install bike lanes	0	1	0	0	0	0	0	0	1	2	Medium	$ 500
B9	Boones Ferry Road from northern UGB to Hazelnut Drive	Bike lanes	Widen roadway and install bike lanes	0	1	0	0	0	0	0	0	1	2	Medium	$ 500
B10	Settlemier Avenue from Harrison Street to railroad tracks	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School, Heritage Elementary School, Valor Middle School, and St. Luke's School	0	1	0	0	1	0	0	0	0	2	Medium	$ 25
B11	Boones Ferry Road from Dahlia Street to southern UGB	Bike lanes	Widen roadway and install bike lanes	0	1	0	0	0	0	0	0	1	2	Medium	$ 1,500
B12	Front Street from northern UGB to Boones Ferry Road	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Woodburn High School, Heritage Elementary School, Valor Middle School, and St. Luke's School	0	1	0	0	1	0	0	0	1	3	High	$ 8,050
B13	Garfield Street from 3rd Street to Front Street	Shared street	Install shared lane markings and signs.	0	1	0	0	0	0	0	0	0	1	Low	$ 10
B14	Garfield Street from Smith Drive to 3rd Street	Shared street	Install shared lane markings and signs.	0	1	0	0	0	0	0	0	0	1	Low	$ 10
B15	Young Street	Study	Perform a corridor evaluation that would consider design treatments to improve bicycle comfort and safety such as striping, signing, and wayfinding	0	1	1	0	0	0	0	0	0	2	Medium	$ 15
B16	OR 211 from OR 99E to eastern UGB	Bike lanes	Widen roadway and install bike lanes in coordination with ODOT	0	1	0	0	0	0	0	0	1	2	Medium	$ 1,000
	Service Collectors														
B17	Arney Road from Robin Avenue to OR 219	Shared street	Install shared lane markings and signs in coordination with ODOT	0	1	0	0	0	0	0	0	0	1	Low	$ 5
B18	Harvard Drive from Stacy Allison Way to Evergreen Road	Bike lanes	Enhance the parallel route of Harvard Drive from Stacy Allison Way to Evergreen Road in place of Stacy Allison Way. Install buffered bike lane striping on both sides of the roadway	0	1	0	0	0	0	0	0	1	2	Medium	$ 15
B19	Hayes Street from Harvard Drive to Cascade Drive	Bike lanes	Install bike lane striping. This project improves safe routes to school for Nellie Muir Elementary School	0	1	0	0	1	0	0	0	1	3	Medium	$ 35
B20	Hayes Street from Cascade Drive to Settlemier Avenue	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Nellie Muir Elementary School	0	1	0	0	1	0	0	0	1	3	Medium	$ 3,000
B21	Parr Road from western UGB to western City Boundary	Bike lanes	Widen roadway and install bike lanes. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	0	1	0	0	1	0	0	0	1	3	High	$ -
B22	Lincoln Street from Cascade Drive to Front Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	0	1	0	0	1	0	0	0	0	2	Medium	$ 20
B23	Lincoln Street from Front Street to OR 99E	Bike lanes	Install bike lane striping. This project improves safe routes to school for Washington Elementary School	0	1	0	0	1	0	0	0	1	3	High	$ 55
B24	Cleveland Street from Front Street to OR 99E	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 15
B25	Hardcastle Avenue from Front Street to OR 99E	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	0	1	0	0	1	0	0	0	1	3	High	$ 20
B26	Brown Street from Cleveland Street to end of roadway	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 20
B27	Cooley Road from OR 211 to Aubrey Way	Bike lanes	Widen roadway and install bike lanes	0	1	0	0	0	0	0	0	1	2	Medium	$ 1,300
B28	Cooley Road from Aubrey Way to Hardcastle Avenue	Bike lanes	Install bike lane striping	0	1	0	0	0	0	0	0	1	2	Medium	$ 15
	Access Streets														
B29	Stubb Road from Harvard Drive to Parr Road	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	
B30	Astor Way from Country Club Road to OR 214	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 15
B31	Tukwila Drive from Boones Ferry Road to Hazelnut Drive	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 5
B32	5th Street from OR 214 to Garfield Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for St Luke's School	0	1	0	0	1	0	0	0	0	2	Medium	$ 20

Project Number	Location/Name	Type	Description	Evaluation Criteria: Multimodal Mobility Objective A	Multimodal Mobility Objective B	Multimodal Mobility Objective C	Connectivity Objective A	Safety Objective A	Safety Objective B	Safety Objective C	Strategic Investment Objective A	Strategic Investment Objective B	Total	Priority	Cost (1000s)
B33	Gatch Street from Hardcastle Road to Cleveland Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	0	1	0	0	1	0	0	0	0	2	Medium	$ 15
B34	Park Avenue from OR 214 to Lincoln Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Washington Elementary School	0	1	0	0	1	0	0	0	0	2	Medium	$ 20
B35	Evergreen Road from Country Club Court to OR 214	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 10
	Local Streets														
B36	Country Club Road from Evergreen Road to Astor Way	Bike lanes	Install bike lane striping	0	1	0	0	0	0	0	0	1	2	Medium	$ 40
