Appendix A

Policy Review and Evaluation Framework

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Amity TSP: Audit, Plan, Policy Review and Evaluation Framework

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Introduction

This memorandum provides policy and plan context for the City of Amity's Transportation System Plan (TSP). Reviewing existing policies and plans helps the City identify potential conflicts, changed conditions, data gaps, and needed Comprehensive Plan revisions as the TSP is developed. The second section of this memo contains an evaluation framework that will be used to help select transportation system alternatives that best meet Amity's transportation goals and needs.

Plan and Policy Review

This memorandum reviews the following plans:

Local Plans, Policies, and Other Documents

- Amity Comprehensive Plan (1979)
- Amity Urban Growth Boundary Expansion (2011) and Coordinated Population Forecast (2012)
- Amity Capital Improvement Plan and Street Design Standards

County Plans and Policies

- Yamhill County Transportation Plan (2006)
- Yamhill County Transit Plan

State Plans, Policies and Statutes

- Transportation Planning Rule
- Oregon Highway Plan (2011)
- Oregon Administrative Rule 734-051, Access Management
- Oregon Revised Statutes 366.215, Freight Mobility
- State Highway Design Manual (2012)
- Transportation Safety Action Plan, 2011
- Oregon Bicycle and Pedestrian Plan (1995) & Design Guide (2011)

Other Plans and Guides

- National Association of City Transportation Official (NACTO) Urban Bikeway Design Guide

Local plans, policies and other documents

Amity Comprehensive Plan, 1979

Overview

The City's Comprehensive Plan ("Comp Plan") was adopted in 1979 and has not been fully updated since. The Comp Plan contains findings, policies, and goals related to air, land, water resources, transportation, and other community needs. The Comp Plan was formally acknowledged by the Land Conservation and Development Commission (LCDC) at the time of adoption, but was updated in the early 1980s to reflect several state planning policy changes. The Comp Plan was adopted and updated before the state planning statute was revised to include a transportation goal and corresponding transportation planning regulations. The Plan's goal statement for the transportation system is to "provide a safe, convenient, aesthetic, and economic transportation system through a variety of transportation means." The Comp Plan does not describe specific transportation projects, which are currently programmed through the City's annual Capital Improvement Plan (CIP). The Comp Plan lists several policies that support the transportation system, including:

- Encourage alternative forms of transportation to reduce automobile emission pollution;
- Support alternative modes when possible and coordinate with Yamhill County on a county-wide bicycle plan;
- Upgrade City streets to standards as funds become available;
- Transportation improvements should be used to guide future urban development;
- The City shall preserve open space wherever possible;
- Hazardous traffic conditions should be improved systematically through programming in the capital improvement plan;
- The City shall encourage the protection of existing trees within the city;
- Transportation improvements which address the special needs of the low-income, handicapped, and senior citizens shall be promoted.

The Comp Plan provides general goals and policy direction for the City of Amity, but has few specific goals, policies, and objectives to inform detailed transportation planning in the City.

Recommendation

As the Comp Plan transportation goals and policies have not been substantially updated since plan adoption in 1979, these goals and policies should be reviewed and expanded upon during TSP development. Transportation conditions and needs have changed significantly since those that informed development of the 1979 Comp Plan. Oregon LCDC Goal 12, *Transportation*, and the Transportation Planning Rule (Oregon Revised Statute 660-012) discussed in this memorandum will help inform TSP goals and policies.

Amity Urban Growth Boundary Expansion, 2011 and Coordinated Population Forecast, 2012

Overview

The City recently completed an Urban Growth Boundary (UGB) expansion process by 44 gross acres to meet its housing and public facility needs for the year 2030. The City's coordinated population forecast for 2030 is 2,481 persons, or about 800 additional residents as compared to 2010. Despite allowing for higher residential densities in some areas, the City found that it needed to expand the UGB in order to accommodate this projected population growth. The expansion request was recently approved, and Amity's UGB has been formally expanded in several areas. The UGB expansion is not anticipated to adversely affect the existing transportation system as the future zoning is currently identified as residential. The City added a total of 44 acres in several separate sections to the UGB; however, there is no plan that specifies the location of future transportation facilities.

In 2012, Yamhill County approved a coordinated population forecast for the County and its junior jurisdictions. Amity is forecast to have a 2030 population of 1,984, and for the purposes of the TSP and future traffic analysis, the 2038 population is 2,161 persons. The Amity TSP will use the county's approved coordinated population forecast.

Recommendation

Approximately 480 additional persons are expected to be living in Amity in 2038 (the future year for TSP traffic analysis) within the current city limits and the recently expanded UGB. The transportation needs of these newly developed areas of the city will be considered in development of the TSP. The TSP should include a proposed street network for newly-added areas of the UGB, establish functional classifications for proposed streets, and consider other modal connections (bicycle and pedestrian) to these areas.

Amity Capital Improvement Plan & Street Design Standards

Overview

The transportation section of Amity's CIP specifies transportation capital projects, potential funding sources, and a construction timeline for street projects. Most projects are reconstruction projects, pavement rehabilitation, or sidewalk construction/reconstruction projects. The CIP includes a total of 12 projects, several of which have already been fully or partially funded (priority sidewalk improvements, Rosedell Ave., downtown improvements, and impending improvements to Rice Lane). The CIP notes that the City lacks a major permanent source of funding for road projects.

Page 86 details the Transportation Master Plan, which describes the functional classification of City streets and proposed street extensions. Portions of the proposed street extensions extend beyond the City's UGB. Amity's design standards specify engineering details for streets constructed within the City. The Transportation Master Plan describes minimum rights-of-way, roadway widths, and other requirements (curb radii, sidewalks, etc.) for each roadway functional classification.

Recommendation

A transportation funding plan, currently lacking in the CIP, will be developed as part of the TSP. The list of projects included in the CIP will be updated and incorporated into the TSP. The Transportation Master Plan should be reviewed and revised to account for the recent UGB expansion along with future functional classifications. The TSP will refer to existing design standards already adopted by the City.

County plans and policies

Yamhill County Transportation System Plan, 2006

Overview

Yamhill County's TSP is the principal transportation planning document for Yamhill County. It contains goals, objectives, policies, and a 20-year list of improvement projects for county transportation facilities. The TSP is currently being updated, with adoption expected in late 2013 or early 2014.

The current TSP (2006) includes no policies or projects applicable to Amity. There is only one segment of Rice Lane owned by the county on the eastern side of Amity's city limits, though Rice Lane and Amity Vineyards Road, both county facilities, connect to the city-owned road network. The TSP update, currently underway, has not reached the project evaluation stage as of October 2013, and little information is consequently available on new policies and projects that would affect Amity. Future conditions analysis recently completed for the TSP update projects that future traffic volumes are not expected to reduce level of service on any segment or intersection of highways OR 99 and OR 153 outside of town, though the Yamhill TSP update did not analyze future segment or intersection conditions on these highways *within* Amity's city limits.

Recommendation

The 2006 TSP contains no specific policies or projects pertaining to transportation facilities within the City. As of this writing, future policies and projects developed as part of the TSP update are not available. Amity's TSP should be coordinated with the plans, policies, and projects generated during the Yamhill County TSP update. The County TSP will include projects and policies that pertain to the state and county road system that serves traffic to and from Amity, and will therefore likely have an effect on OR 99/Trade St and OR 153/Nursery Street. The County TSP update process should be monitored as the Amity TSP progresses to look for opportunities to coordinate policies and projects.

Yamhill County Transit Plan

Overview

Yamhill County Transit Area (YCTA) operates routed bus service in Amity. YCTA Route #22 operates Monday through Friday with 8 departures daily. YCTA also provides dial-a-ride service on weekdays. YCTA's Transit Plan includes a number of strategies and policies that guide development of the system, including enhanced marketing strategies, improved coordination between regional transit agencies, and greater utilization of new transit technologies. The Plan also includes short and long term service improvement recommendations. The following recommendations are applicable to transit service in Amity:

- Short term: add Saturday service to West Valley routes, between McMinnville, Amity, Sheridan, Willamina, and Grand Ronde to accommodate demonstrated need for weekend service.
- Long term: add Sunday service to select routes depending on need.
- Long term: improve transit service into downtown Portland and other regional transit centers.

YCTA's Plan notes that transit funding has decreased in recent years, jeopardizing the implementation of Plan recommendations.

Recommendation

YCTA's Plan does not include major service improvements to Amity. Transit service needs will be assessed during development of the TSP, and recommendations for service improvements or modifications will be coordinated with YCTA.

State plans, policies, and statutes

Transportation Planning Rule (ORS 660-012)

Overview

Transportation system planning in Oregon is required by state law pursuant to Goal 12, *Transportation*, one of the 19 statewide planning goals. Oregon Revised Statute (ORS) 660-012, the Transportation Planning Rule (TPR) defines how to implement Goal 12. The TPR requires that the state prepare a TSP (the Oregon Transportation Plan or "OTP"), that metropolitan planning organizations prepare regional transportation plans, and that cities prepare a TSP that is consistent with both. Amity is not required to create a transportation system plan, based on its population. However, the City intends to develop a TSP that meets TPR requirements. Those requirements relevant to the Amity TSP are listed in the following table:

TPR Section	Finding
660-012-0015 **Preparation and Coordination of Transportation System Plans**	
3(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;	The TSP will include a local transportation system to meet local needs and will be consistent with the state TSP.
(4) Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing	The City intends for the TSP to be adopted as a component of the Comprehensive Plan. Amity is not

TPR Section	Finding
programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.	within an MPO and therefore is not required to adopt a regional TSP.
660-012-0020 Elements of Transportation System Plans	
2(a) A determination of transportation needs as provided in OAR 660-012-0030	Will be included in TSP.
(b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections…	Will be included in TSP.
(c) A public transportation plan	Will be included in TSP.
(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area.	Will be included in TSP.
(e) An air, rail, water and pipeline transportation plan…	Will be included in TSP.
(g) A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);	No parking plan is required. However, parking in downtown will be evaluated as part of the TSP.
(h) Policies and land use regulations for implementing the TSP	Implementing code will be developed.
(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program	A financing plan will be developed, though is not required by the TPR.
(3) Each element identified in subsections (2)(b)-(d) of this rule shall contain:	
(a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition	Will be included in TSP.
(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency	Will be included in TSP.
(3)(b) A system of planned transportation facilities, services and major improvements.	Will be included in TSP.
660-012-0035 Evaluation and Selection Transportation System Alternatives	
(1) The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:	
(a) Improvements to existing facilities or services;	Will be included in TSP.
(b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;	Will be included in TSP.
660-012-0045 Implementation of the Transportation System Plan	
(1) Each local government shall amend its land use regulations to implement the TSP.	
(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or 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.	The City currently has review standards for such projects, but should be updated during the TSP process.
(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:	

TPR Section	Finding
(a) Access control measures;	Will be included in TSP.
(b) Standards to protect future operation of roads, transitways and major transit corridors;	Will be included in TSP.
(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;	The City has a land use review process, but it should be reviewed during the TSP update process.
(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;	The City's subdivision ordinance (Chapter 2.208) contains provisions for the protection of transportation facilities.
(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below.	
(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;	Bicycle parking is not currently required by code.
(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.	The City's development code requires provision of pedestrian facilities, but bicycle facilities are not expressly required by code.
(B) Bikeways shall be required along arterials and major collectors.	This will be addressed during update of design standards.
(c) Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;	City design standards require sidewalks, but do not require bicycle facilities, except at the direction of the City Engineer.
660-012-0035 Evaluation and Selection of Transportation System Alternatives	
(c) Transportation system management measures;	TDM and TSM measures will be considered during TSP development.
(d) Demand management measures; and	TDM and TSM measures will be considered during TSP development. Amity is not required to develop a TDM plan as its population is less than 25,000 people.
(e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.	A no-build alternative will be considered.

Oregon Highway Plan, 2011

Overview

The Oregon Highway Plan (OHP) is a functional element of the Oregon Transportation Plan. The OHP identifies OR 99 as a Regional Highway within Amity. OR 153 is a District Highway, a lower functional classification than OR 99. The OHP states that regional highways are intended for high-speed travel in rural areas and moderate to high-speed travel in urban areas. District highways largely serve local traffic within counties, with moderate to high-speed travel in rural areas and moderate to low-speed travel in urban areas.

The OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the Oregon Transportation Plan. 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. Policies relevant to the Amity TSP include:

Policy 1A: State Highway Classification System – as discussed above, Amity has two state highways within city limits. OR 99 is a Regional Highway and OR 153 is a District Highway.

Policy 1B: Land Use and Transportation – this policy recognizes that that both the State and local government must coordinate in land use and transportation planning.

Policy 1C: State Highway Freight System – OR 99 is a designated Freight Route. This policy calls for balancing the needs of freight with other uses.

Policy 1F: Highway Mobility Standards - the performance and mobility standards in the OHP vary by location and adjacent land use type, with a higher level of service expectation in the more rural areas and a lower level of service in urbanized areas.

Policy 2D: Public Involvement – this policy requires that affected jurisdictions and the general public be involved in decision-making that affects the state highway system.

Policy 2G: Rail and Highway Compatibility – this policy addresses safety at rail crossings; specific actions include eliminating at-grade crossings wherever possible.

Policy 3A: Classification and Spacing Standards – access management on state highways is addressed by this policy. In general, accesses to state highways OR 99 and OR153 are intended to be as few as possible.

Policy 4B: Alternative Passenger Modes – this policy expresses the State's support for alternative travel modes where feasible.

Recommendation

Policies in the OHP must be considered in any improvements, modifications, or policies that would affect highways OR 99 and OR 153 in Amity. State highways carry the majority of through traffic in Amity, and significant local traffic as well. OHP policies will be important in developing recommended improvements that would impact the accessibility, mobility, or function of each highway.

Oregon Administrative Rule 734-051, Access Management

Overview

Oregon Administrative Rule 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. The provisions in the OAR apply to the roadways under state jurisdiction within Amity, namely OR 99 and OR 153. The access management rules include spacing standards for varying types of state roadways. It also lists criteria for granting right of access and approach locations onto state highway facilities.

Recommendation

State highway OR 99 and OR 153 are located on right-of-way that is owned by the state in places and by the City of Amity. Though Amity owns the right-of-way in some locations, access management standards for state highways OR 99 and OR 153 apply to the entirety of these highways within Amity and must be considered if new road connections or driveway approaches are proposed.

Oregon Revised Statutes 366.215, Freight Mobility

Overview

This statute mandates that roadway capacity not be reduced on designated freight routes in Oregon. ODOT recently updated guidance on this statute in 2011 and 2012. A reduction in capacity is determined by first assessing whether there is a reduction in the "hole-in-the-air," that is, a reduction in the height, width, and length that a truck would occupy along a road segment. Such a reduction can occur though physical obstructions, or lane striping changes. A reduction in the "hole-in-the-air" does not necessarily mean that a reduction in vehicle capacity has occurred. However, projects on designated routes must demonstrate through a process that no reduction in vehicle capacity has occurred. This statute applies to OR 99 within Amity and OR153 west of OR 99 (there is no such designation for OR 153 east of OR 99).

Recommendation

Proposed improvements to OR 99 and OR 153 west of OR 99 will need to be evaluated to determine if a reduction in the "hole-in-the-air" may result. Such a reduction does not mean that the improvement cannot be implemented, but that further review may be needed to determine if the proposed project would need to go through the review process developed by ODOT.

State Highway Design Manual, 2012

Overview

The 2012 Highway Design manual specifies engineering standards for all state highways. The construction and reconstruction of state highways must adhere to the relevant standards contained in the manual.

Recommendation

Any improvements or modifications proposed to highways OR 99 and OR 153 must meet relevant design standards, or apply for an exception through the process provided in Chapter 14 of the Design Manual.

Transportation Safety Action Plan, 2011

Overview

The 2011 Transportation Safety Action Plan (TSAP) is the adopted safety element of the Oregon Transportation Plan. It contains a comprehensive list of strategies and 112 corresponding actions that support safety improvements to Oregon's transportation system. Strategies include enhancing communication and education, supporting timely medical assistance to transportation-related incidents, reducing DUI and other impaired driving, and ensure that laws and regulations support multimodal safety goals.

Recommendation

TSAP actions are primarily implemented by state agencies and agency partners. TSAP actions will affect Amity, and should be considered during development of the TSP.

Oregon Bicycle and Pedestrian Plan (1995) & Design Guide (2011)

Overview

The Oregon Bicycle and Pedestrian Plan (OBPP) is a modal element of the OTP and provides guidance for planning, design, and operation of facilities for bicycle and pedestrian travel. The plan contains standards and designs used on state highway projects for bicycle and pedestrian facilities.
The plan states that bikeway and walkway systems will be established on urban highways, as follows:

- As part of modernization projects (bike lanes and sidewalks will be included);
- As part of preservation projects, where minor upgrades can be made;
- By restriping roads with bike lanes;
- With improvement betterment projects, such as completing short missing segments of sidewalks;

- As bikeway or walkway modernization projects;
- By developers as part of permit conditions, where warranted.

The second section of the OBPP is the technical element of the plan that guides the design and management of bicycle and pedestrian facilities on state-owned facilities. It underwent updates in 2011. Many new pedestrian and bicycle treatments have been developed and included in the update of the Oregon Bicycle and Pedestrian Design Guide.

Recommendation

The OBPP will be considered when proposing pedestrian and bicycle projects on state facilities within Amity.

Other Plans and Guides

National Association of City Transportation Official (NACTO) Urban Bikeway Design Guide

Overview

NACTO's Urban Bikeway Guide provides design guidelines for urban bicycle facilities based on data and research on best practices from many of the top cycling cities in the world. The NACTO Guide includes standards for bicycle facilities, like protected cycle tracks, which are not currently described in AASHTO's Guide for the Development of Bicycle Facilities. NACTO's Guide provides a suite of bicycle facility treatments that can be constructed depending on the type of road and cyclist. Not all design features are currently approved for use in the 2009 Manual on Uniform Traffic Control Devices (MUTCD), but the Federal Highway Administration intends to include NACTO's design features in the next version of the MUTCD.

Recommendation

NACTO's Guide is not necessarily appropriate for the design of bicycle facilities on state highways, or for the design of projects that intend to use federal funds. However, NACTO's Guide can be used in the development of bicycle improvement projects on Amity's city-owned street network.

Evaluation Framework

The Amity Comprehensive Plan provides a goal and policy framework that informs how the project team will evaluate transportation projects and policies during the Amity TSP process. This framework is based on goals and policies of the Amity Comprehensive Plan. The evaluation framework below will be refined based on stakeholder and Public Advisory Committee (PAC) input.

Criterion	Objective	Performance measure
Safety	Address known traffic safety hazards for all modes	Project or program targets a known traffic safety issue(s)
	Enhance pedestrian and cyclist safety	Qualitative assessment of how a project or program improves pedestrian and/or cyclist safety through new facilities, policies, or education
	Improve major street crossings	Number of street crossing projects on streets with collector functional classification or higher.
Environmental Impacts	Avoid impacting open space, trees, and other natural features	Square feet of potential impact to open space, wetlands, natural drainage features, and habitat
	Avoid impacting buildings or private property	Square feet of potential impact to private property, number of buildings affected

Transportation needs of all citizens	The transportation system meets the needs of all users, including underserved groups	Project or program targets underserved groups in the community.
System upgrades and preservation	Upgrade existing city streets to relevant standards	Number of street deficiencies addressed, or number of lane-miles upgraded
	Preserve existing infrastructure	Number of lane-miles (or sidewalk-miles) preserved through construction or reconstruction
Multi-modal system	Address needs of pedestrians	Qualitative assessment of a project or program's provision of pedestrian facilities
	Address needs of cyclists	Qualitative assessment of a project or program's provision of bicycle facilities
Funding & Finance	Pursue all available sources of funding and financing	Project or program aligns with current or potential future funding and financing sources
	Choose the most cost-effective solutions	Assessment of a project or program's relative cost-effectiveness
Aesthetics	Preserve or enhance aesthetics related to the transportation system	Qualitative assessment of potential aesthetics impacts of project
Connectivity	Increase auto connectivity	Project or program reduces out-of-direction travel
	Increase non-motorized connectivity, especially across major roads	Project or program provides new non-motorized connections, especially east-west and north-south across OR 99 and OR 153, respectively
	Reduce emergency response time	Project or program decreases emergency response time, provides redundant access to neighborhoods, or preserves existing response time without negative impacts.

Next Steps

The plan and policy review helps set the context in which the TSP will be developed, and calls out relevant plans, policies, and regulations that will be considered during plan development. The plan and policy review will also assist in developing any needed amendments to City planning documents or municipal code.
The evaluation framework will be used as a decision tool as the public and project team develop transportation system alternatives during the TSP process. The City and PAC has reviewed and provided comments on this plan and policy review, and the evaluation framework.

Appendix B

Technical Memo #1: Existing and Future Conditions

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Existing and Future Conditions

This memorandum describes existing (2013) and future (2038) traffic conditions in the City of Amity, including current and expected future deficiencies. This analysis evaluates streets, public transportation, air, rail, water, and pipeline facilities, bicycle and pedestrian facilities, past and existing sources of funding for transportation projects, and land use and population trends in the City. Existing and expected future deficiencies will inform development of the Transportation System Plan.

The Project Team gathered information on the existing system and identified deficiencies through various methods including a site visit in August 2013; traffic counts collected by the Oregon Department of Transportation (ODOT) in September 2013; Geographic Information System (GIS) map data analysis; review of existing local and regional plans; input from the Project Advisory Committee (PAC); and safety data collected from ODOT.

The information in this memo serves as the starting point for a community discussion about the current state of the transportation system in Amity. This information will be used to help inform project ideas and alternatives to be developed, reviewed, and included in Amity's Transportation System Plan (TSP).

Introduction

Purpose of Transportation System Plan

The Amity TSP is a long-range (20 year) plan that identifies ways to improve connectivity and mobility for all travel modes, support planned land uses and economic development, and reduce reliance on the automobile. The TSP serves as the transportation element of the City's Comprehensive Plan. The TSP will establish a system of transportation facilities and services to meet state, regional, and local needs, while also providing a rationale for making transportation investments and land use decisions. The plan is required by Oregon's *Transportation Planning Rule* and must be consistent with existing local and state policies, plans, and rules.

Study Area

The City of Amity is located in southern Yamhill County. It is roughly seven miles south of McMinnville, the county seat, and 20 miles northwest of Salem. The City's transportation network includes State, County, and City roadways, and a Union-Pacific rail line operated by Portland and Western Railroad

The Amity TSP study area is based on the Amity Urban Growth Boundary (UGB). The northern UGB limit is just north of Rice Lane, extending east past Goucher Avenue, and south along Ash Swale. The western boundary is west of Enos Street, roughly along Salt Creek.

Land Use

This section provides a general overview of land uses within the City of Amity's planning area to inform the TSP in identifying which land uses affect existing and future transportation conditions. Land uses create potential origins and destinations for trips, for example, community members make trips from residential areas, and industrial and commercial areas are destinations for employees and customers.

Amity is located in the western Willamette Valley, 20 miles northwest of Salem. The City has mostly flat topography, with some slopes to the south and west near Ash Swale and Salt Creek, and within the UGB northeast of Amity Elementary School. Salt Creek and Ash Swale are the two primary natural water features within city limits; Salt Creek flows roughly north-south along the western edge of the City, with Ash Swale flowing roughly east-west, forming the southern city limits. Most land surrounding the City is zoned Exclusive Farm Use (EFU) or rural residential, and is primarily agricultural in nature.