B37	Cascade Drive from OR 214 to Hayes Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School	0	1	0	0	1	0	0	0	0	2	Medium	$ 10
B38	Smith Drive from Hayes Street to Garfield Street	Shared street	Install shared lane markings and signs. This project improves safe routes to school for Nellie Muir Elementary School	0	1	0	0	1	0	0	0	0	2	Medium	$ 5
B39	Meridian Drive from Hazelnut Drive to OR 214	Shared street	Install shared lane markings and signs	0	1	0	0	0	0	0	0	0	1	Low	$ 10
B40	City-wide	Wayfinding	Provide wayfinding to bike routes, multi-use paths, trails (as constructed), parks, schools, and other essential destinations	0	1	1	0	0	0	0	0	0	2	Medium	$ 30
	Pedestrian System														
	Major Arterials														
P1	OR 219 from Butteville Road to Willow Avenue	New sidewalks	Install new sidewalks in coordination with ODOT	0	0	1	0	0	0	0	0	1	2	Medium	
P2	OR 99E from Lincoln Street to southern City Boundary	New sidewalks	Remove existing sidewalks and install new sidewalks in coordination with ODOT	0	0	1	0	0	0	0	0	1	2	Medium	
P3	OR 99E from southern City Boundary to southern UGB	New sidewalks	Install new sidewalks in coordination with ODOT	0	0	1	0	0	0	0	0	1	2	Medium	
	Minor Arterials														
P4	Butteville Road/OR 219 from northern UGB to OR 219	New sidewalks	Install new sidewalks in coordination with ODOT	0	0	1	0	0	0	0	0	1	2	Medium	$ 1,500
P5	Butteville Road from OR 219 to southern UGB	New sidewalks	Install new sidewalks	0	0	1	0	0	0	0	0	1	2	Medium	$ -
P6	Evergreen Road from Stacy Allison Way to Boean Lane	Sidewalks - Fill in gaps	Fill in the gaps	0	0	1	0	1	0	0	0	1	3	High	$ 200
P7	Boones Ferry Road from northern UGB to Hazelnut Drive	New sidewalks	Install new sidewalks on one side	0	0	1	0	0	0	0	0	1	2	Medium	$ 150
P8	Settlemier Avenue from Oak Street to Parr Road	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Nellie Muir Elementary School, Heritage Elementary School, and Valor Middle School	0	0	1	0	1	0	0	0	1	3	High	$ 300
P9	Boones Ferry Road from Parr Road to southern UGB	New sidewalks	Install new sidewalks. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	0	0	1	0	1	0	0	0	1	3	High	$ 800
P10	Front Street from northern UGB to Hazelnut Drive	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Woodburn High School	0	0	1	0	1	0	0	0	1	3	High	$ 400
P11	Young Street	Sidewalks - Fill in gaps	Fill in the gaps	0	0	1	0	0	0	0	0	1	2	Medium	$ 200
P12	OR 211 from OR 99E to eastern UGB	New sidewalks	Install new sidewalks in coordination with ODOT	0	0	1	0	0	0	0	0	1	2	Medium	$ 500
	Service Collectors														
P13	Hayes Street from Harvard Drive to Settlemier Avenue	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Nellie Muir Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 600
P14	Parr Road from western UGB to western City Boundary	New sidewalks	Install new sidewalks. This project improves safe routes to school for Heritage Elementary School and Valor Middle School	0	0	1	0	1	0	0	0	1	3	High	$ -
P15	Lincoln Street from Cascade Drive to OR 99E	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 450
P16	Industrial Avenue from Progress Way to OR 99E	New sidewalks	Install new sidewalks	0	0	1	0	0	0	0	0	1	2	Medium	$ 500
P17	Progress Way from Industrial Avenue to OR 214	New sidewalks	Install new sidewalks	0	0	1	0	0	0	0	0	1	2	Medium	$ 850
P18	Hardcastle Avenue from Front Street to Cooley Road	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 450
P19	Brown Street from Cleveland Street to end of roadway	Sidewalks - Fill in gaps	Fill in the gaps	0	0	1	0	0	0	0	0	1	2	Medium	$ -
P20	Cooley Road from OR 211 to Hardcastle Avenue	Sidewalks - Fill in gaps	Fill in the gaps	0	0	1	0	0	0	0	0	1	2	Medium	$ 650
	Access Streets														
P21	Woodland Avenue from Jory Street to Arney Road	New sidewalks	Install new sidewalks on one side	0	0	1	0	0	0	0	0	1	2	Medium	$ 250
P22	Stubb Road from Harvard Drive to Parr Road	New sidewalks	Install new sidewalks	0	0	1	0	0	0	0	0	1	2	Medium	
P23	Oregon Way from Country Club Road to OR 214	New sidewalks	Install new sidewalks	0	0	1	0	0	0	0	0	1	2	Medium	$ 250
P24	Hazelnut Drive from Graystone Drive to Front Street	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Woodburn High School	0	0	1	0	1	0	0	0	1	3	High	$ 150
P25	Gatch Street from Hardcastle Road to Cleveland Street	Sidewalks - Fill in gaps	Fill in the gaps. This project improves safe routes to school for Washington Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 350
P26	Park Avenue from Hardcastle Avenue to Lincoln Street	New sidewalks	Install new sidewalks on one side. This project improves safe routes to school for Washington Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 65
	Local Streets														