Figure 1
Typical residential streetscape in Amity

Most of Amity's 390 acres is zoned residential, served by two lane local roads (Figure 1). Much of the City north of Rosedell Avenue is zoned for high-density residential, with largely medium and low-density residential zoning south of Rosedell Avenue. The residential areas are likely to generate trips in the morning and evening peak hours, as residents travel to and from work, or complete daily activities. The oldest developed parts of the City, dating to the late 1800s, surround the blocks of the central business district (Figure 2). Most property abutting the Portland & Western Railroad, just west of OR 99W/Trade Street is zoned light industrial with a winery, storage facilities, and warehouses abutting the rail line. Commercial and industrial land attracts trips from employees and customers throughout the day. Amity's city park is located just west of the railroad, along 5th Street/OR 153.

Land uses abutting OR 99W/Trade Street are mostly commercial in nature. The historic downtown commercial core is located along OR 99W/Trade Street from Nursery Avenue, north to approximately 3rd Street. Amity has three schools – Amity Elementary School, Amity Middle School, and Amity High School – all located east of OR 99W/Trade Street.

Demographics

Title VI of the Civil Rights Act requires that no person be excluded from participation or subjected to discrimination with regard to "race, color, national origin, economic status, disability, or sex." In addition, agencies must take reasonable steps to ensure that those with limited English language proficiency are afforded equal access to programs, services, and information. The Oregon Department of Transportation has an adopted Title VI plan which details how the agency will address non-discrimination requirements for recipients and sub-

recipients of federal funds. In order to ensure equal opportunity for inclusion in the transportation system planning process, Title VI populations are identified to understand how best to increase opportunities for participation.

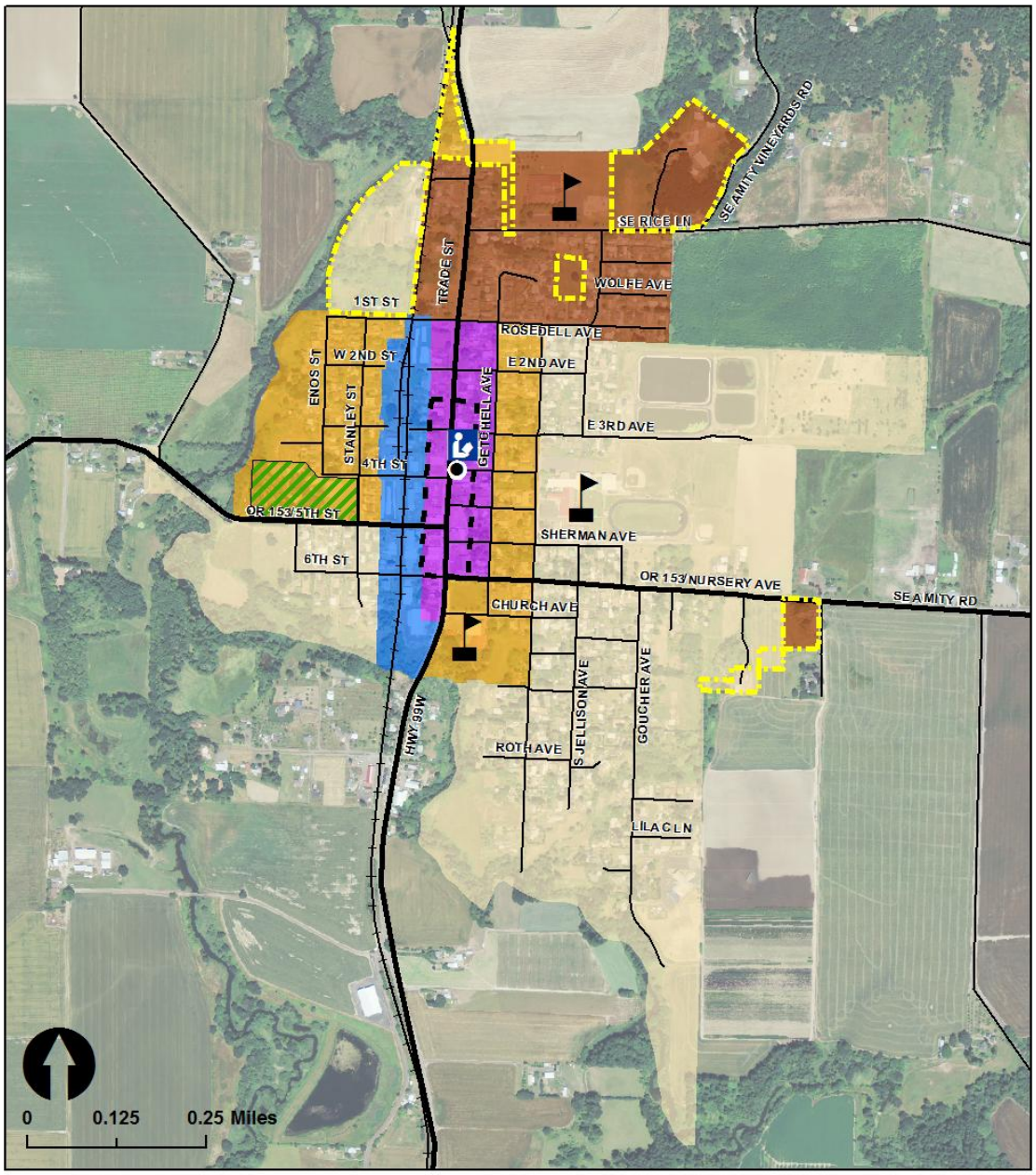
Low-income, elderly, and minority residents are more likely to be dependent on transit, are more sensitive to gas prices, and are less likely to own a personal vehicle. These groups are greatly impacted by transportation reliability – missed appointments or arriving late to work are important concerns. The project team will therefore pay special consideration to the needs of these groups during the transportation system planning process.

The City of Amity is located entirely within Block Group 2 of Census Tract 310. While this Block Group encompasses a much larger geographic area than the City, Amity represents the majority of the population. Demographic information from the US Census is assumed for this project to serve as a proxy for the City's demographics. Table 1 describes selected demographics for Amity, as well as Yamhill County and the state of Oregon. Amity has a higher number of families living in poverty and a greater number of minority residents as compared to the county and state.

Table 1
Selected demographics for Amity

Demographic Category	Amity	Yamhill County	Oregon
Population over age 65	12.7%	14.5%	14.9%
Families in poverty	18.9%	12.8%	14.8%
Households where language other than English is spoken	5.2%	-	-
Minority status	16.0%	7.8%	11.7%
Hispanic origin	15.0%	15.3%	12.2%

Data from 2010 US Census and 2007-2011 American Community Survey data



Amity Transportation System Plan
Comprehensive Plan Land Use Designations & Major Destinations

Legend

Comprehensive Plan Land Use Designations
- LOW RESIDENTIAL
- MEDIUM RESIDENTIAL
- HIGH RESIDENTIAL
- GENERAL COMMERCIAL
- LIGHT INDUSTRIAL

City Hall
Library
Schools
Urban Growth Boundary
Parks
Central Business District

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography

Date: 11/11/2013

Path: \\Rosa\Proj\ODOT\477622AmityTSP\GIS\MapFiles\LandUse.mxd

Figure 2

Population

As of the 2010 census, Amity had a population of 1,614 people, an increase of 136 people over the 2000 census. The City recently completed a 44 acre Urban Growth Boundary (UGB) expansion to meet its housing and public facility needs through 2030. In 2012, Yamhill County approved a coordinated population forecast for the County and its junior jurisdictions, including Amity. Amity is forecast to have a 2030 population of 1,984, and for the purposes of the TSP and future traffic analysis, the 2038 population is expected to be 2,161 persons.

Existing Transportation System

Streets

Amity's street system is comprised entirely of city-owned facilities (Figure 4). The two state highways – OR 99W/Trade Street and OR 153/Nursery Avenue – are state facilities located on City-owned right-of-way. This is a somewhat unique condition, in which the state department of transportation has maintenance jurisdiction over the road surface, but all other responsibilities lie with the City.

OR 99W/Trade Street within Amity is designated by ODOT as a Regional Highway. OR 153 through Amity is a District Highway, a lower functional classification than OR 99W/Trade Street. The Oregon Highway Plan states that regional highways are intended for high-speed travel in rural areas and moderate to high-speed travel in urban areas. District highways largely serve local traffic within counties, with moderate to high-speed travel in rural areas and moderate to low-speed travel in urban areas.

The street network is primarily local streets that serve single and multi-family residences. Most local streets connect to one of the two state highways – OR 99W/Trade Street, OR 153/Nursery Avenue, and OR 153/5th Street – that run north-south and east-west, respectively, through town. OR 99W/Trade Street, OR 153/Nursery Avenue, and OR 153/5th Street carry the majority of through traffic within the City and are the primary routes for residents headed to destinations outside Amity. OR 99W/Trade Street also experiences a considerable amount of local traffic, due to the restaurants, businesses, shops and residents that abut the state highway and few alternate local routes off of the highway. OR 99W/Trade Street and OR 153/Nursery Ave and OR 153/5th Street are also the two primary routes used by freight trucks within Amity; OR 99W/Trade Street and OR 153/5th Street west of OR 99W/Trade Street are both designated freight routes. The City and ODOT recently improved OR 99W/Trade

Figure 3
Recent improvements on Trade Street/OR 99W include new sidewalks, bike lanes, and street trees.

Street downtown, with new pavement, striping, sidewalks, bicycle lanes, and other street amenities.

Amity's local streets are generally paved in asphalt or cement concrete pavement, with paved widths varying between streets. Some streets are unpaved. The City also has alleyways that connect many of the older neighborhoods in town; some alleys function as local streets in certain neighborhoods, while others are unimproved or have been encroached upon by neighboring property owners.

Street rights-of-way (ROW) vary in width, with some ROWs as great as 70 feet in width, while others are as narrow as 40 feet or less. ROWs vary due to historical quirks in the original platting of the City, and full and half-street vacations over the years, especially east of OR 99W/Trade Street. Some unimproved rights-of-way have been vacated entirely near OR 99W/Trade Street and the rail line.

Several natural and human-made barriers constrain the local street network. Ash Swale, which forms the southern city limits, presents a natural barrier to street connectivity within southern Amity; there is compromised street connectivity within neighborhoods to the south of OR 153/Nursery Avenue and east of Ash Swale. Residents on Goucher Avenue, Jellison Avenue, and Oak Street can only egress through OR 153/Nursery Avenue or Church Street. Goucher Avenue south of Roth Avenue has no alternate connection to the street network, presenting an emergency access concern. PAC members also expressed concerns over speeding on all streets in Amity.

A rail line, owned by Union Pacific and leased by the Portland and Western Railway, runs north-south just west of OR 99W, creating a barrier to east-west street connectivity in town. There are several improved and unimproved crossings, but the rail line interrupts the grid street pattern found elsewhere in the City. 1st, 4th, OR 153/5th, and 6th Streets all cross the rail line. Only the intersection with OR 153/5th Street is gated. Rail traffic presently causes little, if any impacts to east-west travel as there are only two trains per day.

Within Amity are two bridges, both owned by the state. The Ash Swale Bridge on OR 99W/Trade Street was built in 1919, and the 2012 ODOT Bridge Condition Report lists the bridge in fair condition, and it is not structurally deficient. OR 153 crosses Salt Creek on a timber bridge, built in 1951, on the west side of town, and according to the City, this bridge is structurally deficient, indicating a more imminent need to repair or replace the bridge.

Stakeholders identified concerns with street drainage, indicating that many streets lack adequate storm drainage infrastructure.

Bicycle Facilities

There is little dedicated bicycle infrastructure in Amity. The City and ODOT recently improved OR 99W/Trade Street and includes bicycle lanes in the downtown section of OR 99W/Trade Street.

Outside of downtown, paved shoulders serve as the bicycle facility. There are no other dedicated bicycle facilities in the City. Amity's local street network generally has low traffic volumes and low speeds, and is suitable for cycling. However, crossing OR 99W/Trade Street and OR 153/Nursery Avenue is intimidating for cyclists because of high traffic volumes, higher traffic speeds, and a lack of signalized intersections.

Bicycle Level of Stress Assessment

As TSPs become more focused on alternate transportation modes to the single occupant vehicle, it is important to be able to qualitatively assess facilities for non-auto modes, including bicycles. Bicycling is a viable alternative for simple, short trips generally under five miles. The project team assesses the quality of the bicycling facilities to identify any gaps or deficiencies to then consider when developing projects to address these identified issues.

The Amity TSP is one of the first plans to utilize a new methodology for evaluating the quality and perceived comfort of bicycling facilities, called the "bicycle level of stress." Bicycle level of stress (BLOS) refers to the comfort or discomfort different kinds of cyclists (the general cycling "types" are: No Way, No How, Interested but Concerned, Enthused and Confident, and Strong and Fearless) may feel on any particular street and street crossing. The team used BLOS methodology developed by the Mineta Transportation Institute, which specifies BLOS for road segments and crossings based on a number of factors, including the number of through lanes, prevailing traffic speed, presence of street parking, and others. With this methodology, a bicycle route is only as good as its most stressful segment or crossing; that is, street segments are assigned a BLOS rating from 1 (least stressful for cyclists) to 4 (most stressful), and a route's overall stress level is based on the highest-stress segment on that route. Routes rated at BLOS 1 are generally suitable for the most inexperienced or vulnerable riders, including children and those who do not typically cycle on-street. Routes rated BLOS 4 are only suitable for the most "strong and fearless" cyclists, who are generally interested in fast bicycle travel and are less concerned about traffic conditions. Bicycle routes to schools should consistently be BLOS 1.

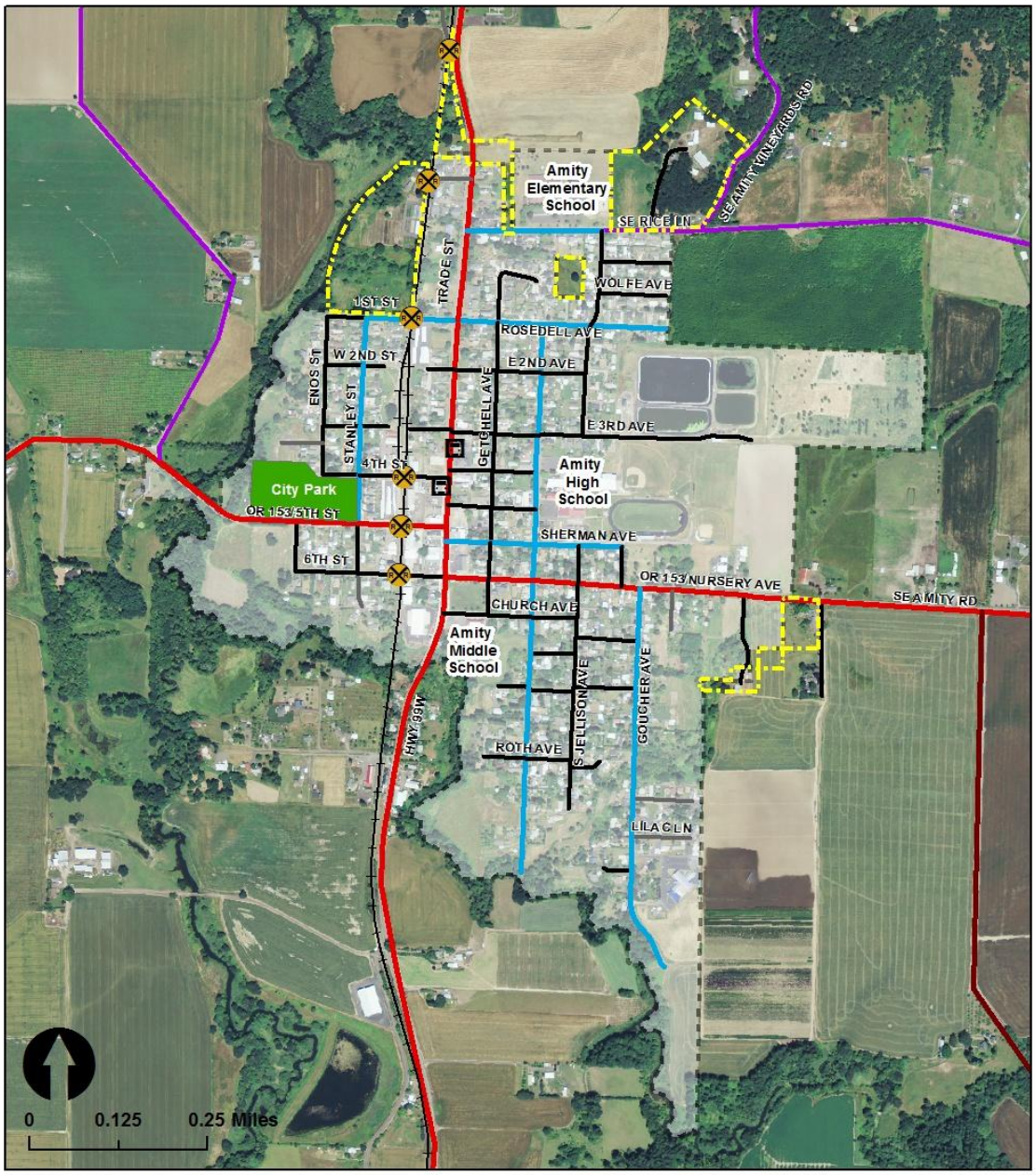
Applying BLOS methodology to Amity's street system reveals that most local streets are characterized as BLOS 1, the lowest stress level (Figure 6). Collector streets are all rated BLOS 2, due to the larger traffic volumes on these streets. All of OR 153 that runs through Amity is rated at BLOS 3 due to the lack of dedicated bicycle facilities and 30 MPH speed limit. OR 99W/Trade Street has dedicated bicycle facilities for much of its length, except for the northern and southernmost sections of the road. No streets in Amity are rated BLOS 4, the highest-stress streets.

There are few continuous low stress (BLOS 1) routes between Amity's three schools. Additionally, OR 153 and OR 99W/Trade Street may present barriers to crossing for children who would bike to school; none of the crossings on OR 99W/Trade Street or OR 153/Nursery Ave/5th Street are rated above a BLOS 1 according to the BLOS methodology, though they are likely barriers for many due to higher traffic volumes and speeds on both these state highways, though the striped pedestrian crossings do provide specific crossings for bicyclists who are willing to dismount and cross OR 99W/Trade Street as pedestrians while walking their bikes. Amity

Elementary in particular, which attracts the most vulnerable bicyclists in the community, lacks low-stress cycling routes in its vicinity.

The central business district, which includes City Hall and the public library along OR 99W/Trade Street (from OR 153/Nursery Avenue north to about 3rd Avenue) is relatively accessible by bicycle from the surrounding neighborhoods. The City Park is less accessible, as it is primarily accessed by OR 153/5th Street and Stanley Street, a collector street with higher traffic volumes than surrounding residential streets.

Overall, most of Amity's street system allows for relatively low-stress cycling, except for the state highways that cross town. This assessment is important to consider when developing projects for the TSP; the project team will work with the community to address the deficiencies identified in the City's bicycling network.



Amity Transportation System Plan
City Streets

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography

Legend

- City Limits
- Urban Growth Boundary
- Parks
- Bus stops
- Railroad Crossings

Streets

- Arterial (State Hwy)
- County Arterial
- Collector
- County Collector
- Local
- Private
- Railroad

Date: 2/17/2014

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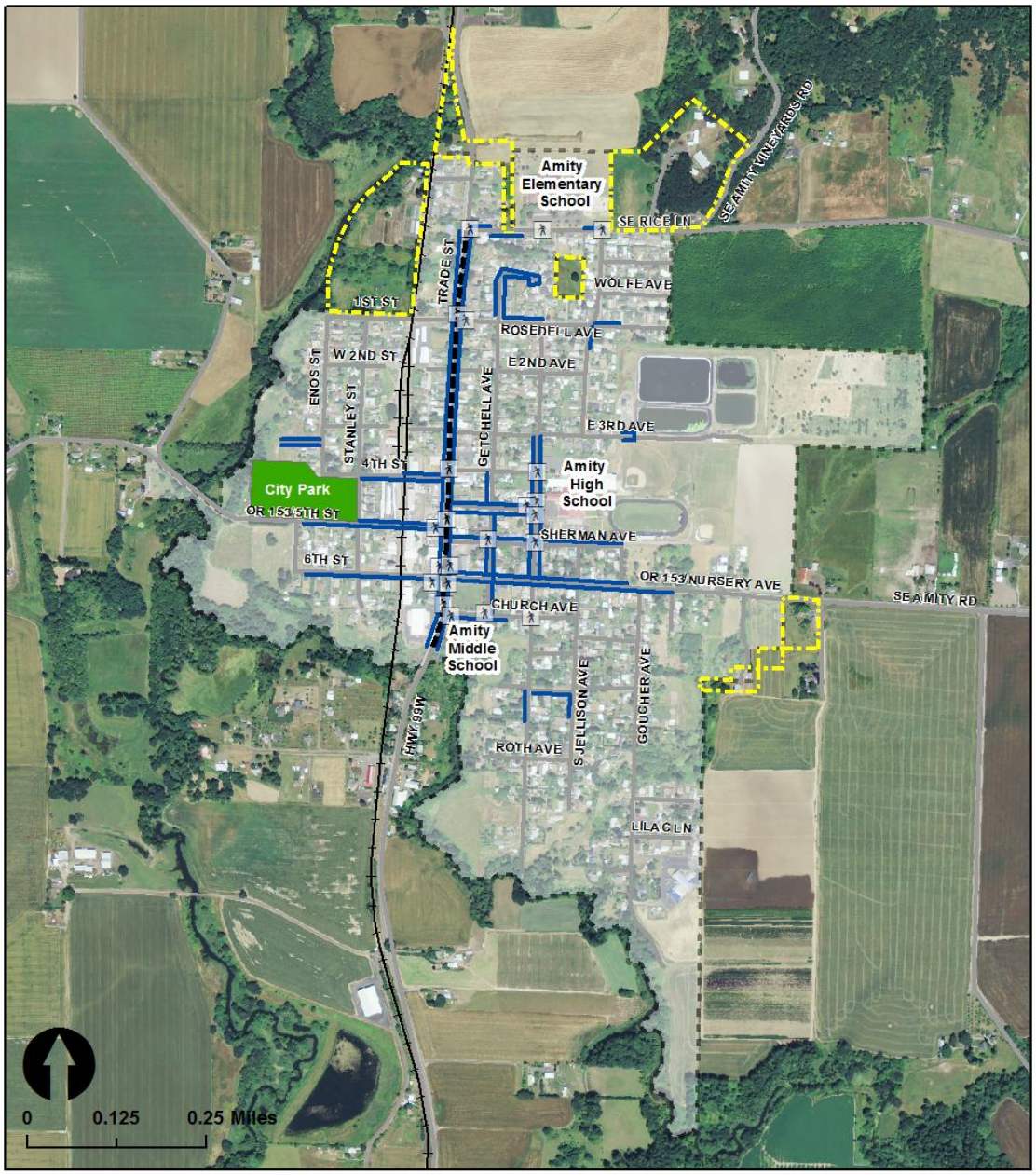
Figure 4