P27	Willow Avenue from McNaught Road to OR 219	New sidewalks	Install new sidewalks on both sides	0	0	1	0	0	0	0	0	1	2	Medium	$ 350

Project Number	Location/Name	Type	Description	Evaluation Criteria									Total	Priority	Cost (1000s)
				Multimodal Mobility			Connectivity	Safety			Strategic Investment				
				Objective A	Objective B	Objective C	Objective A	Objective A	Objective B	Objective C	Objective A	Objective B			
P28	Cascade Drive from OR 214 to Hayes Street	New sidewalks	Install new sidewalks. This project improves safe routes to school for Nellie Muir Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 400
P29	Ben Brown Lane from end of roadway to Boones Ferry Road	Sidewalks - Fill in gaps	Fill in the gaps	0	0	1	0	0	0	0	0	1	2	Medium	$ 200
P30	Oak Street from Boones Ferry Road to Front Street	New sidewalks	Install new sidewalks on one side	0	0	1	0	0	0	0	0	1	2	Medium	$ 150
P31	Ogle Street from Cleveland Street to Boones Ferry Road	New sidewalks	Install new sidewalks on one side	0	0	1	0	0	0	0	0	1	2	Medium	$ 900
	Pedestrian Crossing Enhancements														
P32	Front Street/Young Street	Enhanced crossing	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection	0	0	1	0	1	0	0	0	1	3	Medium	$ 15
P33	Front Street/Lincoln Street	Enhanced crossing	Construct ADA-complaint ramps and sidewalks on the east leg of the intersection. This project improves safe routes to school for St Luke's School	0	0	1	0	1	0	0	0	1	3	High	$ 15
P34	Cascade Drive/Hayes Street	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Nellie Muir Elementary School	0	0	1	0	1	0	0	0	1	3	High	$ 65
P35	Park Avenue/Legion Park Driveway	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves access to Legion Park	0	0	1	0	1	0	0	0	1	3	Medium	$ 65
P36	Hazelnut Drive/Broadmoor Place Accessway	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Woodburn High School	0	0	1	0	1	0	0	0	1	3	High	$ 65
P37	OR 214/N Bulldog Drive	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, update the existing crossing to an enhanced pedestrian crossing with a pedestrian hybrid beacon coordinated with the surrounding traffic signals in coordination with ODOT. This project improves safe routes to school for Woodburn High School											High	$ 150
P38	OR 99E from OR 214 to Young Street	Enhanced crossing - Signalized intersection	As identified in the Highway 99E Corridor Plan, install countdown pedestrian timers and construct ADA enhancements at key signalized intersections along OR 99E in coordination with ODOT, including: o OR 214/OR 211 o Hardcastle Avenue o Lincoln Road o Young Street	0	0	1	0	0	0	0	0	1	2	Medium	$ 650
P39	OR 99E from OR 214 to Young Street	Enhanced crossing	As identified in the Highway 99E Corridor Plan, install curb extensions on minor street legs of intersections (curb extensions to shorten pedestrian crossing distances parallel to OR 99E, not for crossing of OR 99E) between Arlington Street and Cleveland Street (up to 8 locations) in coordination with ODOT. Potential locations include: o Alexandria Avenue o James Street o Williams Street o Blaine Street o Aztec Drive o Laurel Avenue o Tomlin Avenue	0	0	1	0	0	0	0	1	1	3	Medium	$ 950
P40	OR 99E, north of Williams Street	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).											High	$ 75
P41	OR 99E, between NE Laurel Avenue and Tomlin Avenue	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).											High	$ 75
P42	OR 99E, between Blaine Street and Aztec Drive	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).											High	$ 75

Project Number	Location/Name	Type	Description	Evaluation Criteria									Total	Priority	Cost (1000s)
				Multimodal Mobility			Connectivity	Safety			Strategic Investment				
				Objective A	Objective B	Objective C	Objective A	Objective A	Objective B	Objective C	Objective A	Objective B			
P43	OR 99E, north of Mount Jefferson Avenue	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).											Medium	$ 75
P44	OR 99E, north of James Street	Enhanced crossing	As identified in the Woodburn OR 214/OR 99E Pedestrian Safety Study, install an enhanced pedestrian crossing in coordination with ODOT, that may include raised median refuge island, sidewalk infill, supplemental street lighting, and a potential RRFB (RRFB cost not included).											Medium	$ 75
P45	Boones Ferry Road/Constitution Avenue/Tukwila Drive	Enhanced crossing	Install an enhanced pedestrian crossing. This project improves safe routes to school for Woodburn High School	0	0	1	0	1	0	0	0	1	3	High	$ 65
	Multi-Use Pathways														