Amity Transportation System Plan
Bicycle and Pedestrian Facilities

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography
(3) Sidewalks and bike lanes digitized based on 8/6/13 site visit

Legend

Existing Facilities
- Sidewalks
- Bike Lanes
- Marked Crosswalks
- Parks
- Urban Growth Boundary
- City Limits

Date: 12/18/2013

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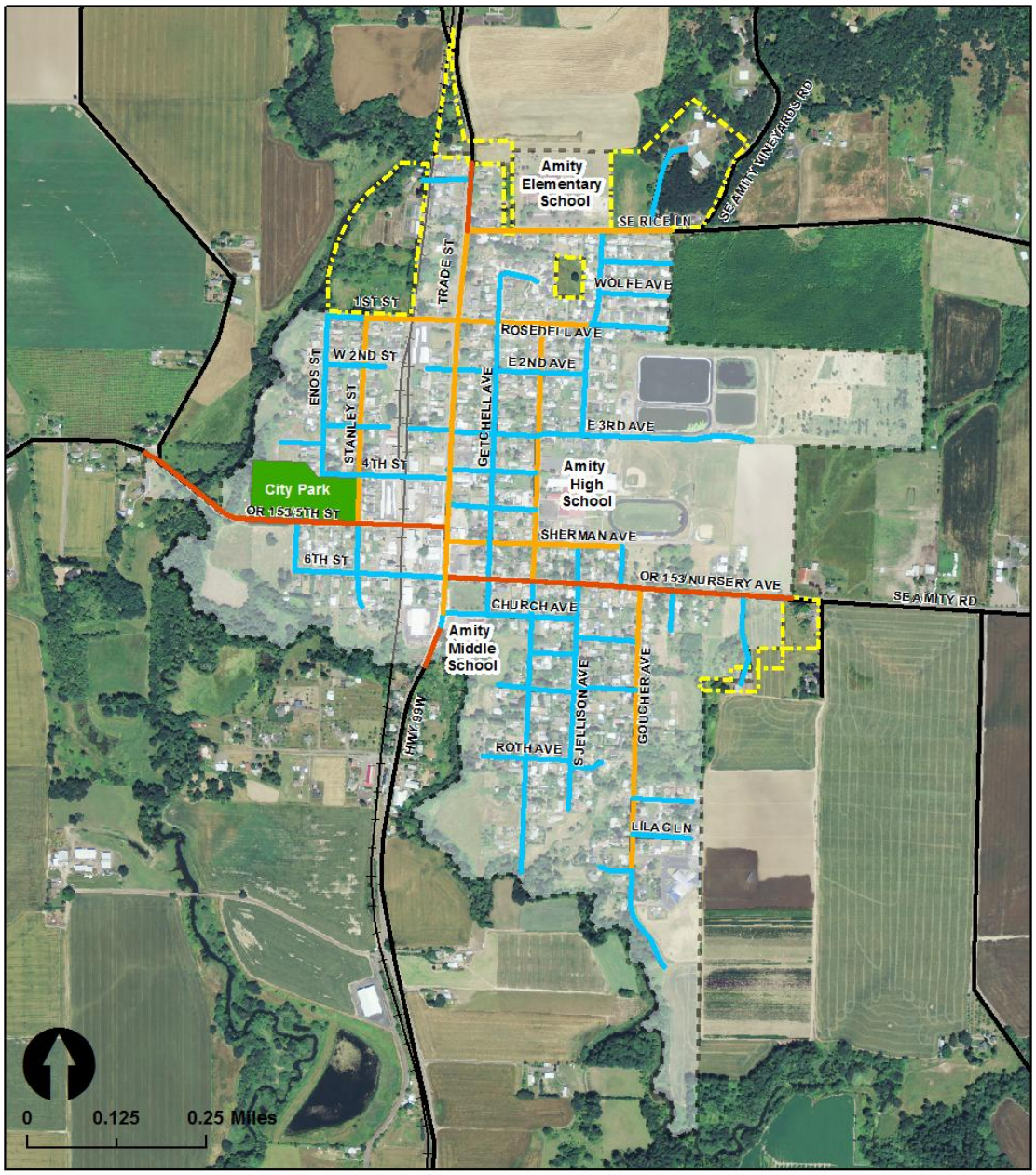
Figure 5



Amity Transportation System Plan
Bicycle Level of Stress Assessment

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography

Legend

City Limits
Urban Growth Boundary
Parks

Level of Stress Rating

1
2
3

Date: 11/11/2013

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Figure 6

Pedestrian System

There are sidewalks on many, but not all of the local streets within Amity (Figure 5). Sidewalks are generally 4 – 5' in width, wider in downtown and in some neighborhoods. Many sidewalks in the older neighborhoods of town have sunken below their original grade, have been encroached on by private property owners, or have nearly disappeared due to vegetation encroachment and are in need of reconstruction (Figure 6). The bridge crossing Ash Swale on OR 153/5th Street has no shoulder and no safe crossing for pedestrians.

Sidewalks are discontinuous in many areas of the City. The City and ODOT improved sidewalks and pedestrian amenities in downtown with the recent improvements to OR 99W/Trade Street, which included new sidewalks, marked crosswalks, street lighting, landscaping, and benches.

Most sidewalks, except those that were recently improved in downtown, do not have Americans with Disabilities Act (ADA)-compliant sidewalk ramps. The majority of sidewalks meet minimum ADA width and maximum slope standards.

Figure 6: Some sections of sidewalk are severely deteriorated or encroached on by vehicle parking or vegetation

Sidewalks are present adjacent to most key community destination in downtown, including City Hall, Library and the central business district. However, continuous sidewalks are almost entirely absent near Amity Elementary School and the City Park, with better sidewalk connectivity near Amity Middle School and Amity High School.

OR 99W/Trade Street, OR 153/Nursery Avenue, Ash Swale, and the railroad present barriers to pedestrian travel, and limit the ability of pedestrians to walk from one quadrant of the City to another. Similarly, a lack of continuous sidewalks on at least one side of the block on local streets may discourage some pedestrians, especially students who would otherwise walk to or between any of the three local schools. Amity School District currently buses students from areas west of OR 99W/Trade Street due to the unimproved railroad crossings for students who live west of OR 99Wthe railroad.

There are no off-road pedestrian or bicycle trails in Amity. The 2011 Parks Master Plan notes that, on average, there are 0.18 miles of trail per 1,000 residents in Oregon cities. Based on population projections, the Plan anticipates that Amity would need about 0.80 miles of trails and paths by 2030 to meet existing and future recreational demand. The Parks plan recommends a 2.82 mile trail that would follow Ash Swale and other natural drainages. The TSP will consider this trail in the list of projects to include in the plan.

Pedestrian Activity

The project team assessed pedestrian activity levels at several key intersections in Amity from a variety of data sources and times of day. Table 2 shows the study intersections and total pedestrian activity levels. The intersection of OR 99W/Trade Street and 6th Avenue/6th Street experiences the highest daily volume of pedestrian traffic of the intersections studied; however, because count durations vary, it is difficult to determine with certainty if this is the busiest location for pedestrians. OR 99W/Trade Street and OR 153/5th Street also experiences relatively high pedestrian traffic. These locations are both within the central business district, which likely explains the high amount of pedestrian activity. High activity at Rice Lane is likely due to pedestrians heading to and from Amity Elementary School.

Table 2 also includes City-conducted pedestrian counts on additional intersections in Amity to provide a more comprehensive understanding of pedestrian movement within the City. Diagrams depicting pedestrian movements at select intersections are included in Attachment 1. Nearly all of these counts were conducted from 7 AM to 4 PM. Pedestrian activity on Church, Oak and Sherman is likely related to Amity Middle School and Amity High School.

Table 2
Intersection pedestrian counts

Intersection	Time	Total no. of peds.	Average peds./hour	No. peds. in busiest hour[1]	Highest volume crossing
ODOT pedestrian counts					
OR 99W/Trade Street at 1st Street/Rosedell Ave	6 AM – 10 PM	129	8	34	OR 99W/Trade Street (south leg) - 48
OR 99W/Trade Street at OR 153/5th Street	6 AM – 10 PM	228	14	31	OR 153/5th Street - 131
OR 99W/Trade Street at 6th Avenue/6th Street	6 AM – 10 PM	474	30	95	6th Street - 131
OR 99W/Trade Street at Rice Lane	6 AM – 10 PM	191	12	65	Rice Lane – 139
OR153/5th Street at Stanley Street	2 PM – 6 PM	36	2	16	OR 153/5th Street (east leg) - 15

[1] This count represents the busiest hour for pedestrian activity at each intersection. The busiest hour is not necessarily the same hour during the day at all intersections.

Intersection	Time	Total no. of peds.	Average peds./hour	No. peds. in busiest hour[1]	Highest volume crossing
OR 153/Nursery Avenue at Oak Avenue	2 PM – 6 PM	161	10	80	OR 153/Nursery Avenue (east leg) - 84
City pedestrian counts					
OR 99W/Trade Street at 4th & Maddox	7 AM – 4 PM	152	17	34	OR 99W/Trade Street (north leg) - 69
OR 99W/Trade Street at Woodson	7 AM – 4 PM	112	12	46	OR 99W/Trade Street (south leg) - 78
OR 153/Nursery Avenue at Getchell	7 AM – 4 PM	70	8	26	OR 153/Nursery Avenue (east leg) - 19
Church Street at Getchell Avenue	7 AM – 4 PM	174	19	95	Getchell Avenue (south leg) - 102
Oak Street at Sherman Avenue	7 AM – 4 PM	173	19	49	Sherman Avenue (east leg) – 91
Oak Street at Woodson Avenue	7 AM – 4 PM	168	19	62	Oak Street (north leg) - 88
Oak Street at Maddox Avenue	7 AM – 4 PM	103	11	56	Oak Street (south leg) - 89
Rice Lane at Jellison Avenue	7 AM – 4 PM	85	9	41	Rice Lane (west leg) - 50
Jellison at Rosedell	7 AM – 4 PM	80	9	48	Jellison (north leg) - 30
Oak Street at 3rd	7:30 AM – 4 PM	154	18	52	Oak (south leg) - 67

Transit & Ridesharing

Yamhill County Transit Area (YCTA) provides routed and dial-a-ride bus service to urban and rural areas of Yamhill County. Amity is served by the McMinnville-West Salem route, with 5 roundtrips weekdays. The first trip departs at 6:00 AM from McMinnville, and the last trip departs at 5:30 PM. There is no weekend routed transit service in Amity. Dial-a-ride service is available weekdays from 8:00 AM to 4:30 PM. A one-way ticket on YCTA routed bus service costs $1.25, and dial-a-ride trips cost $1.75.

There are two bus stops in Amity. The southbound stop is located at the Chevron station on OR 99W/Trade Street and 4th Street. The northbound stop is located at Amity Library, midway

between 3rd and 4th Avenue. The Amity Library stop has a bench and shelter, but the Chevron stop has no amenities and no sign indicating the stop. There is no specific pull-out area designated for buses at either stop.

According to available census information,[2] no workers used transit to commute to work in Amity. Approximately 5% of workers carpooled to work.

Air, Rail, Water and Pipeline

The nearest airports to Amity are McMinnville Municipal Airport to the north and Salem Municipal Airport to the southeast. Both are general aviation airports, with no commercial service. Salem's airport had commercial service until 2008, but no carriers currently provide passenger service. Portland International Airport (53 miles by car) is the closest commercial airport to Amity, providing frequent domestic and international air service.

A Union Pacific-owned railroad runs north-south through the west side of Amity. Portland and Western Railroad (PNWR) leases the line, running one train each direction daily. Only freight service is provided, with no stops in Amity. In addition to freight, passenger rail service is available in Salem. The Amtrak Cascades route runs several times daily between Eugene and Vancouver, B.C. and the Coast Starlight provides daily service to southern Oregon and California.

One natural gas pipeline, owned by Cascade Natural Gas, runs north-south through Amity. The pipeline roughly follows OR 99W/Trade Street at the north end of town, then Stanley Street, and back along OR 99W/Trade Street at the south end of town.

There are no navigable waterways within or near Amity.

Transportation Finance

Transportation revenues for Amity primarily come from Amity's share of the state gas tax. Annual revenues over the last several years have generally varied between approximately $65,000 and $88,000. The City also recently enacted a transportation utility fee, which is currently $2.00 per household per month and $0.25 per trip (based on trip generations assumptions) for other uses. The City has also received grant revenues ($25,000 in several years) from the state's Special City Allotment (SCA) grant program, which provides grants of up to $50,000 to small communities for transportation improvement projects. Most of the City's transportation revenues, except for the SCA grant monies, are spent on street maintenance and preservation.

[2] American Community Survey 2012 5-year estimates. Data is available for Census Tract 310, which includes Amity and the surrounding community.

Dedicated revenue sources for transportation, primarily from state gas tax distributions, are likely to remain steady in coming years or increase slightly, in real dollar terms, as the economy continues to improve and gas tax receipts increase as a result. However, revenues are unlikely to change much in absolute terms (Table 3). Future income from system development charges (not included in the table) is difficult to predict, and highly dependent on economy and the scope and scale of future development in Amity. Income from the transportation fee is also likely to remain relatively steady, but will increase somewhat over time as the number of households in Amity increases. Fee revenue is used for transportation system maintenance and operations; while these fees are not used for capital improvement projects, they free up other street resources that can be dedicated to capital improvements. The City has successfully utilized the SCA grant program in the past, and this could continue to be a reliable source of additional transportation funds for certain projects in the future.

Table 3
Recent and anticipated future local transportation funding

Funding Source	2011[3]	2012	2013	2018	2023
Gas tax revenue[4]	82,300	89,700	88,080	90,000	99,000[3]
Transportation fee revenue	6,800[5]	16,400	16,400	18,000[6]	19,500
TOTAL DEDICATED REVENUES:	*89,100*	*106,100*	*104,480*	*108,000*	*118,500*

Existing Traffic Operations

The project team evaluated traffic operations within Amity at five key study intersections and three key study roadway segments. Intersections and roadways were analyzed for traffic operations, deficiencies, and safety conditions.

Study Area Limits

Figure 7 shows the locations of the study intersections and roadways. Table 4 outlines the location of each intersection, in terms of highway mileposts, and the limits and jurisdiction of each study roadway.

[3] All years are city fiscal years (June to July) and figures presented in 2013 dollars.
[4] All revenues are presented in 2013 inflation-adjusted dollars.
[5] Fee enacted in May, 2011.
[6] Fee revenue increases based on assumed growth in number of housing units paying the fee.

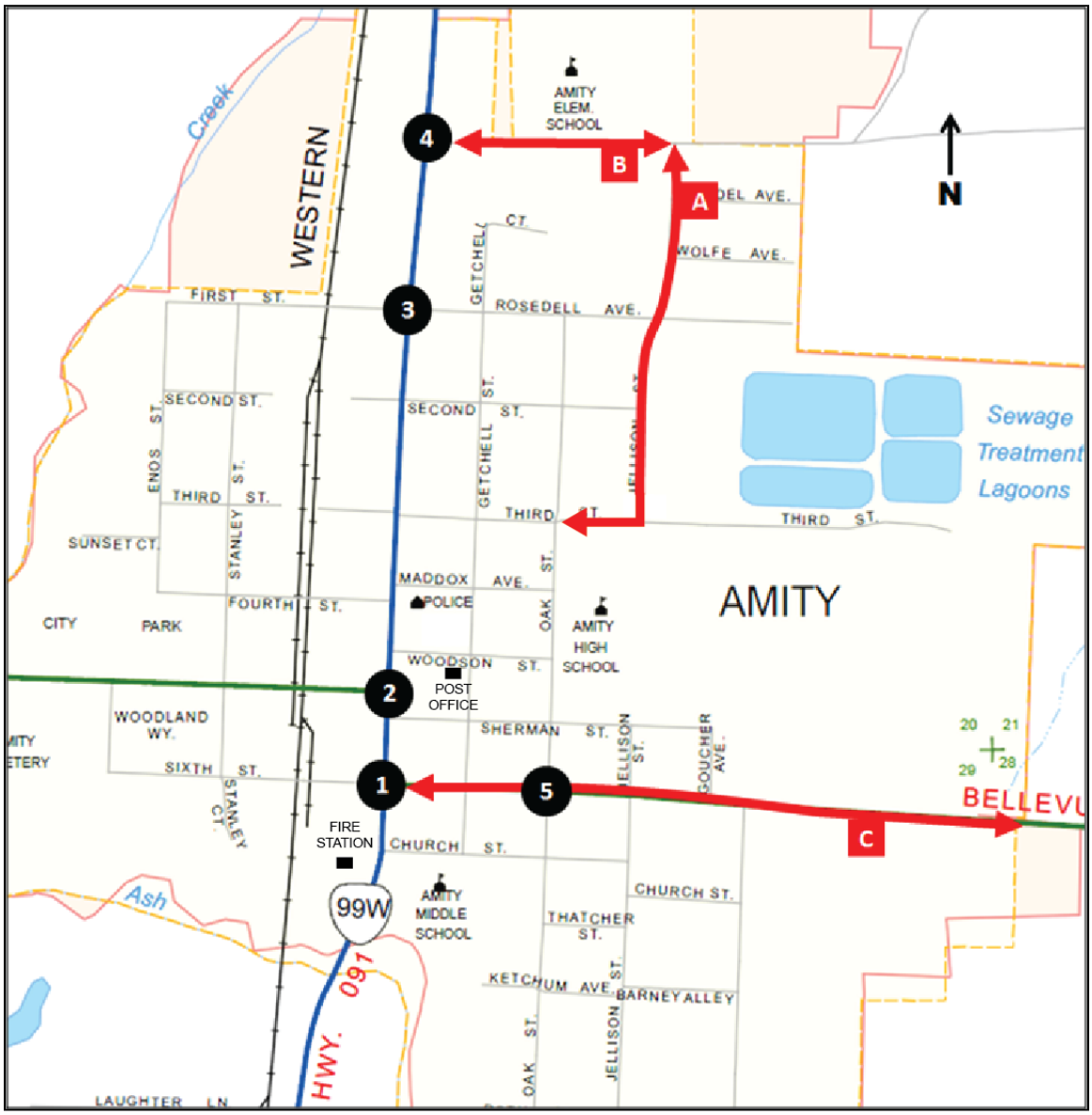


Figure 7 Amity TSP Study Locations

Table 4
Amity TSP Study Location Descriptions

ID #	Intersection	Intersection Type	Milepost	Jurisdiction
1	OR 99W/Trade Street at OR 153/Nursery Avenue	TWSC	OR 99W - MP 44.75	ODOT/City
2	OR 99W/Trade Street at OR 153/5th Street	TWSC	OR 99W - MP 44.68	ODOT/City
3	OR 99W/Trade Street at 1st Street	TWSC	OR 99W - MP 44.39	ODOT
4	OR 99W/Trade Street at Rice Lane	TWSC	OR 99W - MP 44.26	ODOT
5	Oak Avenue at OR 153/Nursery Avenue	TWSC	OR 153 - MP 6.42	ODOT/City
ID #	**Roadway**	**From**	**To**	**Jurisdiction**
A	Jellison Avenue/3rd Avenue	Rice Lane	Oak Avenue	City of Amity
B	Rice Lane	OR 99W/Trade Street	Jellison Avenue	City of Amity
C	OR 153/Nursery Avenue	OR 99W/Trade Street	East City Limit	ODOT/City

TWSC – Two-way Stop Control

Methodology: Performance and Mobility Targets

ODOT bases mobility targets on the vehicle demand (volume) versus the capacity of that intersection for study intersections under ODOT jurisdiction. These targets are termed volume to capacity (v/c) ratios, and are documented in the 1999 Oregon Highway Plan (OHP) as a method to gauge reasonable and consistent standards for traffic flow. The v/c targets take into account functional classification, location, and role of the intersection within the state highway system. The project team compared intersection operations at the study locations, measured in terms of v/c ratios, to the OHP mobility targets to determine if they currently maintain or fail to meet their appropriate mobility. The state highways in Amity are located on city-owned right-of-way. Under this unique situation, ODOT mobility targets apply only at highway-to-highway intersections. At intersections between city streets and the highway, city mobility targets would apply; however, Amity does not presently have adopted mobility standards. The TSP will include recommended mobility standards for the City to use and apply to city intersections and city street and highway intersections.

The project team analyzed traffic operations using 30th highest hour volumes. The project team followed procedures outlined in ODOT Transportation Planning and Analysis Unit's *Analysis Procedures Manual*, and assessed raw count volumes to determine a system peak hour (4:45 p.m. to 5:45 p.m.) and seasonally adjusted the volumes to develop 30th highest hour volumes

(30th HHV). Seasonal adjustments consider the traffic trends over the year, and take into account the variation between the peak month and the month raw counts are taken.

Jellison Avenue and Rice Lane are under City jurisdiction and are qualitatively evaluated for roadway operations. The remaining roadway segment, OR 153/Nursery Avenue between OR 99W/Trade Street and the east city limits, is a two-lane state highway and is evaluated against the appropriate OHP mobility target. Acceptable v/c ratios for intersections and OR 153/Nursery Avenue are those less than the targets shown in Table 5.

Table 5
Amity TSP Mobility Targets

		Existing Mobility Targets[1]	
ID #	Intersection	Major Street	Minor Street
1	OR 99W/Trade Street at OR 153/Nursery Avenue	0.90	0.95
2	OR 99W/Trade Street at OR 153/5th Street	0.90	0.95
3	OR 99W/Trade Street at 1st Street	0.90	0.95
4	OR 99W/Trade Street at Rice Lane	0.90	0.95
5	Oak Avenue at OR 153/Nursery Avenue	0.95	0.95
ID #	Roadway	Existing Mobility Targets[1]	
A	Jellison Avenue (between Rice Lane and 3rd Street)	N/A	
B	Rice Lane (between OR 99W/Trade Street and Jellison Avenue)	N/A	
C	OR 153/Nursery Avenue (between OR 99W/Trade Street and east City limit)	0.95	

[1] Source: Oregon Highway Plan as Adopted in December, 2011 (Table 6).
N/A – OHP mobility targets are not applicable to City roadways.

In addition to v/c ratios, the project team reported levels of service (LOS) for the intersections. The City does not have LOS targets or mobility standards that must be met, but the LOS helps quantify the degree of comfort for drivers. It generally describes operating conditions in six letter-grade categories, which correspond to ranges of average vehicle delay times and differ for stop-controlled and signalized intersections. LOS A typically represents conditions with little or no delay, while LOS F indicates poor operations with high delay or extreme congestion. Because none of the study intersections are currently signalized, Table 6 shows the LOS categories in reference to delay times for stop-controlled intersections. For most comparable jurisdictions, the acceptable level of congestion is an E or an F, and is determined by the City. Since the City has no existing LOS Standards, the Amity TSP will include the acceptable LOS for future standards.

Table 6
Amity TSP Level of Service Criteria – Stop Controlled Intersections

Level of Service Grade	Average Vehicle Delay (seconds per vehicle)	General Description
A	≤ 10	Few or no traffic delays- individual users are virtually unaffected by the presence of other vehicles
B	> 10 and ≤ 15	Short traffic delays – traffic flow is stable, but the presence of other users begins to be noticeable
C	> 15 and ≤ 25	Average traffic delays – traffic flow is stable, but other traffic begins to significantly affect individual users
D	> 25 and ≤ 35	Long traffic delays – traffic flow is dense but stable, other users restrict individual driver maneuverability
E	> 35 and ≤ 50	Very long traffic delays – operations are at or near capacity levels and unstable, freedom to maneuver is difficult
F	>50	Extreme traffic delays – operations are at breakdown where demand exceeds capacity, delay and queuing may cause severe congestion

Source: 2010 Highway Capacity Manual.

The project team also evaluated intersection operations in terms of queue lengths, which are the number of vehicles backed-up at stop-controlled intersection approaches. Queues are evaluated against available storage, which typically includes the length of turn lanes and/or the distance back to an intersection upstream. Queues that extend back beyond this storage length could indicate a deficiency at the intersection and should be analyzed further.

Existing Traffic Analysis Results

Results of the existing traffic analysis indicate acceptable operations at the study intersections and on the study roadways.

Intersection Operations

ODOT collected turning movement count data at the study intersections in September 2013. At all but one location, 16-hour counts were taken. At the intersection of OR 153/Nursery Avenue and Oak Avenue, ODOT took a 4-hour turning movement count to capture the peak hour. The project team used Synchro, version 8, to analyze seasonally adjusted intersection volumes occurring between 4:45 PM and 5:45 PM, using the most recent methodology described in the 2010 Highway Capacity Manual.

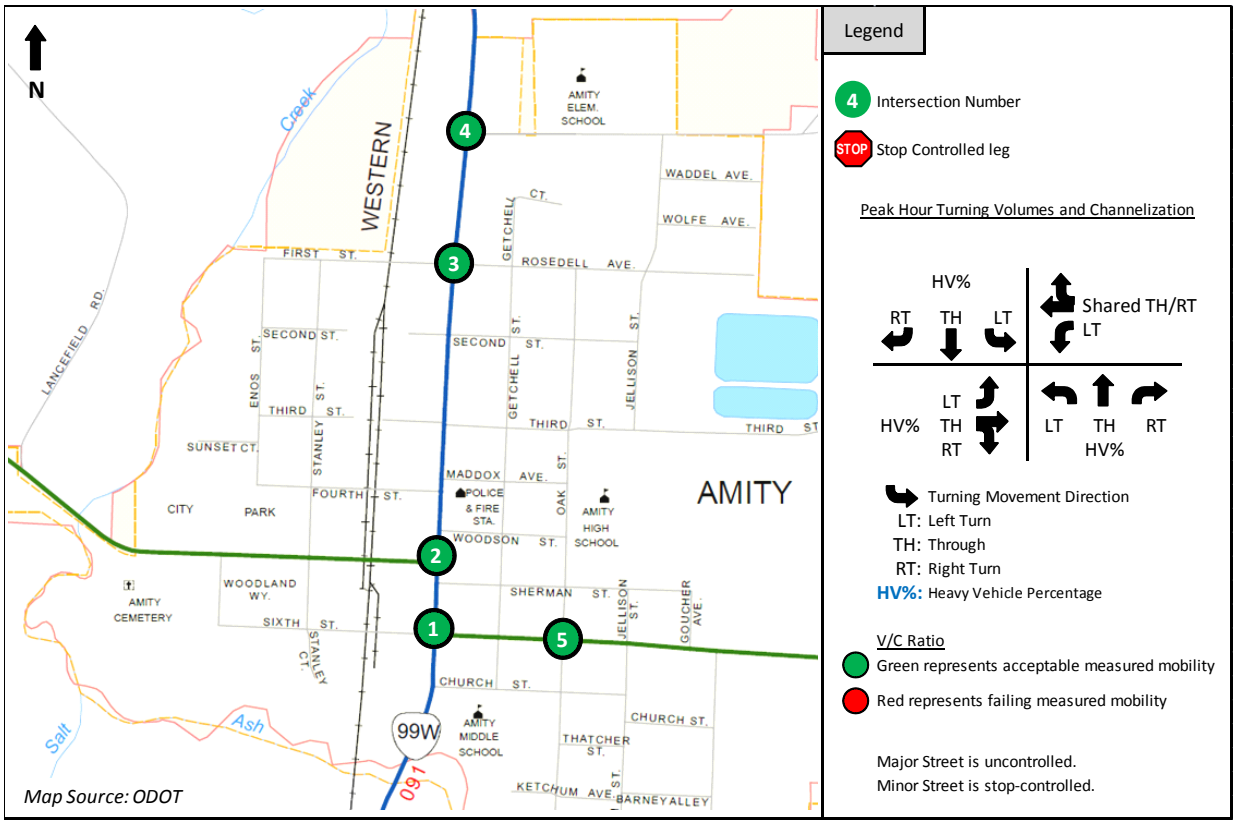
Intersection analysis reveals that the study locations meet mobility standards, on both the major street and minor street approaches, at each of the five locations. The worst v/c ratio at any study intersection is 0.47, which occurs on the eastbound approach to OR 99W/Trade Street at OR 153/Nursery Avenue. This minor approach v/c ratio is well within the mobility target of 0.95. The

major street approaches on northbound and southbound OR 99W/Trade Street operate at v/c ratios of 0.12 or better, which indicates the intersection operates with adequate capacity.

Although the v/c ratios meet their targets, the average delay time on the eastbound approach to OR 99W/Trade Street at OR 153/Nursery Avenue is approximately 40 seconds per vehicle during the peak. Vehicles arriving at this intersection must stop and wait for a gap in traffic on OR99W/Trade Street before making their movement. This results in LOS E for the eastbound approach.

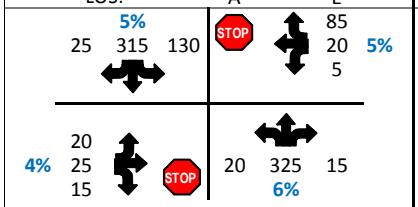
Each of the remaining study intersections meet their target v/c ratios, therefore the existing conditions results suggest that traffic is operating acceptably and the team did not identify existing operational needs or deficiencies. However, stakeholders noted that the intersection of Rice Lane and OR 99W/Trade Street is congested during weekday mornings between approximately 7:30 and 8:00 AM due to school bus traffic turning left onto OR 99W/Trade Street.

Table 7 shows the results of the existing conditions intersection operational analysis. Figure 8 provides the 30th highest hour volumes, channelization, and analysis results for each location. Attachment 2 provides information on existing volume development, and Attachment 3 includes the individual intersection Synchro HCM reports.



1 OR 99W (Trade Street) at OR 153/Nursery Avenue

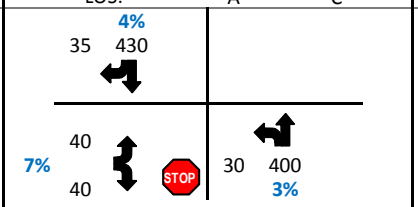
	Major St	Minor St
V/C Standard:	0.90	0.95
V/C Ratio:	0.12	0.47
Delay (sec):	8.6	40.6
LOS:	A	E



Count Date: 9/12/2013-9/13/2013
Count Type: 16-hr turning movement

2 OR 99W (Trade Street) at OR 153/5th

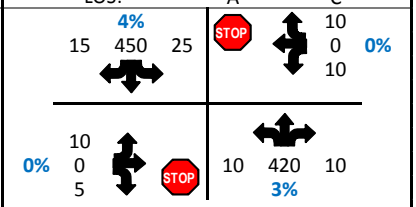
	Major St	Minor St
V/C Standard:	0.90	0.95
V/C Ratio:	0.04	0.29
Delay (sec):	8.6	21.1
LOS:	A	C



Count Date: 9/9/2013
Count Type: 16-hr turning movement

3 OR 99W (Trade Street) at 1st Street

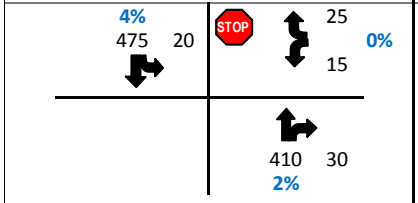
	Major St	Minor St
V/C Standard:	0.90	0.95
V/C Ratio:	0.01	0.11
Delay (sec):	8.7	20.3
LOS:	A	C



Count Date: 9/9/2013-9/10/2013
Count Type: 16-hr turning movement

4 OR 99W (Trade Street) at Rice Lane

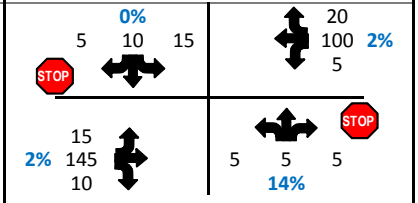
	Major St	Minor St
V/C Standard:	0.90	0.95
V/C Ratio:	0.02	0.12
Delay (sec):	8.6	16.7
LOS:	A	C



Count Date: 9/9/2013-9/10/2013
Count Type: 16-hr turning movement

5 Oak Avenue at OR 153/Nursery Avenue

	Major St	Minor St
V/C Standard:	0.95	0.95
V/C Ratio:	0.01	0.11
Delay (sec):	7.5	12.1
LOS:	A	B



Count Date: 9/10/2013
Count Type: 4-hr turning movement

NOTES:

1. Major street is uncontrolled. Minor street is stop-controlled.

2. "V/C Standard" corresponds to the intersection's mobility standard, as documented in Table 6 of the Oregon Highway Plan (adopted December, 2011).

3. LOS is the level of service reported for stop-controlled intersections.

Figure 8 Existing Intersection Operations

Table 7
Existing Conditions Intersection Operational Analysis

ID #	Intersection	Mobility Target v/c		Existing (2013) Results					
				v/c		Delay (seconds)		LOS	
		Major	Minor	Major	Minor	Major	Minor	Major	Minor
1	OR 99W/Trade Street at OR 153/Nursery Avenue	0.90	0.95	0.12	0.47	8.6	40.6	A	E
2	OR 99W/Trade Street at OR 153/5th Street	0.90	0.95	0.04	0.29	8.6	21.1	A	C
3	OR 99W/Trade Street at 1st Street	0.90	0.95	0.01	0.11	8.7	20.3	A	C
4	OR 99W/Trade Street at Rice Lane	0.90	0.95	0.02	0.12	8.6	16.7	A	C
5	Oak Avenue at OR 153/Nursery Avenue	0.95	0.95	0.01	0.11	7.5	12.1	A	B

Queue Analysis

Results from the queuing analysis indicate that none of the five study intersections have queue lengths that exceed available storage. The worst existing queue is on the west leg of the intersection of OR 99W/Trade Street and OR 153/Nursery Avenue, which also has the worst v/c ratio and delay. The 95th percentile queue on the eastbound approach of the intersection is 75 ft, or approximately 3 vehicles. While this queue is the worst of all those reported, it is still accommodated within the available storage and does not affect adjacent intersections.

Roadway Operations

The project team qualitatively assessed roadway operations for Jellison Avenue and Rice Lane. Jellison Avenue carries approximately 325 vehicles in both directions during the facility peak hour, which occurs at roughly 7:30 a.m. on weekdays. Rice Lane carries approximately 255 vehicles in both directions during this time between Jellison Avenue and OR 99W/Trade Street. The peak hour occurs in the morning, and does not coincide with the system peak for intersections. The project team used these morning volumes to show worst case operating conditions.

Many of the vehicles on these roadways are likely going to or returning from Amity Elementary School, which is located at the north end of Jellison Avenue. Vehicles may experience delays as they turn into or out of the school parking lot on the north side of Rice Lane, but there are no operational deficiencies. Vehicles on Jellison Avenue are also accessing Amity High School located at the south end of the road. Vehicles traveling on Jellison Avenue likely experience short delays at the stop-controlled intersection with Rosedell Street, but no operational deficiencies occur.

Peak hour volumes on OR 153/Nursery Avenue near Goucher Avenue are in the range of 265 vehicles in both direction. Vehicle travel peaks at around 7:30 a.m. on a weekday, which aligns with a typical morning commute and coincides with peak travel on Jellison Avenue and Rice Lane. OR 153/Nursery Avenue has an existing v/c ratio of 0.08, and is well within its operational mobility target. No operational deficiencies are identified in the existing condition.

Safety Conditions

The project team analyzed crash data from the ODOT Crash Analysis and Reporting Unit for the most recent five year period (January 1, 2007 through December 31, 2011). The safety assessment reveals that there are no apparent safety deficiencies at the five study intersections and three roadway segments analyzed in this plan. Detailed crash statistics are included in Attachment 4. This section describes crashes that occurred both in terms of the type of crash and the severity.

Figure 9 shows crash data locations below. From 2007 to 2011, ODOT recorded a total of eight reported collisions at the study intersections and one crash along OR 153/Nursery Avenue between OR 99W/Trade Street and the east city limit. There were eight injury collisions (one involving a pedestrian) and one collision resulting in property damage only. There were no reported fatalities city-wide, and no recorded crashes at the intersection of OR 99W/Trade Street and Rice Lane, and no recorded crashes on Jellison Avenue or Rice Lane.

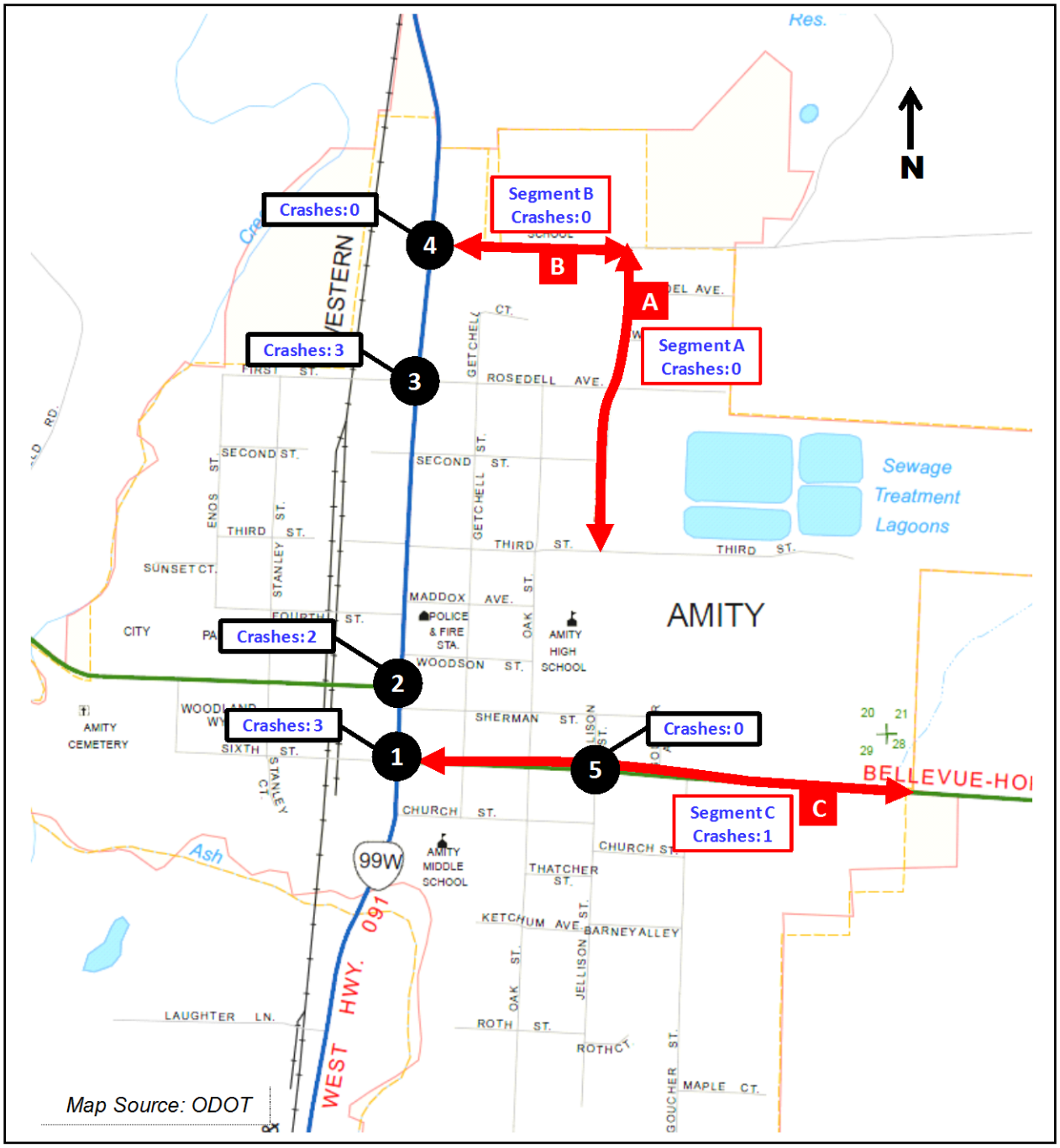


Figure 9 Amity TSP Crash Study Area

There were three reported crashes at the intersection of OR 99W/Trade Street and OR 153/Nursery Avenue. Each crash involved an injury and occurred during clear weather under dry roadway conditions during the day. Two incidents were rear end collisions that occurred in the northbound travel lane, while the other involved an angled collision between a northbound vehicle and a westbound vehicle turning right onto OR 99W/Trade Street. The crash report indicates that the turning vehicle stopped at the stop sign before proceeding into traffic. The

driver at fault was 96-years-old at the time of the crash, which would classify them as an "Older Driver."

At the intersection of OR 99W/Trade Street and OR 153/5th Street, there were two reported injury-level rear end collisions. Both incidents occurred under clear, dry conditions and involved vehicles travelling southbound.

At the intersection of OR 99W/Trade Street and 1st Street, there were three reported unique crashes in the study period. A rear-end collision involving property damage only was recorded in 2011 during foggy conditions. Two vehicles were traveling in the westbound direction through the intersection when one vehicle stopped at OR 99W/Trade Street and was rear-ended by the other. In 2007 at the same intersection, two injury-level incidents were recorded. One occurred in the morning in foggy conditions and involved a pedestrian crossing 1st Street northbound. The other occurred in rainy conditions and involved a rear end collision on northbound OR 99W/Trade Street as a vehicle decelerated to make a turn.

A single injury-level incident was recorded on OR 153/Nursery Avenue during the study period. It occurred near Goucher Avenue under clear, dry conditions and involved one vehicle sideswiping another as they were traveling in opposite directions. Table 8 shows the crash severity by collision type for all incidents occurring at study intersections or roadway segments, and Table 9 shows the severity by year.

Table 8
Crash Severity by Type, 2007-2011

Location & Collision Type	Fatal	Injury	Property Damage Only	Total
OR 99W/Trade Street at OR 153/Nursery Avenue				
Rear-End	-	2	-	2
Turning Movement	-	1	-	1
OR 99W/Trade Street at OR 153/5th Street				
Rear-End	-	2	-	2
OR 99W/Trade Street at 1st Street				
Rear-End	-	1	1	2
Pedestrian	-	1	-	1
OR 153/Nursery Avenue near Goucher Avenue				
Sideswipe	-	1	-	1
Total	**0**	**8**	**1**	**9**

The most common type of recorded crashes at the study locations were rear end collisions resulting in injuries. The distribution of crashes by year shows some fluctuation, but on average,

approximately 2 crashes occur per year. This variation does not indicate any statistically significant changes in safety over the study period.

Table 9
Crash Severity by Year, 2007-2011

Collision Type	Fatal	Injury	Property Damage Only	Total
2007	-	2	1	3
2008	-	1	-	1
2009	-	-	-	0
2010	-	3	-	2
2011	-	2	-	2
Total	**0**	**8**	**1**	**9**

Intersection crash rates are presented in Table 10. These rates are calculated as the number of crashes in the five-year study period per million entering vehicles (mev). The project team compared existing crash rates to the published 90th percentile intersection crash rates for rural 3- or 4-leg stop-controlled intersections as shown in Section 4.2.1 of ODOT's *Analysis Procedures Manual (Version 2).* No existing crash rates are greater than the published 90th percentile rates, which suggest there are no apparent safety deficiencies in the existing condition.

Table 10
Existing Intersection Crash Rates, 2007-2011

ID #	Intersection	AADT	Number of Crashes	Existing Crash Rate	90th Percentile Crash Rate[1]
1	OR 99W/Trade Street at OR 153/Nursery Avenue	9555	3	**0.17**	1.080
2	OR 99W/Trade Street at OR 153/5th Street	9320	2	**0.12**	0.475
3	OR 99W/Trade Street at 1st Street	9220	3	**0.18**	1.080
4	OR 99W/Trade Street at Rice Lane	9315	0	**0.00**	0.475
5	Oak Avenue at OR 153/Nursery Avenue	3250	0	**0.00**	1.080

[1]Source: ODOT Transportation Planning and Analysis Unit, Analysis Procedures Manual, version 2.

2012 ODOT Safety Priority Index System (SPIS)

Each year ODOT prepares an update to the Safety Priority Index System (SPIS), completed in compliance with the Federal Highway Safety Improvement Program (HSIP) required by the Federal Highway Administration (FHWA). The ODOT SPIS is calculated using a crash frequency

indicator (25 percent of the SPIS score), crash rate indicator (25 percent of the SPIS score), and crash severity indicator (50 percent of the SPIS score).

As part of this plan, the project team reviewed the 2012 ODOT top 10 percent SPIS for Region 2. No SPIS locations are on OR 99W/Trade Street or OR 153/Nursery Avenue/5th Street within the study area. The 2012 SPIS is included in Attachment 4.

Freight Operations

OR 99W/Trade Street through the City is a state designated freight route and a federally designated truck route. OR 153 is not designated as a freight route nor truck route within Amity city limits. Figure 10 shows the percentage of total vehicles that are trucks and the number of trucks traveling along these roads in the truck peak hour.

The truck peak hour is when the volume of trucks on the roadways is highest during the day. Based on count data, the truck peak hour occurs at approximately 3:00 p.m. to 4:00 p.m., which is earlier than the vehicular peak hour. Trucks often travel outside the vehicular peak hour to avoid delays associated with typical commuter traffic and related congestion. During the vehicular peak, truck volumes and percentages are lower than shown in Figure 10.

The majority of freight vehicles observed in the City remain on the state highways and travel through without turning onto local streets The few freight vehicles that access the local streets likely serve the existing industrial land use along the rail line west of and parallel to OR 99W/Trade Street. Operational effects of truck traffic accessing this area could include conflicts with pedestrians and vehicles, as well as short delays for those following freight trucks as they slow down to make turns from or to OR 99W/Trade Street. Agricultural freight, in addition to other freight vehicles, on OR 153 affect queuing at the intersections of OR 153 and OR 99/Trade Street. Operational delays due to freight traffic queuing may also increase conflicts with pedestrians and cyclists on OR 153.