P46	Mill Creek Greenway	Multi-use pathway	As identified in the Mill Creek Greenway Master Plan, construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: o Hazelnut Drive o Bulldog Drive (east crossing) o OR 214 (state highway) o Hardcastle Avenue o Lincoln Street o Young Street o Cleveland Street and railroad tracks This project improves safe routes to school for Woodburn High School	0	1	1	0	0	0	0	1	0	3	High	$ 2,000
P47	Mill Creek Greenway – Northern tributary	Multi-use pathway	As identified in the Mill Creek Greenway Master Plane, construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: o Bulldog Drive (west crossing) o Meridian Drive o Boones Ferry Road This project improves safe routes to school for Woodburn High School, Lincoln Elementary School, and French Prairie Middle School	0	1	1	0	0	0	0	1	0	3	Medium	$ 700
P48	Mill Creek Greenway – Western tributary	Multi-use pathway	Construct a multi-use path including at-grade mid-block crossing treatments at the following street connections: o Parr Road o Ben Brown Lane o Settlemier Avenue o Front Street and railroad tracks This project improves safe routes to school for Heritage Elementary School and Valor Middle School	0	1	1	0	0	0	0	1	0	3	Medium	$ 900
P49	Evergreen Road Multi-Use Path	Multi-use pathway	Construct a multi-use path extending from Evergreen Road	0	1	1	0	0	0	0	0	0	2	Medium	$ 150
P50	Washington Elementary School Multi-Use Path	Multi-use pathway	As identified in the Highway 99E Corridor Plan, construct a north-south multi-use path connection between Hardcastle Avenue and Lincoln Street, west of Washington Elementary School. This project improves safe routes to school for Washington Elementary School	0	1	1	0	0	0	0	0	0	2	Medium	$ 90
P51	Mill Creek Greenway - Southern extension	Multi-use pathway	As identified in the Highway 99E Corridor Plan, construct extension of Mill Creek Greenway multi-use path to Belle Passi Road	0	1	1	0	0	0	0	0	0	2	Medium	$ 90
P52	Evergreen Road Pedestrian Connection	Multi-use pathway	Construct a connection between the Evergreen Road multi-use path and pedestrian facilities that are part of future development to the south	0	1	1	0	0	0	0	0	0	2	Medium	$ 20
P53	Centennial Park Pedestrian Connection	Multi-use pathway	Construct a connection between the Centennial Park multi-use path and pedestrian facilities that are part of future development to the west	0	1	1	0	0	0	0	0	0	2	Medium	$ 20
P54	Santiam Drive Pedestrian Connection	Multi-use pathway	Construct a connection between Santiam Drive and pedestrian facilities that are part of future development to the south	0	1	1	0	0	0	0	0	0	2	Medium	$ 20

Project Number	Location/Name	Type	Description	Evaluation Criteria: Multimodal Mobility Objective A	Multimodal Mobility Objective B	Multimodal Mobility Objective C	Connectivity Objective A	Safety Objective A	Safety Objective B	Safety Objective C	Strategic Investment Objective A	Strategic Investment Objective B	Total	Priority	Cost (1000s)
P55	June Way Accessway	Multi-use pathway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E (near the Audrey Way intersection), may not connect directly as it runs parallel to OR 99E	0	0	1	0	0	0	0	0	0	1	Low	$ 80
P56	Johnson Street Accessway	Multi-use pathway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E	0	0	1	0	0	0	0	0	0	1	Low	$ 45
P57	Elm Street Accessway	Multi-use pathway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E, may not connect directly as it runs parallel to OR 99E	0	0	1	0	0	0	0	0	0	1	Low	$ 25
P58	Wilson Street Accessway	Multi-use pathway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E	0	0	1	0	0	0	0	0	0	1	Low	$ 55
P59	Hawley Street Accessway	Multi-use pathway	As identified in the Highway 99E Corridor Plan and in coordination with ODOT, install a new accessway to OR 99E (possibly part of future street extension), may not connect directly as it runs parallel to OR 99E	0	0	1	0	0	0	0	0	0	1	Low	$ 55
P60	A Street Accessway	Multi-use pathway	Install a new accessway that connects A Street north to Cleveland Street and/or Mill Creek Greenway (western tributary).	0	0	1	0	0	0	0	0	0	1	Low	$ 25
P61	City-wide	Wayfinding	Provide wayfinding to bike routes, multi-use paths, trails (as constructed), parks, schools, and other essential destinations	0	1	1	0	0	0	0	0	0	2	Medium	$ 30
	Roadway System														
	Street Connectivity														
SC1	Southeast Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	0	0	0	1	0	0	0	0	1	2	Medium	$ -
SC2	South Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	0	0	0	1	0	0	0	0	1	2	Medium	$ -
SC3	Southwest Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	0	0	0	1	0	0	0	0	1	2	Medium	$ -
SC4	North Woodburn	New connection	Fill in the local street network as low-density residential growth occurs	0	0	0	1	0	0	0	0	1	2	Medium	$ -
	Capacity														
R1	Southern OR 219/Butteville Road Intersection	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) in coordination with ODOT	0	0	0	0	1	0	1	0	1	3	High	$ 2,750
R2	OR 219 from Butteville Road to Willow Road	Street design	Widen roadway to include two lanes in each direction and a two-way left-turn lane (in conjunction with pedestrian and bicycle facility improvements) in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	High	$ 1,700
R3	OR 214 from Cascade Drive to OR 99E	Street design	Widen roadway to include two lanes in each direction and a two-way left-turn lane, including changes to signal timing as appropriate, in coordination with ODOT (and in conjunction with bicycle facility improvements)	0	0	0	0	0	0	1	0	1	2	Medium	$ 20,300
R4	OR 99E from Lincoln Street to south UGB	Street design	As identified in the Highway 99E Corridor Plan, widen roadway to provide a continuous two-way left-turn lane and wider shoulders, including changes to signal timing as appropriate, in coordination with ODOT (and in conjunction with pedestrian and bicycle facility improvements)	0	0	0	0	0	0	1	0	1	2	Medium	$ 12,300
R5	Parr Road from western UGB to western City Boundary	Street design	Upgrade to Service Collector urban standards including bicycle and pedestrian enhancements	0	0	0	0	0	0	0	0	1	1	Low	$ -
R6	Butteville Road from OR 219 to southern UGB	Street design	Upgrade to Minor Arterial urban standards including bicycle and pedestrian enhancements	0	0	0	0	0	0	0	0	1	1	Low	$ -
R7	Brown Street from Comstock Avenue to end of roadway	Street design	Upgrade to Service Collector urban standards including bicycle and pedestrian enhancements	0	0	0	0	0	0	0	0	1	1	Low	$ -
R8	OR 214/I-5 Southbound Ramp Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 15
R9	OR 214/I-5 Northbound Ramp Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 15
R10	OR 214/Evergreen Road Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 15
R11	OR 214/Oregon Way/Country Club Road Intersection	Traffic signal	Investigate corridor signal timing and coordination adjustments in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 15
R12	OR 214/Front Street Ramp Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 500

Project Number	Location/Name	Type	Description	Evaluation Criteria: Multimodal Mobility Objective A	Multimodal Mobility Objective B	Multimodal Mobility Objective C	Connectivity Objective A	Safety Objective A	Safety Objective B	Safety Objective C	Strategic Investment Objective A	Strategic Investment Objective B	Total	Priority	Cost (1000s)
R13	OR 214/Park Street Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 500
R14	OR 214/OR 211/OR 99E Intersection	Intersection - geometric considerations	Install a second left-turn lane on the southbound approach, install a second receiving lane on the east leg, and update signal timing in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 900
R15	Parr Road/Settlemier Avenue Intersection	Traffic signal	Install intersection capcity improvement such as traffic signal (if warranted), turn lanes, or roundabout	0	0	0	0	0	0	0	0	1	1	Low	$ 500
R16	OR 99E/Hardcastle Avenue Intersection	Intersection - geometric considerations	Reconfigure the westbound approach to incorporate one left-turn lane and one thru-right turn lane in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 20
R17	OR 99E/Lincoln Street Intersection	Intersection - geometric considerations	Install a shared through-right turn lane on the eastbound approach and reconfigure the existing approach lane as a separate left-turn lane in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 500
R18	OR 99E/Young Street Intersection	Intersection - geometric considerations	Install a third westbound lane to provide separate left, thru, and right turn lanes in coordination with ODOT. Implement protected-permissive left-turn phasing on the eastbound and westbound approaches.	0	0	0	0	0	0	1	0	1	2	Medium	$ 550
R19	OR 99E/Cleveland Street Intersection	Traffic signal	Install intersection capacity improvement such as traffic signal (if warranted), turn lanes, or roundabout in coordination with ODOT. Consideration should be given to railroad preemption and the proximity to the signalized intersection at OR 99E and Young Street.	0	0	0	0	0	0	1	0	1	2	Medium	$ 500
R20	Ben Brown Lane	New roadway	Extend Ben Brown Lane to Evergreen Road as an Access Street	0	0	0	1	0	0	0	0	1	2	Medium	$ 5,100
R21	Evergreen Road	New roadway	Extend south to Parr Road	0	0	1	1	0	0	0	0	1	3	High	$ 4,750
R22	Stacy Allison Way	New roadway	Extend south to UGB	0	0	0	1	0	0	0	0	1	2	Medium	$ 7,300
R23	Brown Street	New roadway	Extend south to the South Arterial	0	0	0	1	0	0	0	0	1	2	Medium	$ 800
R24	Woodland Avenue	New roadway	Extend west to Butteville Road	0	0	0	1	0	0	0	0	1	2	Medium	$ 2,450