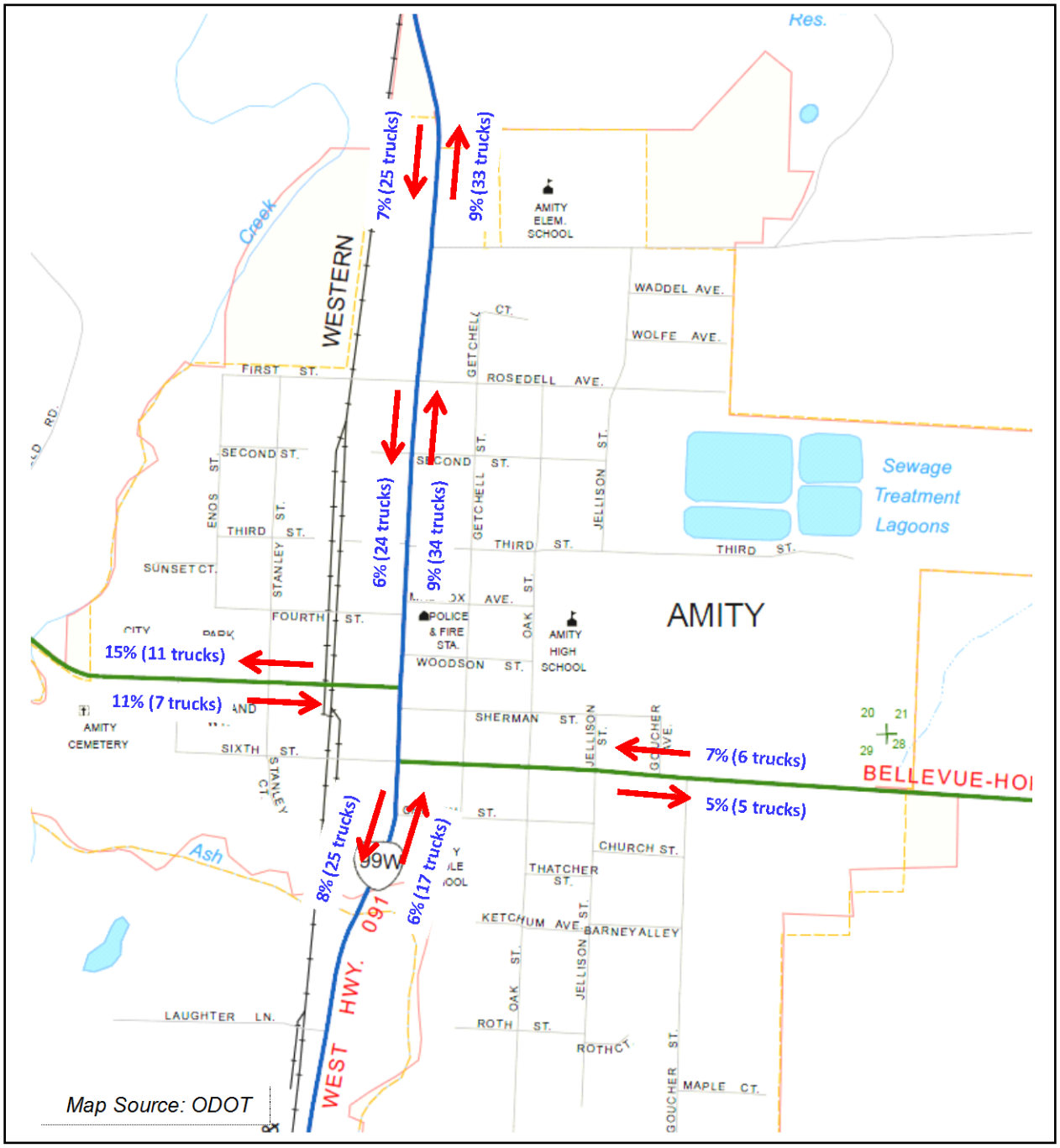


Figure 10 Truck Percentages and Volumes

Future (2038) No-Build Traffic Conditions

This section presents the results and findings for the future 2038 No Build condition. With estimated growth in background traffic on the state highways, and the trips associated with the approved urban growth boundary expansion and anticipated population increase, delay times at the minor street approaches to OR 99W/Trade Street are expected to increase. Traffic operations and queue results are expected to worsen slightly compared to the existing condition.

Future Forecasting

Background traffic growth is based on historical trends as well as the most recent ODOT Future Volume Table. Based on the expected level of volume on the state highways, the project team developed an annual growth rate of 1.40 percent for OR 99W/Trade Street, and used a growth rate of 1.14 percent per year to grow traffic on OR 153. The project team applied these growth rates to the balanced, existing analysis volumes to achieve future background volumes. Attachment 5 includes trips associated with background growth.

Urban Growth Boundary Expansion

In addition to background growth in trips through the City, future expansion of the urban growth boundary will occur by 2038 (Figure 11). In these expansion areas, a variety of low, medium, and high density residential land uses will be in place. Table 11 shows trips generated by these residential developments during the analysis peak hour. Since the exact distribution of trips is unknown, the project team added vehicles to the street network in patterns consistent with background traffic. Attachment 5 includes the distribution of trips associated with the urban growth boundary expansion.

Table 11
Urban Growth Boundary Expansion Trip Generation

Expansion Area	Dwelling Type	Number of Units	Trips per Unit[1]	Trips Generated		
				Total	In	Out
A	Single Family Detached	65	1.01	**66**	42	24
B	Single Family Detached	17	1.01	**17**	11	6
	Low-Rise Residential Townhome	18	0.78	**14**	9	5
C	Low-Rise Apartment	173	0.58	**100**	63	37
D	Low-Rise Apartment	23	0.58	**13**	8	5
D1	Single Family Detached	11	1.01	**11**	7	4
E	Low-Rise Apartment	19	0.58	**11**	7	4

[1]Source: Trip Generation Manual, 8th Edition, Institute of Transportation Engineers.

Traffic Operations

Results from the intersection operations analysis indicate that each of the five study intersections is likely to meet jurisdictional mobility standards for the 2038 future scenario.

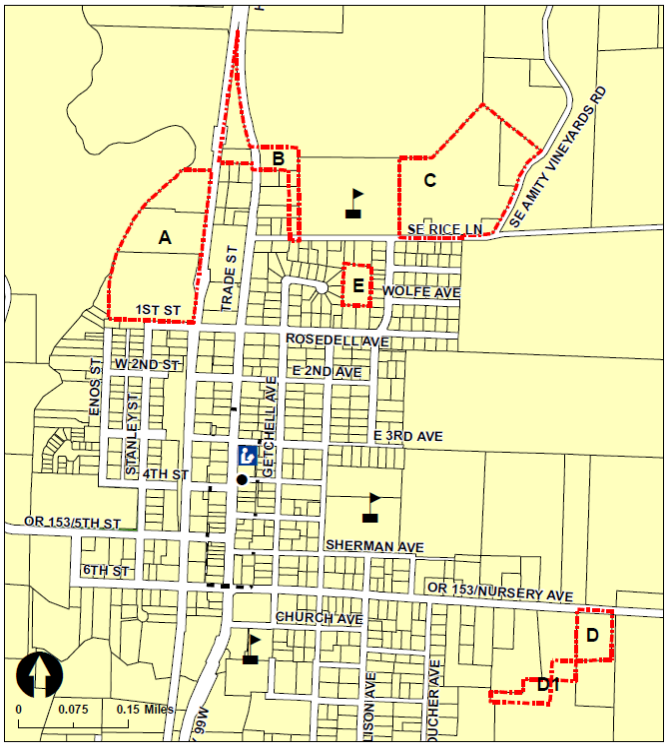


Figure 11 UGB Expansion Areas

While the v/c ratios are expected to increase on both the major and minor approaches at each intersection, there is adequate capacity. Table 12 shows the results of the future 2038 No Build condition analysis, as well as the mobility standards and the existing (2013) traffic intersections operational results for comparison. Figure 12 shows the future turning movement volumes and analysis results for each intersection location. Attachment 6 includes the individual intersection Synchro HCM reports.

Although the v/c mobility standards will be met in 2038, the average vehicle delays on the eastbound approach to OR 99W/Trade Street at OR 153/Nursery Avenue will more than double from 40 seconds to over 100 seconds per vehicle. Similarly, the eastbound approach to OR 99W/Trade Street at OR 153/5th Street will also experience an increase in average vehicle delay that is double the existing wait time. Due to traffic increases on OR 99W/Trade Street, vehicles on the stop-controlled cross street are likely to experience longer delays, compared to current conditions, as they wait for a gap in continuous flow traffic on northbound and southbound OR 99W/Trade Street. The result is a potential buildup of vehicles on the side streets, as demonstrated in the queue analysis results. In terms of driver comfort, operational needs at these two intersections could include additional capacity in the form of turn lanes or modified intersection control.

Peak hour traffic volumes on Jellison Avenue and Rice Lane would increase in the future due to the expansion of the urban growth boundary. Trips originating in the northern expansion areas of the city would likely travel on both streets to access the state highways, the elementary and high schools, or other areas of Amity. Because current daily traffic volumes are very low with v/c; ratios of less than 0.10, the expected increase in traffic will likely be accommodated with the existing infrastructure. No future operational deficiencies are expected on Jellison Avenue or Rice Lane.

With future growth and additional vehicles traveling on OR153/Nursery Avenue near Goucher Avenue, peak hour volumes could increase from 265 vehicles to nearly 390 in both directions in 2038. The typical peak hour would likely remain in the morning commute, and may result in

slightly longer delays for vehicles trying to turn onto or off of the highway. Traffic operations on OR 153/Nursery Avenue would be acceptable with an expected v/c ratio of 0.12, which is within the mobility standard for this roadway function.

Table 12
Existing Conditions and Future No-Build Intersection Operational Analysis

Intersection		Mobility Target v/c Major/Minor	Existing (2013) v/c		Existing (2013) Delay (sec)		Existing (2013) LOS		No Build (2038) v/c		No Build (2038) Delay (sec)		No Build (2038) LOS	
			Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
1	OR 99W/Trade Street at OR 153/Nursery Avenue	0.90 / 0.95	0.12	0.47	8.6	40.6	A	E	0.18	0.85	9.4	>100	A	F
2	OR 99W/Trade Street at OR 153/5th Street	0.90 / 0.95	0.04	0.29	8.6	21.1	A	C	0.05	0.59	9.3	45.5	A	E
3	OR 99W/Trade Street at 1st Street	0.90 / 0.95	0.01	0.11	8.7	20.3	A	C	0.03	0.24	9.3	32.8	A	D
4	OR 99W/Trade Street at Rice Lane	0.90 / 0.95	0.02	0.12	8.6	16.7	A	C	0.08	0.40	9.5	29.9	A	D
5	Oak Avenue at OR 153/Nursery Avenue	0.95 / 0.95	0.01	0.11	7.5	12.1	A	B	0.01	0.12	7.7	13.3	A	B

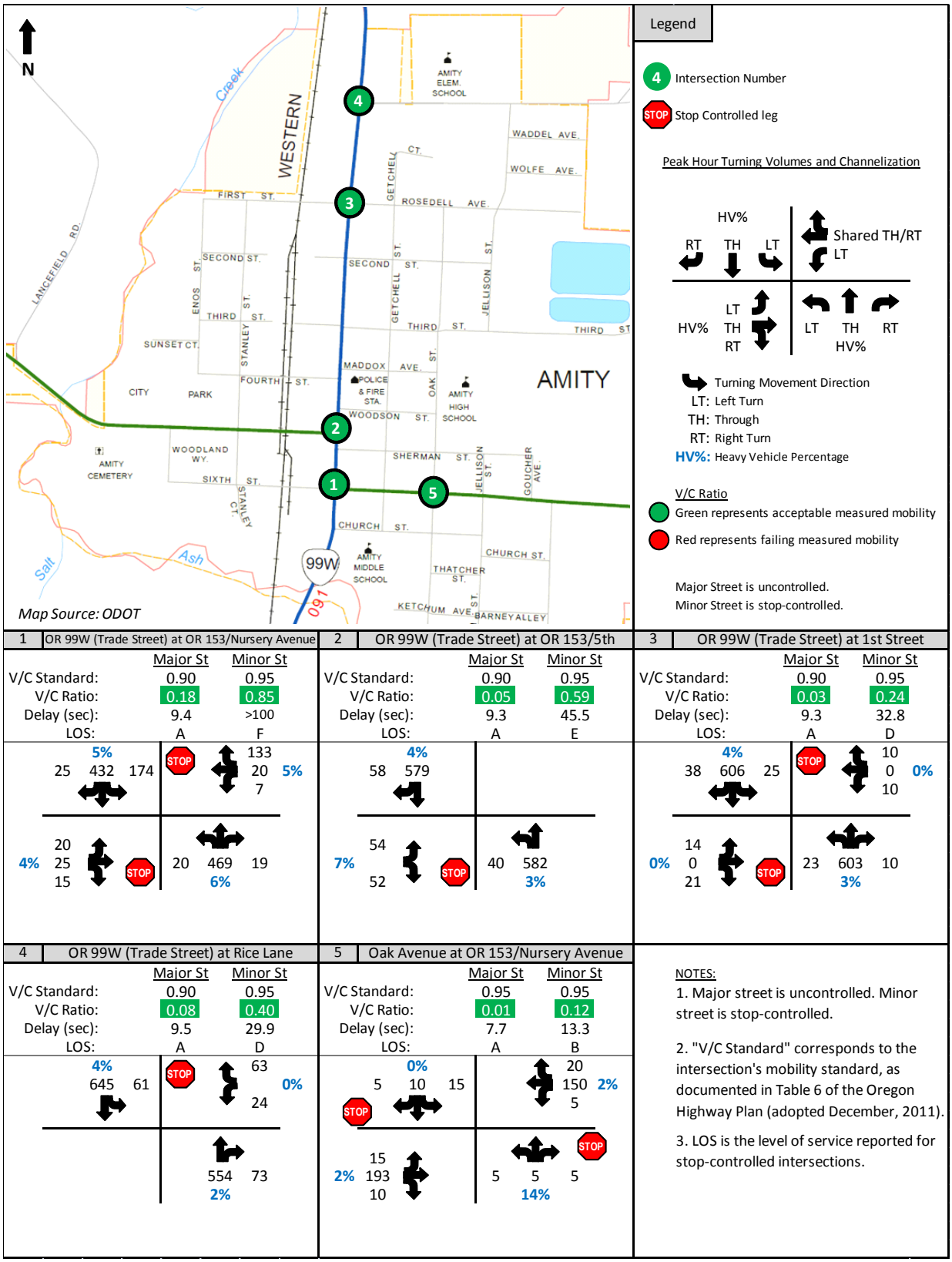


Figure 12 Future No Build Intersection Operations

Queue Analysis

Queue lengths are expected to worsen slightly as a result of increased traffic, but are not expected to affect operations at intersections. By 2038, the eastbound approach to OR 99W/Trade Street at OR 153/Nursery Avenue is expected to have the worst queuing of all the study intersections. The 95th percentile eastbound queue would be up to five vehicles, but is not likely to affect upstream driveways. The westbound queue on OR 153/Nursery Avenue could be up to four vehicles. On both of these approaches, vehicles wanting to make a turn onto OR 99W/Trade Street may not be able to find sufficient gaps in the traffic to safely make their movement. This results in delays at the stop sign and causes vehicles to backup behind them.

The results indicate that queues on the eastbound OR 153/5th Street approach to OR 99W/Trade Street would be longer in the future. Vehicles wanting to turn left or right must wait for a sufficient gap in traffic on OR 99W/Trade Street. A railroad crossing is located on OR 153/5th Street approximately 250 feet from the intersection. While the expected 95th percentile queue is four vehicles, and is not likely to affect the rail line, this is a location that may become an issue in the future.

While queuing from Rice Lane onto OR 99W/Trade Street shows one vehicle in the peak hour, stakeholders within the City have indicated that there are times currently where there are a number of vehicles queued up and waiting to turn at that location. The project team will solicit additional feedback on all existing transportation conditions to ensure that the community's day-to-day experiences are addressed, even when the traffic analysis and model do not indicate an issue. The TAC and general public will be asked to add more information on observed traffic queuing and congestion areas not captured in the technical analyses.

Table 13 shows the projected queue lengths in 2038 as compared to the 2013 existing condition, along with the estimated storage length. On the stop-controlled approaches, the storage length is measured from the stop sign to the next upstream intersection.

Safety Conditions

Future crash rates cannot be calculated at the study intersections or roadway segments. The future number of crashes, types of crashes, or severity of incidents cannot be directly forecast in relation to traffic volume increases. As a qualitative assessment, no significant changes to traffic patterns or infrastructure are expected by 2038; therefore no significant changes to the calculated crash rates are expected.

Freight Operations

Freight traffic patterns are likely to remain similar to existing conditions. The majority of trucks would travel on the state highways through the City, while a few would be destined to or originate in the light industrial land use along the railroad line.

By 2038, the number of trucks traveling on OR 99W/Trade Street and OR 153/Nursery Avenue would likely increase as a result of background growth. This growth is not expected to affect

traffic operations during the peak hour because adequate capacity is available on the state highways, and ample queue storage is available on the stop-controlled cross streets as shown in the results above. Trucks would also be likely to travel outside the vehicular peak hour to avoid typical commuter traffic.

Table 13
Amity TSP: Future No-Build Queuing Analysis Results

Intersection		Approach	Lane Group	Storage (feet)[1]	95th % Queue (feet)[2] Existing (2013)	95th % Queue (feet)[2] No Build (2038)
1	OR 99W/Trade Street at OR 153/Nursery Avenue	Eastbound	Left/Through/Right	250	75	125
		Westbound	Left/Through/Right	265	50	100
		Northbound	Left/Through/Right	-	25	25
		Southbound	Left/Through/Right	-	25	25
2	OR 99W/Trade St at 5th Street	Eastbound	Left/Right	275	25	100
		Northbound	Left/Through	-	25	25
		Southbound	Through/Right	-	0	0
3	OR 99W/Trade St at 1st Street	Eastbound	Left/Through/Right	290	25	25
		Westbound	Left/Through/Right	250	25	25
		Northbound	Left/Through/Right	-	25	25
		Southbound	Left/Through/Right	-	25	25
4	OR 99W/Trade St at Rice Lane	Westbound	Left/Right	950	25	50
		Northbound	Through/Right	-	0	0
		Southbound	Left/Through	-	25	25
5	Oak Ave at OR 153/Nursery Ave	Eastbound	Left/Through/Right	-	25	25
		Westbound	Left/Through/Right	-	25	25
		Northbound	Left/Through/Right	230	25	25
		Southbound	Left/Through/Right	235	25	25

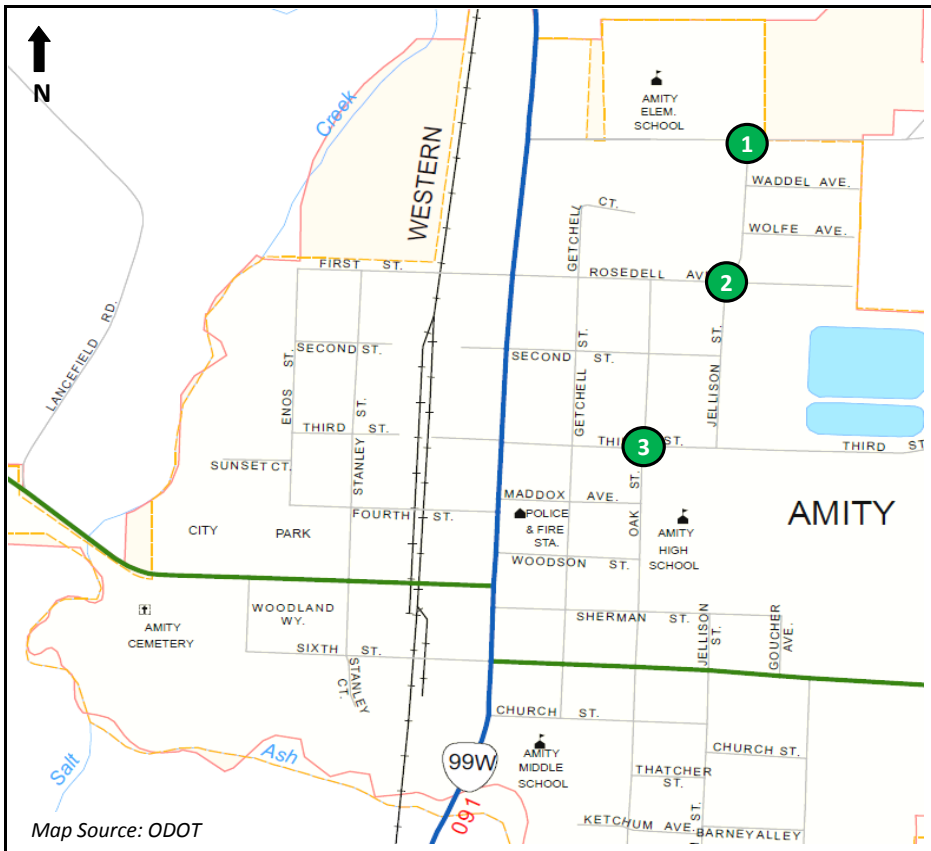
[1]Storage length is measured to the next upstream intersection.
[2]Assume 25 feet per vehicle. Queue lengths are rounded up to the nearest whole vehicle.

Next Steps

The Technical Advisory Committee reviewed these existing conditions, and future "no build" traffic conditions, at their first meeting, and the public verified the findings at the first Open House for the TSP in January 2014.

The analysis in this memorandum will inform development of project alternatives for addressing deficiencies for all modes. The project team will develop alternatives with evaluation criteria and the goals and objectives of the TSP in mind.