R25	East-west Connection in Southwest Woodburn	New roadway	Construct a new Local Industrial Street connecting the southern extensions of Stacy Allison Way and Evergreen Road	0	0	0	1	0	0	1	0	0	2	Medium	$ 1,800
R26	Stubb Road from Harvard Drive to Parr Road	Street design and new roadway	Upgrade the existing roadway to Access Street standards and extend north to Harvard Drive including bicycle and pedestrian enhancements	0	0	0	1	0	0	1	0	0	2	Medium	$ 1,900
R27	North-south Connection in Southwest Woodburn	New roadway	Construct a new Access Street connecting Hayes Street to Stubb Street	0	0	0	1	0	0	1	0	0	2	Medium	$ 5,150
R28	OR 99E/Industrial Avenue Intersection	Intersection - geometric considerations	Evaluate the intersection layout, control, signing, and striping, including any sight distance constraints in coordination with ODOT	0	0	0	0	0	0	1	0	1	2	Medium	$ 100
R29	South Arterial	New roadway	Construct the Southern Arterial from Evergreen Road to OR 99E (2 lanes)	0	0	0	1	0	0	1	0	0	2	Medium	$ 12,250
R30	Woodland Avenue Curve Modification	Intersection - geometric considerations	Modify the intersection layout to address truck turning movement constraints	0	0	0	0	0	0	1	0	1	2	Medium	$ 100
R31	George Street/Hillsboro Silverton Highway Intersection	Intersection - geometric considerations	As identified in the Highway 99E Corridor Plan, close vehicular access to George Street from Hillsboro Silverton Highway when future local street access is provided to the east											Medium	$ 60
	Safety														
S1	Southern OR 219/Butteville Road Intersection	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) if/when warranted and in coordination with ODOT	0	0	0	0	1	0	1	0	1	3	High	
S2	Northern OR 214/Butteville Road Intersection	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements) if/when warranted and in coordination with ODOT	0	0	0	0	1	0	1	0	1	3	Medium	$ 2,000
S3	Front Street/Lincoln Street Intersection	Intersection	Enhanced signs and pavement markings (e.g. stop signs, warning signs, and/or beacons)	0	0	0	0	1	0	0	0	1	2	Medium	$ 50
S4	Front Street/Young Street/Garfield Street Intersection	Intersection - geometric considerations	Evaluate the intersection layout, signing, and striping in correlation to the railroad tracks. Provide clarification for westbound drivers trying to proceed through the intersection	0	0	0	0	1	0	0	0	1	2	Medium	$ 100
S5	OR 99E	Lighting	As identified in the Highway 99E Corridor Plan, update roadway lighting to meet ODOT roadway lighting standards in coordination with ODOT	0	0	0	0	1	0	0	0	1	2	Medium	$ 2,150

Project Number	Location/Name	Type	Description	Multimodal Mobility Objective A	Multimodal Mobility Objective B	Multimodal Mobility Objective C	Connectivity Objective A	Safety Objective A	Safety Objective B	Safety Objective C	Strategic Investment Objective A	Strategic Investment Objective B	Total	Priority	Cost (1000s)
S6	OR 99E access between Young Street and Cleveland Street	Intersection	As identified in teh Highway 99E Corridor Plan and in coordination with ODOT: Restrict left-turn movements and eventually close the Silverton Avenue intersection on OR 99E and vacate the segment of Silverton Avenue between OR 99E and Birds Eye Avenue Restrict left-turn movements onto Birds Eye Avenue from Hillsboro Silverton Highway and eventually close the Birds Eye Avenue intersection on Hillsboro Silverton Highway and vacate the segment of Birds Eye Avenue between Hillsboro Silverton Highway and Silverton Avenue	0	0	0	0	1	1	0	0	0	2	Medium	$ 60
S7	OR 99E/Tomlin Avenue	Intersection - geometric considerations	Evaluate the intersection layout, signing, and striping in coordination with ODOT, including any sight distance constraints. Consider restricting the southbound left-turn movement	0	0	0	0	1	1	0	0	1	3	High	$ 100
S8	Butteville Road/Parr Road	Intersection - geometric considerations	Modify intersection to address existing sight distance and geometric limitations	0	0	0	0	1	0	0	0	1	2	Medium	$ 1,000
S9	City-wide	Study	Evaluate traffic safety along OR 99E, OR 219/OR214, Front Street, Evergreen Road, and other key corridors to identify appropriate countermeasures	0	0	0	0	1	0	0	0	0	1	Low	$ 100
S10	Settlemier Avenue/Hayes Street	Intersection - geometric considerations	Enhanced traffic control (traffic signal, roundabout, or other appropriate geometric enhancements)	0	0	0	0	1	0	1	0	1	3	High	$ 2,000
	Transit System														
	Service Enhancements														
T1	Woodburn Fleet		Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Purchase of Category B and C vehicles (1 each) for use in the City's expanded transit services. (100% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T2	Woodburn Fleet		Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Purchase a Category B vehicle that will replace the second oldest full size vehicle in the WTS fleet; will be used for the City's existing local fixed route circulator. (130% funding level 2021)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T3	Woodburn Fixed Route		Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Addition of weekend service for Woodburn Transit Service fixed route and paratransit services (Sat. 9am-5pm, Sun.9am-3pm) by up to 2,156 revenue hours (FY20-21). (100% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T4	Woodburn Fixed Route		Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Modify the existing 60 minute fixed route loop; add an additional 30 minute route that will serve high frequency stops on weekdays (7am-7pm) within the Woodburn city limits. Total additional service will be up to 6,192 revenue hours (FY20-21). (100% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T5	Woodburn Fixed Route		Coordinate with Woodburn Transit to deliver service enhancements funded through the STIF: Modify the existing 60-min. fixed route by adding a new 30 min. route that serves high frequency stops (up to 1,456 revenue hours); this service will operate Saturdays (9am-5pm) and Sundays (9am-3pm). Also includes Dial-a-Ride (DAR) service. (130% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T6	Woodburn Fixed Route		Increase frequency of existing route to 30 minutes	1	0	0	0	0	0	0	1	0	2	Medium	$ -
T7	Woodburn Fixed Route		Convert existing route to two-way operations	1	0	0	0	0	0	0	1	0	2	Medium	$ -

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T8	City-wide		Work with Woodburn Transit as growth occurs to provide new or re-routed service to other areas of Woodburn including: o Parr Road via an extension of Evergreen Road o Crosby Road o Butteville Road o The employment center southwest of the I-5/OR 214 interchange o Woodburn Industrial Park along the Progress Way and Industrial Avenue corridors o Gateway subarea between Front Street and Mill Creek o Neighborhoods in southeast Woodburn	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T9	Woodburn Company Stores		Coordinate with Woodburn Transit to establish a free shuttle between the Woodburn Company Stores and Downtown Woodburn, hourly during peak shopping and entertainment hours	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T10	City-wide		Coordinate with Woodburn Transit and major employers to establish a peak-only employer shuttle	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
	Intercity Service Enhancements														
T11	Urban and Rural Cherriots Regional Services		Coordinate with Cherriots to deliver service enhancements funded through the STIF: Expand service for up to 7,557 revenue hours on urban & rural Regional services. Includes startup costs for hiring new employees, and coordination of schedules with connecting services. Also establishes a Youth fare category (ages 6-18). (100% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T12	Keizer to Wilsonville		Coordinate with Cherriots to deliver service enhancements funded through the STIF: Establish one new Regional route from Keizer to Wilsonville with a stop at the Woodburn Memorial Park and Ride. Increase service on weekdays by 30 percent on urban & rural Regional services by up to 5,245 revenue hours. (130% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T13	Urban and Rural Cherriots Regional Services		Coordinate with Cherriots to deliver service enhancements funded through the STIF: Add Saturday service to urban & rural Cherriots Regional services with up to 3,919 revenue hours of new service (FY20-21). Includes coordination of schedules with other connecting services. (100% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T14	Urban and Rural Cherriots Regional Services		Coordinate with Cherriots to deliver service enhancements funded through the STIF: Add 30 percent more Saturday service to urban & rural Regional services by up to 215 revenue hours (FY20-21). In FY21, adds 6 holidays to the same routes. Includes coordination of schedules with connecting services. (130% funding level 2020-21)	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T15	City-wide		Coordinate transfers between the different agency services in Woodburn	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T16	Woodburn		Coordinate with Cherriots to provide a stop in Woodburn for SMART Route 1X, providing service to WES station in Wilsonville and downtown Salem	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
T17	Woodburn to Portland		Coordinate with Cherriots to consider further new service connections for Woodburn including: o Service to Portland - connect to TriMet via the Tualatin Park-and-Ride, directly into downtown Portland, or the MAX Orange Line light rail service. o Demand-responsive service to Hubbard one day per week	1	0	0	0	0	0	0	1	0	2	Medium	$ 5