Attachment 1



Map Source: ODOT

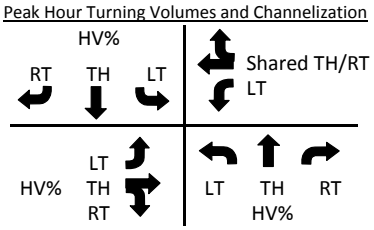
Legend

1 Intersection Number

STOP Stop Controlled leg

Pedestrian trips

Peak Hour Turning Volumes and Channelization



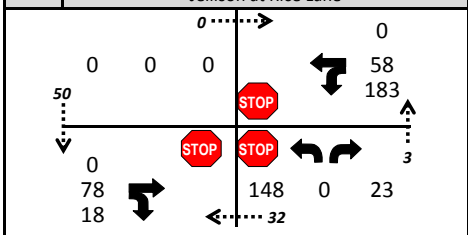
Turning Movement Direction

LT: Left Turn

TH: Through

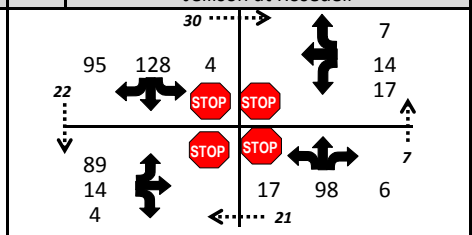
RT: Right Turn

1 Jellison at Rice Lane



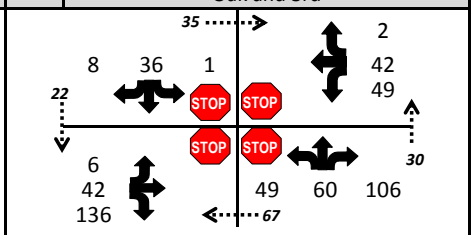
Count Date: 11/21/2013
Count Type: 7:00 - 16:00

2 Jellison at Rosedell



Count Date: 11/21/2013
Count Type: 7:00 - 16:00

3 Oak and 3rd



Count Date: 11/20/2013
Count Type: 7:30 - 16:00

CH2MHILL

Amity TSP

City traffic counts at select intersections

Attachment 2

System Wide Peak Determination

	1.OR99W(Trade Street)_6thSt	2.OR99W(Trade Street)_5thAve	3.OR99W(Trade Street)_1stSt	4.OR99W(Trade Street)_RiceLn	5.OakSt_NurseryAve	Total	
14:00	0	0	0	0	0	0	
14:15	0	0	0	0	0	0	
14:30	0	0	0	0	0	0	
14:45	689	612	621	643	208	2773	
15:00	691	629	639	675	207	2841	
15:15	751	659	682	719	229	3040	
15:30	778	710	740	795	246	3269	
15:45	809	757	769	814	241	3390	
16:00	823	786	793	822	267	3491	
16:15	848	795	783	805	266	3497	
16:30	877	763	753	767	258	3418	
16:45	872	781	780	796	272	3501	
17:00	923	824	842	858	271	3718	
17:15	943	874	877	905	269	3868	
17:30	938	897	898	916	268	3917	
17:45	924	877	890	910	264	3865	
						3917	Max
					Peak Hour:	4:45 - 5:45 pm	

2013 Existing PM - Raw System Peak Volumes

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	16	308	13	120	313	22	16	20	11	4	16	79
OR 99W (Trade Street) at OR 153/5th Street	27	382	0	0	388	28	34	0	38	0	0	0
OR 99W (Trade Street) at 1st Street	7	396	9	20	426	12	7	0	4	8	0	9
OR 99W (Trade Street) at Rice Lane	0	388	24	17	450	0	0	0	0	14	0	23
Oak Avenue at OR 153/Nursery Avenue	3	3	1	10	6	4	10	129	5	1	78	18

2013 Existing PM - Seasonally Adjusted Peak Volumes **Seasonal Adjustment Factor: 1.05**

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	17	323	14	126	329	23	17	21	12	4	17	83
OR 99W (Trade Street) at OR 153/5th Street	28	401	0	0	407	29	36	0	40	0	0	0
OR 99W (Trade Street) at 1st Street	7	416	9	21	447	13	7	0	4	8	0	9
OR 99W (Trade Street) at Rice Lane	0	407	25	18	473	0	0	0	0	15	0	24
Oak Avenue at OR 153/Nursery Avenue	3	3	1	11	6	4	11	135	5	1	82	19

2013 Existing 30th HHV - Rounded to 5

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	20	325	15	130	315	25	20	25	15	5	20	85
OR 99W (Trade Street) at OR 153/5th Street	30	400	0	0	430	35	40	0	40	0	0	0
OR 99W (Trade Street) at 1st Street	10	420	10	25	450	15	10	0	5	10	0	10
OR 99W (Trade Street) at Rice Lane	0	410	30	20	475	0	0	0	0	15	0	25
Oak Avenue at OR 153/Nursery Avenue	5	5	5	15	10	5	15	145	10	5	100	20

Summary of Traffic Count
Transportation Development Division

Site: 53002
County: Yamhill
City: Amity

Date: 9/12/2013-9/13/2013
Hours: PM
Highway #: 091

Milepoint: 44.75
Count Number: 1.00

Location: OR99W (Trade Street) @ 6th Street
Weather: Cloudy

	Summary By Movements														Entering Volumes			
Time of Day	N-E	N-S	N-W	E-N	E-S	E-W	S-N	S-E	S-W	W-N	W-E	W-S		TOTAL	North	East	South	West
0:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:00	24	173	4	51	7	4	158	5	2	1	3	2		434	201	62	165	6
6:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:00	32	239	10	75	15	1	216	5	7	10	4	3		617	281	91	228	17
7:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:00	44	155	10	53	10	4	223	7	3	7	9	3		528	209	67	233	19
8:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:00	51	135	11	58	7	1	163	4	4	7	3	3		447	197	66	171	13
9:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
10:00	61	179	14	57	6	9	182	5	7	5	8	6		539	254	72	194	19
10:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:00	58	203	13	57	10	6	166	7	5	8	5	9		547	274	73	178	22
11:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:00	59	207	21	61	5	11	200	9	8	19	12	5		617	287	77	217	36
12:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:00	58	207	28	60	9	7	198	8	6	15	11	9		616	293	76	212	35
13:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
14:00	23	49	6	21	5	3	63	4	3	2	2	2		183	78	29	70	6
14:15	13	54	7	16	0	2	40	1	1	8	3	0		145	74	18	42	11
14:30	15	64	6	12	1	2	66	4	0	2	2	1		175	85	15	70	5
14:45	20	50	5	17	2	3	70	2	4	5	5	3		186	75	22	76	13
15:00	27	61	5	17	0	3	56	1	1	7	4	3		185	93	20	58	14
15:15	36	69	4	19	7	1	57	1	2	2	2	5		205	109	27	60	9
15:30	18	70	6	24	5	3	66	3	1	1	4	1		202	94	32	70	6
15:45	21	78	7	20	0	0	73	3	1	8	3	3		217	106	20	77	14
16:00	24	76	5	13	5	0	68	4	2	2	0	0		199	105	18	74	2
16:15	26	88	7	18	2	2	74	3	2	2	2	4		230	121	22	79	8
16:30	27	76	4	19	3	2	86	1	0	2	7	4		231	107	24	87	13

Summary of Traffic Count
Transportation Development Division

Site: 53002
County: Yamhill
City: Amity

Milepoint: 44.75
Count Number: 1.00

Date: 9/12/2013-9/13/2013
Hours: PM
Highway #: 091

Location: OR99W (Trade Street) @ 6th Street
Weather: Cloudy

	Summary By Movements														Entering Volumes			
Time of Day	N-E	N-S	N-W	E-N	E-S	E-W	S-N	S-E	S-W	W-N	W-E	W-S		TOTAL	North	East	South	West
16:45	26	71	4	21	0	2	66	2	7	3	9	1		212	101	23	75	13
17:00	27	82	10	25	1	4	87	6	0	4	2	2		250	119	30	93	8
17:15	42	72	5	17	2	4	83	2	6	5	7	5		250	119	23	91	17
17:30	25	88	3	16	1	6	72	3	3	4	2	3		226	116	23	78	9
17:45	26	60	4	25	3	0	68	6	1	4	1	0		198	90	28	75	5
18:00	94	191	24	65	8	10	206	9	6	13	16	4		646	309	83	221	33
18:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:00	65	150	17	55	6	8	138	4	5	14	8	9		479	232	69	147	31
19:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:00	43	110	24	31	7	9	89	2	5	12	11	6		349	177	47	96	29
20:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:00	33	77	7	18	1	6	62	4	5	6	4	2		225	117	25	71	12
21:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Total Count	1018	3134	271	941	128	113	3096	115	97	178	149	98		9338	4423	1182	3308	425
24hr Factor	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1
24hr Volume	1018	3134	271	941	128	113	3096	115	97	178	149	98		9338	4423	1182	3308	425

Summary of Traffic Count
Transportation Development Division

Site:	53001	Date:	9/9/2013
County:	Yamhill	Hours:	6:00 AM-10:00 PM
City:	Amity	Highway #:	091
Milepoint:	44.68	Location:	OR99W (Trade Street) @ 5th Street
Count Number:	1.00	Weather:	Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-S	N-W	S-N	S-W	W-N	W-S		TOTAL	North	South	West
6:00	224	8	208	15	26	15		496	232	223	41
6:15	0	0	0	0	0	0		0	0	0	0
6:30	0	0	0	0	0	0		0	0	0	0
6:45	0	0	0	0	0	0		0	0	0	0
7:00	367	29	392	41	36	25		890	396	433	61
7:15	0	0	0	0	0	0		0	0	0	0
7:30	0	0	0	0	0	0		0	0	0	0
7:45	0	0	0	0	0	0		0	0	0	0
8:00	262	22	254	17	18	9		582	284	271	27
8:15	0	0	0	0	0	0		0	0	0	0
8:30	0	0	0	0	0	0		0	0	0	0
8:45	0	0	0	0	0	0		0	0	0	0
9:00	203	21	220	32	27	19		522	224	252	46
9:15	0	0	0	0	0	0		0	0	0	0
9:30	0	0	0	0	0	0		0	0	0	0
9:45	0	0	0	0	0	0		0	0	0	0
10:00	188	28	197	14	21	12		460	216	211	33
10:15	0	0	0	0	0	0		0	0	0	0
10:30	0	0	0	0	0	0		0	0	0	0
10:45	0	0	0	0	0	0		0	0	0	0
11:00	221	16	209	23	12	18		499	237	232	30
11:15	0	0	0	0	0	0		0	0	0	0
11:30	0	0	0	0	0	0		0	0	0	0
11:45	0	0	0	0	0	0		0	0	0	0
12:00	231	19	197	22	30	19		518	250	219	49
12:15	0	0	1	0	0	0		1	0	1	0
12:30	0	0	0	0	0	0		0	0	0	0
12:45	0	0	0	0	0	0		0	0	0	0
13:00	232	17	210	30	16	25		530	249	240	41
13:15	0	0	0	0	0	0		0	0	0	0
13:30	0	0	0	0	0	0		0	0	0	0
13:45	0	0	0	0	0	0		0	0	0	0
14:00	57	4	61	5	4	6		137	61	66	10
14:15	72	3	70	8	10	9		172	75	78	19
14:30	67	10	60	7	4	9		157	77	67	13
14:45	69	3	55	3	10	6		146	72	58	16
15:00	67	11	55	5	4	12		154	78	60	16
15:15	87	9	82	11	3	10		202	96	93	13
15:30	84	9	91	6	8	10		208	93	97	18
15:45	67	13	89	7	10	7		193	80	96	17
16:00	86	9	67	3	9	9		183	95	70	18
16:15	90	5	89	9	7	11		211	95	98	18
16:30	82	12	69	4	5	4		176	94	73	9

Summary of Traffic Count
Transportation Development Division

Site:	53001	Date:	9/9/2013
County:	Yamhill	Hours:	6:00 AM-10:00 PM
City:	Amity	Highway #:	091
Milepoint:	44.68	Location:	OR99W (Trade Street) @ 5th Street
Count Number:	1.00	Weather:	Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-S	N-W	S-N	S-W	W-N	W-S		TOTAL	North	South	West
16:45	93	9	86	8	4	11		211	102	94	15
17:00	110	4	90	5	8	9		226	114	95	17
17:15	102	9	124	6	9	11		261	111	130	20
17:30	83	6	82	8	13	7		199	89	90	20
17:45	81	7	85	8	4	6		191	88	93	10
18:00	272	32	229	24	27	33		617	304	253	60
18:15	0	0	0	0	0	0		0	0	0	0
18:30	0	0	0	0	0	0		0	0	0	0
18:45	0	0	0	0	0	0		0	0	0	0
19:00	151	21	158	19	10	21		380	172	177	31
19:15	0	0	0	0	0	0		0	0	0	0
19:30	0	0	0	0	0	0		0	0	0	0
19:45	0	0	0	0	0	0		0	0	0	0
20:00	136	12	111	13	14	16		302	148	124	30
20:15	0	0	0	0	0	0		0	0	0	0
20:30	0	0	0	0	0	0		0	0	0	0
20:45	0	0	0	0	0	0		0	0	0	0
21:00	86	8	74	5	7	12		192	94	79	19
21:15	0	0	0	0	0	0		0	0	0	0
21:30	0	0	0	0	0	0		0	0	0	0
21:45	0	0	0	0	0	0		0	0	0	0
Total Count	3870	356	3715	358	356	361		9016	4226	4073	717
24hr Factor	1.1	1.1	1.1	1.1	1.1	1.1		1.1	1.1	1.1	1.1
24hr Volume	4257	392	4087	394	392	398		9918	4649	4481	789

Summary of Traffic Count
Transportation Development Division

Site: 53004
County: Yamhill
City: Amity
Milepoint: 44.39
Count Number: 5.00

Date: 9/9/2013-9/10/2013
Hours: AM
Highway #: 091
OR99W (Trade Street) @ 1st Street
Location: /Rosedell
Weather: Clear

	Summary By Movements														Entering Volumes			
Time of Day	N-E	N-S	N-W	E-N	E-S	E-W	S-N	S-E	S-W	W-N	W-E	W-S		TOTAL	North	East	South	West
0:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
5:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:00	3	206	1	6	3	0	214	1	2	4	0	1		441	210	9	217	5
9:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
9:45	0	0	1	0	0	0	0	0	0	0	0	0		1	1	0	0	0
10:00	7	203	4	7	3	0	194	2	1	7	2	1		431	214	10	197	10
10:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:00	3	243	8	9	3	0	239	3	6	5	0	4		523	254	12	248	9
11:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:00	8	279	5	7	9	0	246	4	0	2	0	0		560	292	16	250	2
12:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:00	6	249	8	4	3	1	238	2	2	3	3	1		520	263	8	242	7
13:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
14:00	4	63	1	4	3	1	64	0	0	2	0	0		142	68	8	64	2
14:15	5	78	1	1	0	0	75	2	0	3	1	1		167	84	1	77	5
14:30	2	73	3	6	2	0	69	1	1	1	0	1		159	78	8	71	2
14:45	1	78	3	0	0	0	64	2	0	3	1	1		153	82	0	66	5
15:00	3	81	4	4	0	1	61	2	0	2	1	1		160	88	5	63	4
15:15	5	97	4	1	10	1	86	1	0	3	1	1		210	106	12	87	5
15:30	4	86	3	4	0	0	115	1	2	2	0	0		217	93	4	118	2
15:45	2	75	1	4	2	2	91	1	1	2	0	1		182	78	8	93	3
16:00	3	87	2	1	2	0	82	0	1	3	0	3		184	92	3	83	6
16:15	7	91	2	2	0	0	95	3	0	0	0	0		200	100	2	98	0
16:30	1	93	4	5	3	0	79	1	0	1	0	0		187	98	8	80	1

Summary of Traffic Count
Transportation Development Division

Site: 53004
County: Yamhill
City: Amity
Milepoint: 44.39
Count Number: 5.00

Date: 9/9/2013-9/10/2013
Hours: AM
Highway #: 091
OR99W (Trade Street) @ 1st Street
Location: /Rosedell
Weather: Clear

	Summary By Movements														Entering Volumes			
Time of Day	N-E	N-S	N-W	E-N	E-S	E-W	S-N	S-E	S-W	W-N	W-E	W-S		TOTAL	North	East	South	West
16:45	3	104	2	3	3	0	88	1	3	1	0	1		209	109	6	92	2
17:00	5	125	7	0	1	0	99	4	2	2	0	1		246	137	1	105	3
17:15	7	104	1	4	2	0	112	3	0	2	0	0		235	112	6	115	2
17:30	5	93	2	2	2	0	97	1	2	2	0	2		208	100	4	100	4
17:45	7	100	4	0	2	0	84	0	3	1	0	0		201	111	2	87	1
18:00	22	289	9	8	8	2	260	6	5	10	1	8		628	320	18	271	19
18:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:00	11	172	4	11	5	0	153	11	3	4	1	0		375	187	16	167	5
19:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:00	11	153	7	5	5	0	121	4	3	8	0	3		320	171	10	128	11
20:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:00	6	87	8	0	4	0	80	4	0	2	0	1		192	101	4	84	3
21:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:15	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Total Count	141	3309	99	98	75	8	3106	60	37	75	11	32		7051	3549	181	3203	118
24hr Factor	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1
24hr Volume	141	3309	99	98	75	8	3106	60	37	75	11	32		7051	3549	181	3203	118

Summary of Traffic Count
Transportation Development Division

Site: 53007
County: Yamhill
City: Amity
Milepoint: 44.26
Count Number: 1.00

Date: 9/9/2013-9/10/2013
Hours: 9/10/2013 9:00 AM
Highway #: 091
WEST NO. 91 OR99W
Location: (Trade Street) @ Rice
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-E	N-S	E-N	E-S	S-N	S-E		TOTAL	North	East	South
0:00	1	19	3	0	14	0		37	20	3	14
0:15	0	0	0	0	0	0		0	0	0	0
0:30	0	0	0	0	0	0		0	0	0	0
0:45	0	0	0	0	0	0		0	0	0	0
1:00	3	15	1	0	8	0		27	18	1	8
1:15	0	0	0	0	0	0		0	0	0	0
1:30	0	0	0	0	0	0		0	0	0	0
1:45	0	0	0	0	0	0		0	0	0	0
2:00	0	11	1	1	10	0		23	11	2	10
2:15	0	0	0	0	0	0		0	0	0	0
2:30	0	0	0	0	0	0		0	0	0	0
2:45	0	0	0	0	0	0		0	0	0	0
3:00	1	21	0	1	28	0		51	22	1	28
3:15	0	0	0	0	0	0		0	0	0	0
3:30	0	0	0	0	0	0		0	0	0	0
3:45	0	0	0	0	0	0		0	0	0	0
4:00	0	36	1	0	56	0		93	36	1	56
4:15	0	0	0	0	0	0		0	0	0	0
4:30	0	0	0	0	0	0		0	0	0	0
4:45	0	0	0	0	0	0		0	0	0	0
5:00	0	115	8	3	179	2		307	115	11	181
5:15	0	0	0	0	0	0		0	0	0	0
5:30	0	0	0	0	0	0		0	0	0	0
5:45	0	0	0	0	0	0		0	0	0	0
6:00	8	230	11	3	251	9		512	238	14	260
6:15	0	0	0	0	0	0		0	0	0	0
6:30	0	0	0	0	0	0		0	0	0	0
6:45	0	0	0	0	0	0		0	0	0	0
7:00	51	382	50	37	440	62		1022	433	87	502
7:15	0	0	0	0	0	0		0	0	0	0
7:30	0	0	0	0	0	0		0	0	0	0
7:45	0	0	0	0	0	0		0	0	0	0
8:00	7	255	21	12	307	11		613	262	33	318
8:15	0	0	0	0	0	0		0	0	0	0
8:30	0	0	0	0	0	0		0	0	0	0
8:45	0	0	0	0	0	0		0	0	0	0
9:00	4	209	17	5	211	8		454	213	22	219
9:15	0	0	0	0	0	0		0	0	0	0
9:30	0	0	0	0	0	0		0	0	0	0
9:45	0	0	0	0	0	0		0	0	0	0
10:00	7	212	17	4	202	4		446	219	21	206
10:15	0	0	0	0	0	0		0	0	0	0
10:30	0	0	0	0	0	0		0	0	0	0
10:45	0	0	0	0	0	0		0	0	0	0
11:00	13	242	9	9	248	12		533	255	18	260
11:15	0	0	0	0	0	0		0	0	0	0
11:30	0	0	0	0	0	0		0	0	0	0
11:45	0	0	0	0	0	0		0	0	0	0
12:00	10	251	11	9	225	8		514	261	20	233
12:15	0	0	0	0	0	0		0	0	0	0
12:30	0	0	0	0	0	0		0	0	0	0
12:45	0	0	0	0	0	0		0	0	0	0
13:00	9	245	17	13	230	12		526	254	30	242
13:15	0	0	0	0	0	0		0	0	0	0
13:30	0	0	0	0	0	0		0	0	0	0
13:45	0	0	0	0	0	0		0	0	0	0

Summary of Traffic Count
Transportation Development Division

Site: 53007
County: Yamhill
City: Amity

Milepoint: 44.26
Count Number: 1.00

Date: 9/9/2013-9/10/2013
Hours: 9/10/2013 9:00 AM
Highway #: 091
WEST NO. 91 OR99W
Location: (Trade Street) @ Rice
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-E	N-S	E-N	E-S	S-N	S-E		TOTAL	North	East	South
14:00	5	67	1	3	69	2		147	72	4	71
14:15	5	79	1	1	62	16		164	84	2	78
14:30	3	65	7	13	65	7		160	68	20	72
14:45	21	77	3	2	51	18		172	98	5	69
15:00	14	77	12	11	56	9		179	91	23	65
15:15	5	86	10	19	83	5		208	91	29	88
15:30	3	94	11	4	115	9		236	97	15	124
15:45	9	80	3	4	90	5		191	89	7	95
16:00	6	93	2	0	85	1		187	99	2	86
16:15	1	85	5	4	93	3		191	86	9	96
16:30	4	98	5	5	77	9		198	102	10	86
16:45	4	118	5	3	85	5		220	122	8	90
17:00	6	130	7	3	100	3		249	136	10	103
17:15	4	110	7	2	106	9		238	114	9	115
17:30	3	92	4	6	97	7		209	95	10	104
17:45	6	120	3	2	82	1		214	126	5	83
18:00	17	311	17	9	260	17		631	328	26	277
18:15	0	0	0	0	0	0		0	0	0	0
18:30	0	0	0	0	0	0		0	0	0	0
18:45	0	0	0	0	0	0		0	0	0	0
19:00	8	174	13	16	154	11		376	182	29	165
19:15	0	0	0	0	0	0		0	0	0	0
19:30	0	0	0	0	0	0		0	0	0	0
19:45	0	0	0	0	0	0		0	0	0	0
20:00	8	157	5	10	132	7		319	165	15	139
20:15	0	0	0	0	0	0		0	0	0	0
20:30	0	0	0	0	0	0		0	0	0	0
20:45	0	0	0	0	0	0		0	0	0	0
21:00	4	99	3	3	79	3		191	103	6	82
21:15	0	0	0	0	0	0		0	0	0	0
21:30	0	0	0	0	0	0		0	0	0	0
21:45	0	0	0	0	0	0		0	0	0	0
22:00	1	58	4	1	45	4		113	59	5	49
22:15	0	0	0	0	0	0		0	0	0	0
22:30	0	0	0	0	0	0		0	0	0	0
22:45	0	0	0	0	0	0		0	0	0	0
23:00	3	29	0	0	23	1		56	32	0	24
23:15	0	0	0	0	0	0		0	0	0	0
23:30	0	0	0	0	0	0		0	0	0	0
23:45	0	0	0	0	0	0		0	0	0	0
Total Count	254	4542	295	218	4418	280		10007	4796	513	4698
24hr Factor	1	1	1	1	1	1		1	1	1	1
24hr Volume	254	4542	295	218	4418	280		10007	4796	513	4698

Summary of Traffic Count
Transportation Development Division

Site: 53008
County: Yamhill
City: Amity

Milepoint: 6.42
Count Number: 1.00

Date: 9/10/2013
Hours: 2:00 PM-6:00 PM
Highway #: 153

Location: Oak Street @ Nursery Avenue
Weather: Clear

	Summary By Movements														Entering Volumes			
Time of Day	N-E	N-S	N-W	E-N	E-S	E-W	S-N	S-E	S-W	W-N	W-E	W-S		TOTAL	North	East	South	West
14:00	3	2	0	1	0	14	1	0	1	2	17	1		42	5	15	2	20
14:15	1	1	1	1	1	19	0	0	2	3	18	1		48	3	21	2	22
14:30	4	1	2	3	1	16	2	0	1	2	23	1		56	7	20	3	26
14:45	1	0	0	4	0	25	0	1	2	1	26	2		62	1	29	3	29
15:00	0	1	0	6	0	16	0	1	1	2	11	3		41	1	22	2	16
15:15	8	5	0	0	0	22	8	0	2	1	23	1		70	13	22	10	25
15:30	7	3	2	6	1	17	1	0	2	5	28	1		73	12	24	3	34
15:45	5	0	1	4	1	16	1	0	0	2	26	1		57	6	21	1	29
16:00	3	1	0	4	0	23	3	0	1	2	29	1		67	4	27	4	32
16:15	0	0	1	5	0	19	1	2	1	6	32	2		69	1	24	4	40
16:30	3	1	2	5	0	19	3	0	2	5	24	1		65	6	24	5	30
16:45	4	2	0	7	0	17	0	0	0	5	35	1		71	6	24	0	41
17:00	1	0	0	6	1	19	3	1	0	3	32	0		66	1	26	4	35
17:15	1	1	1	2	0	23	0	0	2	2	33	2		67	3	25	2	37
17:30	4	3	3	3	0	19	0	0	1	0	29	2		64	10	22	1	31
17:45	2	1	1	5	1	20	0	1	0	1	32	3		67	4	26	1	36
Total Count	47	22	14	62	6	304	23	6	18	42	418	23		985	83	372	47	483
24hr Factor	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1
24hr Volume	47	22	14	62	6	304	23	6	18	42	418	23		985	83	372	47	483

Attachment 3

Intersection	
Intersection Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	25	15	5	20	85	20	325	15	130	315	25
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	83	83	83	91	91	91	96	96	96
Heavy Vehicles, %	4	4	4	5	5	5	6	6	6	5	5	5
Mvmt Flow	29	36	22	6	24	102	22	357	16	135	328	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1105	1050	361	1070	1054	385	364	0	0	384	0	0
Stage 1	622	622	-	419	419	-	-	-	-	-	-	-
Stage 2	483	428	-	651	635	-	-	-	-	-	-	-
Follow-up Headway	3.536	4.036	3.336	3.545	4.045	3.345	2.254	-	-	2.245	-	-
Pot Capacity-1 Maneuver	186	225	679	196	223	656	1173	-	-	1158	-	-
Stage 1	471	476	-	606	585	-	-	-	-	-	-	-
Stage 2	561	581	-	452	468	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	121	184	669	138	182	645	1164	-	-	1149	-	-
Mov Capacity-2 Maneuver	121	184	-	138	182	-	-	-	-	-	-	-
Stage 1	456	403	-	586	565	-	-	-	-	-	-	-
Stage 2	438	562	-	337	396	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.6	18.6	0.5	2.4
HCM LOS	E	C		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	185	396	1149	-	-
HCM Lane V/C Ratio	0.019	-	-	0.47	0.335	0.118	-	-
HCM Control Delay (s)	8.152	0	-	40.6	18.6	8.551	0	-
HCM Lane LOS	A	A		E	C	A	A	
HCM 95th %tile Q(veh)	0.058	-	-	2.248	1.446	0.4	-	-

Notes

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

Intersection	
Intersection Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	40	40	30	400	430	35
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	91	91
Heavy Vehicles, %	7	7	3	3	4	4
Mvmt Flow	44	44	38	506	473	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1084	512	521	0	-	0
Stage 1	502	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Follow-up Headway	3.563	3.363	2.227	-	-	-
Pot Capacity-1 Maneuver	235	552	1040	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	218	542	1032	-	-	-
Mov Capacity-2 Maneuver	218	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0.6	0
HCM LOS	C		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	311	-	-
HCM Lane V/C Ratio	0.037	-	0.286	-	-
HCM Control Delay (s)	8.622	0	21.1	-	-
HCM Lane LOS	A	A	C		
HCM 95th %tile Q(veh)	0.115	-	1.153	-	-

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

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	0	5	10	0	10	10	420	10	25	450	15
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	71	71	71	90	90	90	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	4	4	4
Mvmt Flow	14	0	7	14	0	14	11	467	11	30	536	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1125	1124	565	1122	1127	492	564	0	0	488	0	0
Stage 1	614	614	-	504	504	-	-	-	-	-	-	-
Stage 2	511	510	-	618	623	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.236	-	-
Pot Capacity-1 Maneuver	184	207	528	185	206	581	1003	-	-	1065	-	-
Stage 1	483	486	-	554	544	-	-	-	-	-	-	-
Stage 2	549	541	-	480	481	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	169	192	519	172	191	571	994	-	-	1055	-	-
Mov Capacity-2 Maneuver	169	192	-	172	191	-	-	-	-	-	-	-
Stage 1	472	462	-	541	531	-	-	-	-	-	-	-
Stage 2	523	528	-	450	457	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.3	20.3	0.2	0.4
HCM LOS	C	C		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	994	-	-	218	264	1055	-	-
HCM Lane V/C Ratio	0.011	-	-	0.1	0.107	0.028	-	-
HCM Control Delay (s)	8.663	0	-	23.3	20.3	8.511	0	-
HCM Lane LOS	A	A		C	C	A	A	
HCM 95th %tile Q(veh)	0.034	-	-	0.328	0.354	0.087	-	-

Notes

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

Intersection	
Intersection Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	15	25	410	30	20	475
Conflicting Peds, #/hr	10	25	0	45	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	90	90	86	86
Heavy Vehicles, %	0	0	2	2	4	4
Mvmt Flow	16	27	456	33	23	552

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1096	507	0	0	514	0
Stage 1	497	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Follow-up Headway	3.5	3.3	-	-	2.236	-
Pot Capacity-1 Maneuver	238	570	-	-	1041	-
Stage 1	615	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	218	555	-	-	1033	-
Mov Capacity-2 Maneuver	218	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	0.3
HCM LOS	C		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	351	1033	-
HCM Lane V/C Ratio	-	-	0.123	0.023	-
HCM Control Delay (s)	-	-	16.7	8.565	0
HCM Lane LOS			C	A	A
HCM 95th %tile Q(veh)	-	-	0.414	0.069	-

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

Intersection	
Intersection Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	145	10	5	100	20	5	5	5	15	10	5
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	40	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	93	93	93	44	44	44	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	0	0	0
Mvmt Flow	17	165	11	5	108	22	11	11	11	30	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	216	0	0	399	395	220	395	389	138
Stage 1	-	-	-	-	-	-	245	245	-	139	139	-
Stage 2	-	-	-	-	-	-	154	150	-	256	250	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.626	4.126	3.426	3.5	4	3.3
Pot Capacity-1 Maneuver	1445	-	-	1354	-	-	540	524	791	568	549	916
Stage 1	-	-	-	-	-	-	733	682	-	869	785	-
Stage 2	-	-	-	-	-	-	821	751	-	753	704	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1434	-	-	1344	-	-	492	496	761	534	519	902
Mov Capacity-2 Maneuver	-	-	-	-	-	-	492	496	-	534	519	-
Stage 1	-	-	-	-	-	-	701	653	-	851	776	-
Stage 2	-	-	-	-	-	-	782	742	-	714	674	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	11.9	12.1
HCM LOS			B	B

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	559	1434	-	-	1344	-	-	567
HCM Lane V/C Ratio	0.061	0.012	-	-	0.004	-	-	0.106
HCM Control Delay (s)	11.9	7.541	0	-	7.689	0	-	12.1
HCM Lane LOS	B	A	A		A	A		B
HCM 95th %tile Q(veh)	0.194	0.036	-	-	0.012	-	-	0.353

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

Intersection	
Intersection Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	80	0	0	65	0	0	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	87	0	0	71	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	97	0	0	178	178	107	178	178	91
Stage 1	-	-	-	-	-	-	97	97	-	81	81	-
Stage 2	-	-	-	-	-	-	81	81	-	97	97	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1517	-	-	1496	-	-	784	716	947	784	716	967
Stage 1	-	-	-	-	-	-	910	815	-	927	828	-
Stage 2	-	-	-	-	-	-	927	828	-	910	815	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1505	-	-	1485	-	-	772	705	933	772	705	952
Mov Capacity-2 Maneuver	-	-	-	-	-	-	772	705	-	772	705	-
Stage 1	-	-	-	-	-	-	903	809	-	920	822	-
Stage 2	-	-	-	-	-	-	920	822	-	903	809	-

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

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	0	1505	-	-	1485	-	-	0
HCM Lane V/C Ratio	+	-	-	-	-	-	-	+
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A			A			A
HCM 95th %tile Q(veh)	+	0	-	-	0	-	-	+

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

Attachment 4

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

OR 99W (Hwy 091) (Trade Street) @ OR 153 (Hwy 153) (Nursery Street) / 6th Street
January 1, 2007 through December 31, 2011

SER# INVEST	SPED	ALCS	DRUG	SCHL	WORK	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# COMPNT MLG MILEPNT	FC TYP	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	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
00415	N	N	N			05/09/2007	YAMHILL	1	06		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										004	10
NONE						Wed	AMITY	0	0	TRADE ST	S		UNKNOWN	N	DRY	REAR		PRVTE	S N								000		00
						3P		44.75		6TH ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y	026	000		10
																									OR>25					
																	02	NONE 0	STOP											
																		PRVTE	S N								011	004	00
																		PSNGR CAR		01	DRVR	INJC	49	F	OR-Y	000	000		00
																									OR>25					
00298	N	N	N			04/17/2010	YAMHILL	1	06		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sat	AMITY	0	0	NURSERY AVE	S		STOP SIGN	N	DRY	REAR		PRVTE	S N								000		00
						2P		44.75		TRADE ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y	026	000		07
																									OR<25					
																	02	NONE 0	STOP											
																		PRVTE	S N								012		00
																		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y	000	000		00
																									OR<25					
																				02	PSNG	INJC	18	F		000	000		00
01049	N	N	N	Y		12/12/2011	YAMHILL	1	06		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R											03
CITY						Mon	AMITY	0	0	NURSERY AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	E N								015		00
						4P		44.75		TRADE ST	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	96	M	OR-Y	021	000		03
																									OR>25					
																	02	NONE 0	STRGHT											
																		PRVTE	S N								000		00
																		PSNGR CAR		01	DRVR	INJC	44	F	OR-Y	000	000		00
																									OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

OR 99W (Hwy 091) (Trade Street) @ OR 153 (Hwy 153) (5th Street)
January 1, 2007 through December 31, 2011

SER# INVEST	SPEED	ALCOHOL	DRUG	SCHOOL	WORK	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# COMPNT MLG MILEPNT	FC TYP	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	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
00857	N	N	N	N	N	09/21/2008	YAMHILL	1	06		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
COUNTY						Sun	AMITY	0	0	TRADE ST	N		NONE	N	DRY	REAR		PRVTE	N S									000		00
						3P		44.68		5TH ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	70	M	OR-Y		026	000		07
																									OR<25					
																	02	NONE 0	STOP											
																		PRVTE	N S									011		00
																		PSNGR CAR		01	DRVR	NONE	42	F	OR-Y		000	000		00
																									OR<25					
00145	N	N	N			02/07/2010	YAMHILL	1	06		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										004	07
NONE						Sun	AMITY	0	0	TRADE ST	N		UNKNOWN	N	DRY	REAR		PRVTE	N S									000		00
						3P		44.68		5TH ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		026	000		07
																									OR<25					
																	02	NONE 0	STOP											
																		PRVTE	N S									011	004	00
																		PSNGR CAR		01	DRVR	INJC	38	M	OR-Y		000	000		00
																									OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

OR 99W (Trade Street) (Hwy 091) @1st Street / Rosedell Avenue
January 1, 2007 through December 31, 2011

SER# INVEST	SPEED	ALCOHOL	DRUG	SCHOOL	WORK	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# COMPNT MLG MILEPNT	FC TYP	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	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
00097	N	N	N	Y	N	01/09/2007	YAMHILL	1	06		INTER	CROSS	N	N	FOG	PED	01	NONE 0	TURN-R											02
CITY						Tue	AMITY	0	0	ROSEDELL AVE	E		STOP SIGN	N	WET	PED		PRVTE	E N								015		00
						8A		44.39		TRADE ST	06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		029	000		02
																									OR<25					
																			STRGHT	01	PED	INJC	14	F		01	000	034		00
																			N S											
00764	N	N	N	N	N	09/23/2011	YAMHILL	1	06		INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											07
COUNTY						Fri	AMITY	0	0	TRADE ST	E		NONE	N	DRY	REAR		PRVTE	E W								000		00
						5A		44.39		1ST ST	06	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		026	000		07
																									OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W								011		00
																		PSNGR CAR		01	DRVR	NONE	38	F	OR-Y		000	000		00
																									OR<25					
																				01	PSNG	NO<5	02	F			000	000		00
00940	N	N	N	Y	N	10/02/2007	YAMHILL	1	06		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 1	STRGHT										004	07
COUNTY						Tue	AMITY	0	0	ROSEDELL AVE	S		STOP SIGN	N	WET	REAR		PRVTE	S N								000		00
						7A		44.39		TRADE ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	F	OR-Y		043	000		07
																									OR>25					
																	02	NONE 0	STOP											
																		PRVTE	S N								011	004	00
																		PSNGR CAR		01	DRVR	INJC	53	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

OR 99W (Trade Street) (Hwy 091) @ Rice Lane/ Avenue
January 1, 2007 through December 31, 2011

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

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

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

OR 153 (Nursery Street) (Hwy 153) @ Oak Avenue
January 1, 2007 through December 31, 2011

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

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

OR 153 (Nursery Street) (Hwy 153) from OR 99W (Trade Street) (Hwy 091) to east city limit
January 1, 2007 through December 31, 2011

SER# INVEST	SPED	ALCS	DRUG	SCHL	WORK	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# COMPNT MLG MILEPNT	FC TYP	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	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
00415	N	N	N			05/09/2007	YAMHILL	1	06		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										004	10
NONE						Wed	AMITY	0	0	TRADE ST	S		UNKNOWN	N	DRY	REAR		PRVTE	S N								000		00
						3P		44.75		6TH ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y	026	000		10
																									OR>25				
																	02	NONE 0	STOP										
																		PRVTE	S N								011	004	00
																		PSNGR CAR		01	DRVR	INJC	49	F	OR-Y	000	000		00
																									OR>25				
00298	N	N	N			04/17/2010	YAMHILL	1	06		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sat	AMITY	0	0	NURSERY AVE	S		STOP SIGN	N	DRY	REAR		PRVTE	S N								000		00
						2P		44.75		TRADE ST	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y	026	000		07
																									OR<25				
																	02	NONE 0	STOP										
																		PRVTE	S N								012		00
																		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y	000	000		00
																									OR<25				
																				02	PSNG	INJC	18	F		000	000		00
01049	N	N	N	Y		12/12/2011	YAMHILL	1	06		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R											03
CITY						Mon	AMITY	0	0	NURSERY AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	E N								015		00
						4P		44.75		TRADE ST	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	96	M	OR-Y	021	000		03
																									OR>25				
																	02	NONE 0	STRGHT										
																		PRVTE	S N								000		00
																		PSNGR CAR		01	DRVR	INJC	44	F	OR-Y	000	000		00
																									OR<25				

153 BELLEVUE-HOPEWELL

OR 153 (Nursery Street) (Hwy 153) from OR 99W (Trade Street) (Hwy 091) to east city limit
January 1, 2007 through December 31, 2011

SER# INVEST	SPEED	ALCOHOL	DRUGS	SCHOOL	WORK	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# COMPNT MLG MILEPNT	FC TYP	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	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
00218	N	N	N			03/19/2010	YAMHILL	1	07		STRGHT		N		N	CLR	O-STRGHT	01	NONE 0	STRGHT										02
NONE						Fri	AMITY	0	0	NURSERY AVE	E	(NONE)	UNKNOWN		N	DRY	SS-M		PRVTE	W E								051		00
						6P		6.76		GOUCHER AVE EAST	03				N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	60	F	OR-Y	014	000		02
												(02)															OR<25				
																		02	NONE 0	STRGHT										
																			PRVTE	E W								000		00
																			PSNGR CAR		01	DRVR	INJC	17	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

Rice Lane/Avenue from OR 99W (Trade St) (Hwy 091) to Jellison Street
January 1, 2007 through December 31, 2011

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

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

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

Jellison Street from Rice Avenue to 3rd Street
January 1, 2007 through December 31, 2011

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

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

Rte.	Rdwy	BMP	EMP	Lgth	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
091		**PACIFIC HIGHWAY WEST**														
	1	2.25	2.38	0.13	30,700	27			5	11	11		MULTNOMAH		90	52.19
	1	5.35	5.48	0.13	20,700	12		1	2	3	6		MULTNOMAH		90	43.89
	1	6.12	6.30	0.18	15,600	43	1	1	3	13	25		MULTNOMAH		95	83.98
	1	7.47	7.71	0.24	19,900	40		1	9	15	15		MULTNOMAH	091AI CONN. M.P. 1C7.56	95	81.03
	1	7.47	7.71	0.24	19,900	40		1	9	15	15		MULTNOMAH	SW 64TH AVE.	95	81.03
OR-99W	1	7.71	8.11	0.40	45,000	36		2	5	17	12		WASHINGTON	71ST AVE.	95	74.58
OR-99W	1	7.71	8.11	0.40	45,000	36		2	5	17	12		WASHINGTON	VILLA RIDGE RD.	95	74.58
OR-99W	1	8.34	8.59	0.25	50,200	44			3	16	25		WASHINGTON		95	61.87
OR-99W	1	8.52	8.65	0.13	50,200	40			2	11	27		WASHINGTON	144BL CONN. M.P. 2C6.48	90	51.24
OR-99W	1	8.58	9.03	0.45	49,100	62			1	31	30		WASHINGTON		95	79.86
OR-99W	1	9.37	9.54	0.17	33,100	15		1	3	5	6		WASHINGTON		90	48.98
OR-99W	1	9.56	9.73	0.17	40,700	27		1	4	9	13		WASHINGTON	SW MCKENZIE ST.	95	62.79
OR-99W	1	9.82	9.92	0.10	40,600	23			6	8	9		WASHINGTON	SW GARRETT ST.	90	45.68
OR-99W	1	10.26	10.46	0.20	38,800	57		1	4	25	27		WASHINGTON		95	80.46
OR-99W	1	10.86	11.04	0.18	38,800	30			4	12	14		WASHINGTON		90	52.53
OR-99W	1	11.84	11.96	0.12	37,700	26			4	10	12		WASHINGTON		90	47.62
OR-99W	1	12.57	12.75	0.18	37,700	19		1	3	7	8		WASHINGTON		95	54.15
OR-99W	1	14.91	15.09	0.18	30,700	34		1	1	15	17		WASHINGTON		95	72.29
OR-99W	1	15.92	16.01	0.09	38,300	12		1	1	5	5		WASHINGTON		90	43.31
OR-99W	1	16.58	16.75	0.17	38,300	32			5	13	14		WASHINGTON		95	56.57
OR-99W	1	19.91	20.09	0.18	34,900	6		2			4		YAMHILL		90	45.45
OR-99W	1	21.71	21.89	0.18	33,400	18		1	2	9	6		YAMHILL		95	55.48
OR-99W	1	21.96	22.14	0.18	33,400	44		1	4	11	28		YAMHILL		95	74.80
OR-99W	1	22.38	22.54	0.16	38,500	28			3	10	15		YAMHILL		90	47.07
OR-99W	1	22.80	22.89	0.09	38,800	30		1	3	9	17		YAMHILL	N EVEREST ST.	95	63.03
OR-99W	1	22.86	22.95	0.09	38,800	26			2	9	15		YAMHILL		90	42.99
OR-99W	1	25.44	25.62	0.18	28,600	13		1	3	4	5		YAMHILL		90	46.49
OR-99W	1	25.74	25.85	0.11	28,600	24			5	11	8		YAMHILL	SW 4TH ST.	90	50.88
OR-99W	1	25.79	25.91	0.12	28,600	21			3	9	9		YAMHILL		90	43.07
OR-99W	1	26.06	26.20	0.14	25,800	22		1	1	4	16		YAMHILL		90	50.21
OR-99W	1	32.25	32.38	0.13	10,300	13		1	1	3	8		YAMHILL		90	47.04
OR-99W	1	35.39	35.49	0.10	18,900	16		1	1	6	8		YAMHILL		90	50.68
OR-99W	1	36.27	36.45	0.18	22,100	24			2	12	10		YAMHILL		90	49.32
OR-99W	1	36.62	36.80	0.18	22,100	30		3	5	13	9		YAMHILL		95	76.80
OR-99W	2	37.66	37.84	0.18	12,300	14		3	2	3	6		YAMHILL	THIRD ST.	95	72.06
OR-99W	1	37.67	37.82	0.15	12,900	27				12	15		YAMHILL	NE 3RD ST.	90	51.95
OR-99W	1	38.67	38.84	0.17	18,900	11		2	1	4	4		YAMHILL		95	59.83
OR-99W	1	39.91	40.02	0.11	10,100	7	1	1		1	4		YAMHILL		90	51.93
OR-99W	1	41.86	42.04	0.18	7,800	3		2		1			YAMHILL		90	45.53
OR-99W	1	49.63	49.81	0.18	4,300	10		1	6	1	2		POLK		95	54.31
OR-99W	1	59.94	62.40	2.46	11,700	11		2	3	5	1		POLK		95	66.66
OR-99W	1	81.68	81.86	0.18	16,000	25			3	14	8		BENTON		95	56.56
OR-99W	2	83.26	83.44	0.18	12,300	31		1	7	11	12		BENTON		95	80.30
OR-99	1	109.16	109.26	0.10	11,000	22			3	7	12		LANE		90	46.78
OR-99	1	109.19	109.34	0.15	14,100	23			3	7	13		LANE		90	45.64
OR-99	1	120.52	120.70	0.18	19,500	16	1	1	3	5	6		LANE	RICHARD AVE.	95	68.51
OR-99	1	121.05	121.23	0.18	22,300	37		1	5	12	19		LANE		95	77.39
OR-99	1	122.17	122.35	0.18	18,100	42		2	2	12	26		LANE	7TH PL.	95	82.42
OR-99	1	122.30	122.57	0.27	24,200	43		3	7	8	25		LANE	GRANT ST.	95	80.45
OR-99	2	122.31	122.49	0.18	21,100	35			5	12	18		LANE	GRANT ST.	95	60.28

**The crash data shown in the SPIS group report reflects the highest SPIS site in that group used in calculating the SPIS score.