	Stop Enhancements														
T18	City-wide		Evaluate all bus stops to verify static bus route information signage is visible and accessible and that bike racks are available at major bus stops	1	1	0	0	0	0	0	0	0	2	Medium	$ 25
T19	Stop 755016: Walmart		New shelter	1	0	0	0	0	0	0	0	0	1	Low	$ 5
T20	Stop 20419: Garfield Street		New shelter	1	0	0	0	0	0	0	0	0	1	Low	$ 5
	Other Transit Solutions														
T21	City-wide		Investigate transferring the paratransit system to a local social service agency	1	0	0	0	0	0	0	0	0	1	Low	$ 5
	TSMO														
	TDM														

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TDM1	Carpool/Vanpool Match Services		Coordinate a rideshare/carpool/vanpool program that regional commuters can use to find other commuters with similar routes to work	0	0	0	0	0	0	0	0	0	0	Low	$ 100
TDM2	Carpool/Vanpool Parking Program		Coordinate with employers to designate carpool/vanpool preferential parking	0	0	0	0	0	0	0	0	0	0	Low	$ 100
TDM3	Collaborative Marketing		Work with nearby cities, employers, transit service providers, and developers to collaborate on marketing for transportation options that provide an alternative to single-occupancy vehicles	0	1	1	0	0	0	0	0	0	2	Medium	$ 100
TDM4	Limited and/or Flexible Parking Requirements		Update the Woodburn Development Ordinance to include strategies that encourage multi-modal transportation	1	1	1	0	0	0	0	0	0	3	High	$ 25
TDM5	Parking Management		Modify the City's current parking policy to allow for the potential to charge for parking	1	0	0	0	0	0	0	0	0	1	Low	$ 10
TDM6	Transit Fare Subsidies		Work with Woodburn Transit to provide transit fare subsidies	1	0	0	0	0	0	0	0	0	1	Low	$ 5
TDM7	Employer TDM Measures		Work with employers to encourage TDM measures such as allowing employees to work at home one day a week and scheduling shift changes to occur outside of peak travel periods	0	0	0	0	0	0	0	0	0	0	Low	$ 100
	Land Use														
LU1	Commercial and Mixed-use Nodes		Establish neighborhood commercial and mixed-use nodes within the city	0	0	0	0	0	0	0	0	0	0	Low	$ 25
LU2	Alternative Mobility Standards		Work with ODOT to develop alternative mobility standards at the I-5 interchange ramps	0	0	0	0	0	0	0	0	0	0	Low	$ 25
LU3	Right-of-way Dedications		Through development, right-of-way dedications should be provided to facilitate the future planned transportation system in the vicinity of the proposed development	0	0	0	0	0	0	0	0	0	0	Low	$ -
LU4	Half-street Improvements		Through development, half-street improvements (sidewalks, curb and gutter, bicycle lanes/paths, and/or travel lanes) should be provided along all site frontages that do not have full buildout improvements in place at the time of development	0	1	1	0	0	0	0	0	1	3	High	$ -
	Access Management														
AM1	Access Spacing Standard Modification		Develop access management standards that reflect functional classification of the roadway and that coordinate with the ODOT standards that regulate several major roadways in Woodburn	0	0	0	0	0	0	0	0	0	0	Low	$ 25
AM2	Alternative Access		Investigate and implement opportunities to provide alternative access to nonstate facilities when reasonable access can occur (consistent with the State's Division 51 access management standards)	0	0	0	0	0	1	0	0	0	1	Low	$ 25
AM3	Access Variance Process		Define a variance process for when the standard cannot be met	0	0	0	0	0	1	0	0	0	1	Low	$ 25
AM4	Access Consolidation		Establish an approach for access consolidation over time to move in the direction of the standards at each opportunity. Cross-over easements should be provided on all compatible parcels (topography, access, and land use) to facilitate future access between adjacent parcels and inter-parcel circulation.	0	0	0	0	0	1	0	0	0	1	Low	$ 25
AM5	Access Movement Restrictions		Consider opportunities to restrict certain turning movements at accesses (such as a right in-right out access)	0	0	0	0	0	1	0	0	0	1	Low	$ 25
	Other Solutions														
	Rail System														
RA1	Front Street		Establish a downtown Amtrak passenger rail stop along Front Street in downtown Woodburn, potentially as a public-private partnership at the "Y" property adjacent to Locomotive Park	0	0	0	0	0	0	0	0	0	0	Low	$ 10
RA2	Front Street and Cleveland Street		Investigate the opportunity to remove private grade railroad crossings by providing alternative access to parcels as development and redevelopment occurs	0	0	0	0	0	1	1	0	0	2	Medium	$ 10
RA3	Butteville Road, north of OR 219		Explore a passenger rail stop if commuter rail is extended between Wilsonville and Beaverton down to Salem	0	0	0	0	0	0	0	0	0	0	Low	$ 5