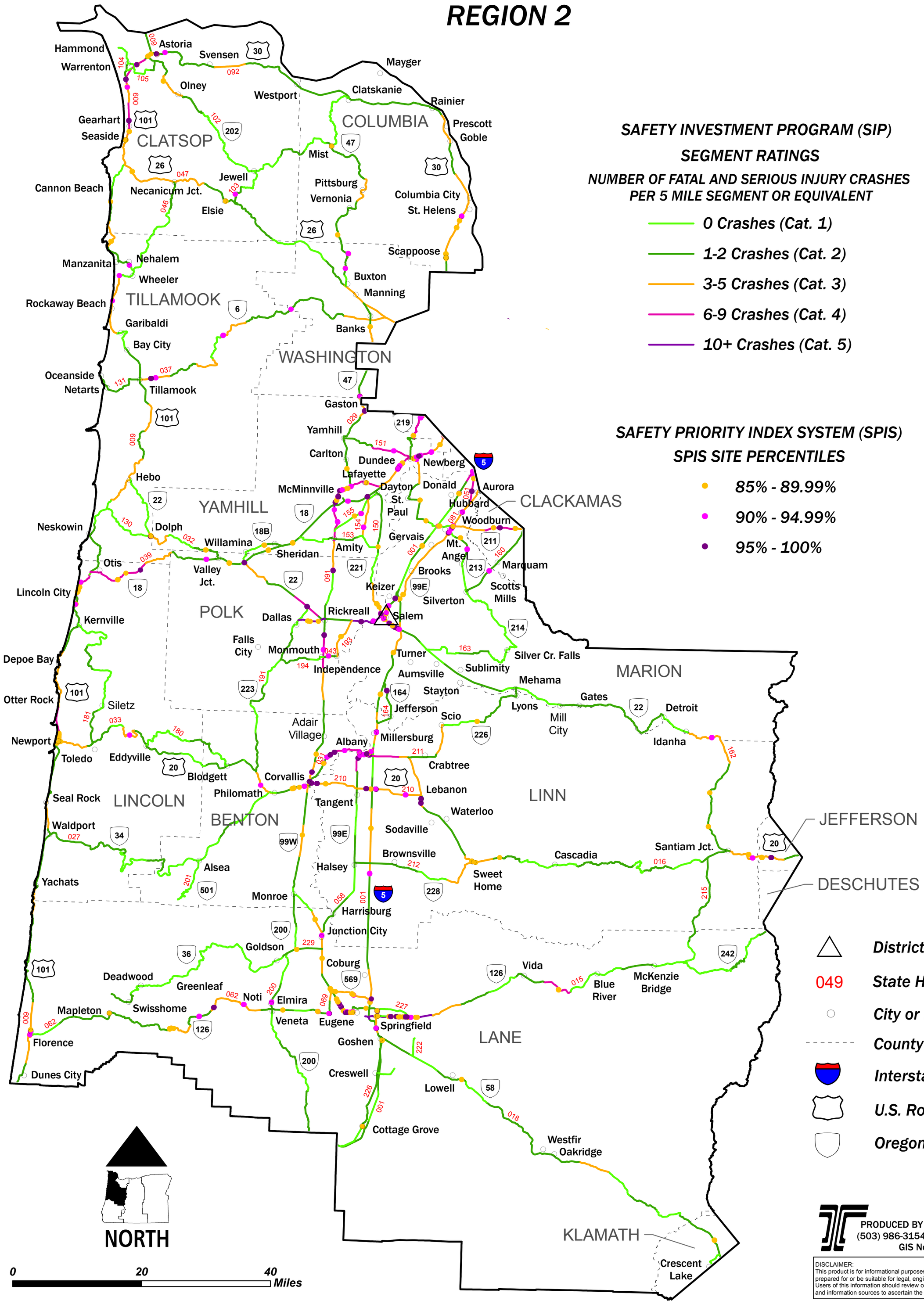
Rte.	Rdwy	BMP	EMP	Lgth	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
140		**HILLSBORO-SILVERTON**														
OR-219	1	3.75	3.93	0.18	8,800	11		2	4	3	2		WASHINGTON	BURKHALTER RD.	95	66.87
OR-219	1	3.75	3.93	0.18	8,800	11		2	4	3	2		WASHINGTON	SIMPSON RD.	95	66.87
OR-219	1	5.45	5.54	0.09	8,400	9		1	1	3	4		WASHINGTON	FARMINGTON RD.	90	43.67
OR-219	1	6.19	6.34	0.15	3,700	5		2		2	1		WASHINGTON		95	55.42
OR-219	1	9.60	9.79	0.19	3,100	12		2	1	5	4		WASHINGTON		95	74.96
OR-219	1	10.91	11.07	0.16	2,700	3		2			1		WASHINGTON		90	48.83
OR-219	1	21.11	21.29	0.18	10,900	22			3	8	11		YAMHILL		90	48.35
OR-214	1	36.93	37.06	0.13	24,900	37			6	6	25		MARION		90	52.61
OR-214	1	37.06	37.15	0.09	19,200	23			4	6	13		MARION		90	43.56
OR-214	1	43.70	43.87	0.17	5,200	6	1		3	2			MARION		90	43.35
141		**BEAVERTON-TUALATIN**														
OR-141	1	2.75	2.93	0.18	25,100	40			3	11	26		WASHINGTON		95	56.97
OR-141	1	4.60	4.75	0.15	11,800	11		1	3	3	4		WASHINGTON		90	47.11
OR-141	1	4.88	5.04	0.16	9,500	26			2	11	13		WASHINGTON		95	55.31
OR-141	1	6.99	7.78	0.79	12,900	19		1	2	7	9		WASHINGTON	SW AVON ST.	95	58.35
142		**FARMINGTON**														
OR-10	1	6.00	6.14	0.14	12,600	10		1		5	4		WASHINGTON		90	44.17
OR-10	1	6.08	6.17	0.09	12,600	9		1		5	3		WASHINGTON		90	43.01
143		**SCHOLLS**														
OR-210	1	9.03	9.15	0.12	40,300	76		4	8	30	34		WASHINGTON		95	83.68
OR-210	1	9.35	9.60	0.25	16,900	66			8	20	38		WASHINGTON		95	89.21
144		**BEAVERTON-TIGARD**														
OR-217	1	1.07	1.25	0.18	114,600	30		1	2	9	18		WASHINGTON		95	57.69
OR-217	1	2.91	3.07	0.16	118,700	17		1		8	8		WASHINGTON		90	47.21
OR-217	1	4.43	4.57	0.14	105,800	22		1	1	11	9		WASHINGTON		95	55.88
150		**SALEM-DAYTON**														
OR-221	1	20.30	20.52	0.22	28,500	27		1	4	11	11		POLK		95	67.59
OR-221	1	20.48	20.67	0.19	38,100	32			5	12	15		POLK		95	55.09
151		**YAMHILL-NEWBERG**														
OR-240	1	8.63	8.79	0.16	6,600	4		2		1	1		YAMHILL		90	48.49
154		**LAFAYETTE**														
OR-154	1	4.86	5.03	0.17	4,000	5		2	3				YAMHILL		95	56.42
155		**AMITY-DAYTON**														
OR-233	1	5.00	5.16	0.16	1,100	11			4	1	6		YAMHILL		90	46.71

**The crash data shown in the SPIS group report reflects the highest SPIS site in that group used in calculating the SPIS score.

PROJECT SAFETY MANAGEMENT SYSTEM

2012 (using 2009 - 2011 crashes)

REGION 2



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Attachment 5

With Background Growth

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	20	440	15	165	425	25	20	25	15	5	20	110
OR 99W (Trade Street) at OR 153/5th Street	40	540	0	0	580	35	40	0	50	0	0	0
OR 99W (Trade Street) at 1st Street	10	565	10	25	610	15	10	0	5	10	0	10
OR 99W (Trade Street) at Rice Lane	0	555	30	20	640	0	0	0	0	15	0	25
Oak Avenue at OR 153/Nursery Avenue	5	5	5	15	10	5	15	185	10	5	130	20

***Applied to balanced, 30th highest hour, through-traffic volumes on both OR 153 and OR 99W to achieve year 2038 future volumes*

From: 2013 To: 2038

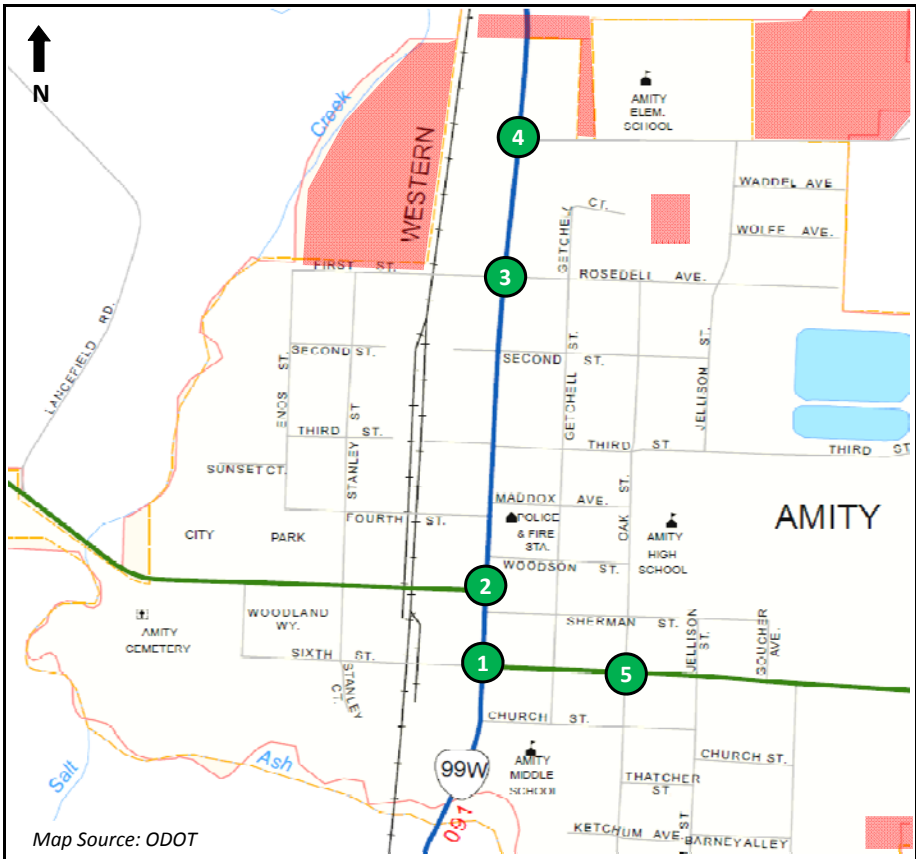
Annual Percentage Rate	
OR99W	1.40%
OR153	1.14%

With Urban Growth Boundary Expansion

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	0	24	4	9	7	0	0	0	0	2	0	18
OR 99W (Trade Street) at OR 153/5th Street	0	42	0	0	14	13	14	0	2	0	0	0
OR 99W (Trade Street) at 1st Street	13	43	0	0	11	23	4	0	16	0	0	0
OR 99W (Trade Street) at Rice Lane	0	4	43	41	25	0	0	0	0	9	0	38
Oak Avenue at OR 153/Nursery Avenue	0	0	0	0	0	0	0	13	0	0	20	0

2038 Future No Build - Balanced Volumes for Synchro Analysis

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 99W (Trade Street) at OR 153/Nursery Avenue	20	469	19	174	432	25	20	25	15	7	20	133
OR 99W (Trade Street) at OR 153/5th Street	40	582	0	0	579	58	54	0	52	0	0	0
OR 99W (Trade Street) at 1st Street	23	603	10	25	606	38	14	0	21	10	0	10
OR 99W (Trade Street) at Rice Lane	0	554	73	61	645	0	0	0	0	24	0	63
Oak Avenue at OR 153/Nursery Avenue	5	5	5	15	10	5	15	193	10	5	150	20



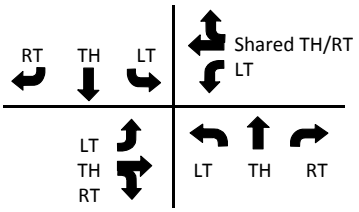
Map Source: ODOT

Legend

4 Intersection Number

STOP Stop Controlled leg

Peak Hour Turning Volumes and Channelization



Turning Movement Direction

LT: Left Turn

TH: Through

RT: Right Turn

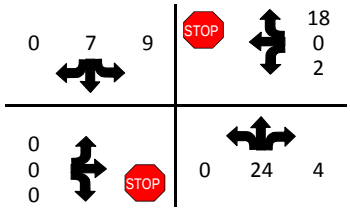
Urban Growth Boundary Expansion Area

Major Street is uncontrolled.

Minor Street is stop-controlled.

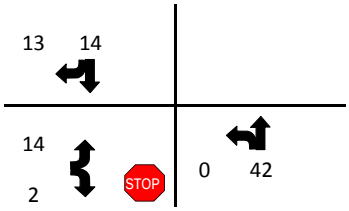
1 OR 99W (Trade Street) at OR 153/Nursery

Major St / Minor St



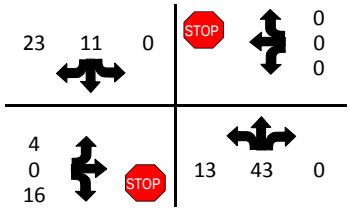
2 OR 99W (Trade Street) at OR 153/5th Street

Major St / Minor St



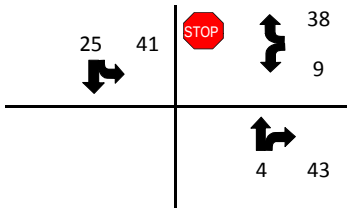
3 OR 99W (Trade Street) at 1st Street

Major St / Minor St



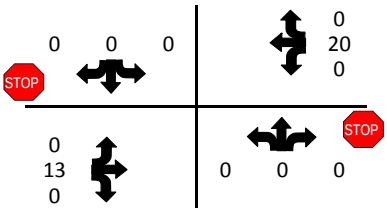
4 OR 99W (Trade Street) at Rice Lane

Major St / Minor St



5 Oak Avenue at OR 153/Nursery Avenue

Major St / Minor St



CH2MHILL

Amity TSP

Expanded Urban Growth Boundary Trips

Attachment 6

Intersection	
Intersection Delay, s/veh	13

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	25	15	7	20	133	20	469	19	174	432	25
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	90	90	90	91	91	91	96	96	96
Heavy Vehicles, %	4	4	4	5	5	5	6	6	6	5	5	5
Mvmt Flow	24	29	18	8	22	148	22	515	21	181	450	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1501	1426	483	1439	1429	546	486	0	0	546	0	0
Stage 1	836	836	-	580	580	-	-	-	-	-	-	-
Stage 2	665	590	-	859	849	-	-	-	-	-	-	-
Follow-up Headway	3.536	4.036	3.336	3.545	4.045	3.345	2.254	-	-	2.245	-	-
Pot Capacity-1 Maneuver	99	134	580	109	133	532	1056	-	-	1008	-	-
Stage 1	359	380	-	495	495	-	-	-	-	-	-	-
Stage 2	446	492	-	347	373	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	46	96	571	64	95	523	1048	-	-	1000	-	-
Mov Capacity-2 Maneuver	46	96	-	64	95	-	-	-	-	-	-	-
Stage 1	346	284	-	475	475	-	-	-	-	-	-	-
Stage 2	294	473	-	225	279	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	147.9	38.1	0.3	2.6
HCM LOS	F	E		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1048	-	-	83	279	1000	-	-
HCM Lane V/C Ratio	0.021	-	-	0.85	0.637	0.181	-	-
HCM Control Delay (s)	8.509	0	-	147.9	38.1	9.395	0	-
HCM Lane LOS	A	A		F	E	A	A	
HCM 95th %tile Q(veh)	0.064	-	-	4.427	4.003	0.66	-	-

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

Intersection	
Intersection Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	54	52	40	582	579	58
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	91	91
Heavy Vehicles, %	7	7	3	3	4	4
Mvmt Flow	60	58	44	647	636	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1414	688	710	0	-	0
Stage 1	678	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Follow-up Headway	3.563	3.363	2.227	-	-	-
Pot Capacity-1 Maneuver	148	438	885	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	133	430	878	-	-	-
Mov Capacity-2 Maneuver	133	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.5	0.6	0
HCM LOS	E		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	878	-	201	-	-
HCM Lane V/C Ratio	0.051	-	0.586	-	-
HCM Control Delay (s)	9.319	0	45.5	-	-
HCM Lane LOS	A	A	E		
HCM 95th %tile Q(veh)	0.16	-	3.238	-	-

Notes
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Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	0	21	10	0	10	23	603	10	25	606	38
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	3	3	3	4	4	4
Mvmt Flow	16	0	25	12	0	12	26	670	11	28	673	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1503	1502	714	1509	1518	696	726	0	0	691	0	0
Stage 1	760	760	-	737	737	-	-	-	-	-	-	-
Stage 2	743	742	-	772	781	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.236	-	-
Pot Capacity-1 Maneuver	101	123	435	100	120	445	872	-	-	895	-	-
Stage 1	401	417	-	413	428	-	-	-	-	-	-	-
Stage 2	410	425	-	395	408	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	89	109	427	86	106	437	864	-	-	887	-	-
Mov Capacity-2 Maneuver	89	109	-	86	106	-	-	-	-	-	-	-
Stage 1	378	392	-	389	404	-	-	-	-	-	-	-
Stage 2	376	401	-	349	383	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.8	34.8	0.3	0.3
HCM LOS	D	D		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	864	-	-	170	144	887	-	-
HCM Lane V/C Ratio	0.03	-	-	0.242	0.163	0.031	-	-
HCM Control Delay (s)	9.294	0	-	32.8	34.8	9.19	0	-
HCM Lane LOS	A	A		D	D	A	A	
HCM 95th %tile Q(veh)	0.091	-	-	0.908	0.565	0.097	-	-

Notes

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Intersection	
Intersection Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	24	63	554	73	61	645
Conflicting Peds, #/hr	10	25	0	45	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	90	90	90	90
Heavy Vehicles, %	0	0	2	2	4	4
Mvmt Flow	26	68	616	81	68	717

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1533	691	0	0	722	0
Stage 1	681	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Follow-up Headway	3.5	3.3	-	-	2.236	-
Pot Capacity-1 Maneuver	130	448	-	-	871	-
Stage 1	506	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	107	436	-	-	864	-
Mov Capacity-2 Maneuver	107	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	352	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.9	0	0.8
HCM LOS	D		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	236	864	-
HCM Lane V/C Ratio	-	-	0.396	0.078	-
HCM Control Delay (s)	-	-	29.9	9.521	0
HCM Lane LOS			D	A	A
HCM 95th %tile Q(veh)	-	-	1.79	0.255	-

Notes
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Intersection	
Intersection Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	193	10	5	150	20	5	5	5	15	10	5
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	40	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	93	93	93	44	44	44	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	14	14	14	0	0	0
Mvmt Flow	17	214	11	5	161	22	11	11	11	30	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	266	0	0	501	497	270	498	492	192
Stage 1	-	-	-	-	-	-	293	293	-	193	193	-
Stage 2	-	-	-	-	-	-	208	204	-	305	299	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.626	4.126	3.426	3.5	4	3.3
Pot Capacity-1 Maneuver	1380	-	-	1298	-	-	462	458	741	486	481	855
Stage 1	-	-	-	-	-	-	690	649	-	813	745	-
Stage 2	-	-	-	-	-	-	767	711	-	709	670	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1369	-	-	1288	-	-	419	433	713	455	454	842
Mov Capacity-2 Maneuver	-	-	-	-	-	-	419	433	-	455	454	-
Stage 1	-	-	-	-	-	-	660	620	-	795	736	-
Stage 2	-	-	-	-	-	-	729	703	-	670	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	12.9	13.3
HCM LOS			B	B

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1369	-	-	1288	-	-	492
HCM Lane V/C Ratio	0.069	0.012	-	-	0.004	-	-	0.122
HCM Control Delay (s)	12.9	7.662	0	-	7.807	0	-	13.3
HCM Lane LOS	B	A	A		A	A		B
HCM 95th %tile Q(veh)	0.222	0.037	-	-	0.013	-	-	0.414

Notes
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Intersection	
Intersection Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	106	0	0	98	0	0	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	115	0	0	107	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	117	0	0	125	0	0	242	242	135	242	242	127
Stage 1	-	-	-	-	-	-	125	125	-	117	117	-
Stage 2	-	-	-	-	-	-	117	117	-	125	125	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1471	-	-	1462	-	-	712	660	914	712	660	923
Stage 1	-	-	-	-	-	-	879	792	-	888	799	-
Stage 2	-	-	-	-	-	-	888	799	-	879	792	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1460	-	-	1451	-	-	701	650	900	701	650	909
Mov Capacity-2 Maneuver	-	-	-	-	-	-	701	650	-	701	650	-
Stage 1	-	-	-	-	-	-	872	786	-	881	793	-
Stage 2	-	-	-	-	-	-	881	793	-	872	786	-

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

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	0	1460	-	-	1451	-	-	0
HCM Lane V/C Ratio	+	-	-	-	-	-	-	+
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A			A			A
HCM 95th %tile Q(veh)	+	0	-	-	0	-	-	+

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

Appendix C

Technical Memo #2 - Alternatives Evaluation

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Technical Memo #2: Alternatives Evaluation

April 28, 2014

Prepared for: Chuck Eaton, PE, City of Amity
Copy to: Naomi Zwerdling, ODOT

Prepared by:
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Introduction

This technical memo reviews project alternatives that address transportation system deficiencies in Amity. These alternatives address street, bicycle, pedestrian, and transit needs within the City. The project team developed alternatives based on the existing and anticipated future needs identified by the City, community, and the project team in Technical Memo #1: Existing and Future Conditions. A project "alternative" is one approach to addressing an identified deficiency or need – some alternatives may be eliminated, revised, or added based on the evaluation included in this memo, as well as City and community feedback. The next phase of the project will include recommending specific alternatives for inclusion in the final Transportation System Plan (TSP).

This memo provides a written description of each alternative, discusses potential impacts (positive and negative), and provides planning level cost estimates to aid in understanding each project's potential effects on the transportation system in Amity. **Appendix A** contains full cost estimates.

System Alternatives

This memo addresses system alternatives by transportation mode, including street, pedestrian and bicycle, and transit. There are no alternatives for waterways, pipelines, rail, or freight, as there were either no facilities or needs identified with these modes. These alternatives address both existing and future needs as Amity continues to grow and develop. Street project descriptions include potential future traffic impacts, where appropriate, to address congestion or delay issues. Impacts to historic resources are not called out specifically below; there are no listed properties on the National Historic Register within the City. However, there are properties eligible for listing, mostly located within downtown.[1] Because many of the structures in Amity are of historic vintage, any project that requires additional right-of-way will necessitate review of potential impacts to historic structures.

[1] Review based on data from the Oregon Parks and Recreation Department: Oregon Heritage database. Available from http://heritagedata.prd.state.or.us/historic/.

No functional classification changes to existing streets are proposed as part of any street system alternative. Existing and future traffic conditions analysis did not reveal any need to modify street classifications. All street extensions described in the following section are intended to function as "local" streets.

Street System

Technical Memo #1 identified few congestion and delay issues on the street network within Amity. As a result, most of the recommendations in this memo include new connections to provide travel alternatives for city residents, increase redundancy in the system, and allow local trips to remain on the local street network without relying on OR 99W/Trade Street or OR 153/Nursery Avenue/5th Street. Beyond the network connectivity and street connection alternatives, there are two modifications that could potentially impact traffic operations within the City: adding a signal on OR 99W/Trade Street and OR 153/Nursery Avenue and adding a median restricting left turns into and out of Oak Street at OR 153/Nursery Avenue. Figure 1 illustrates the location of the projects in the following section.

1. Add a Signal at OR 99W/Trade Street and OR 153/Nursery Avenue - $686,000

One of the few deficiencies identified in the existing conditions and future no-build memo was a long period of delay (over 100 seconds) for vehicles turning onto OR 99W/Trade Street from OR 153/Nursery Avenue. The project team explored a signal at OR 99W/Trade Street and OR 153/Nursery Avenue to help vehicles turning from OR 153/Nursery Avenue onto OR 99W/Trade Street. However, while this alternative improves the delay from OR 153/Nursery Street from over 100 seconds per vehicle to 10 seconds per vehicle, it would impact the southbound OR 99W/Trade Street approach by increasing the v/c ratio from 0.18 to 0.79. While this v/c ratio is still technically acceptable, the signal would introduce additional delay to the dominant north-south movement along OR 99W/Trade Street and could cause vehicles to back up on OR 99W/Trade Street up to 1,300 feet (over ¼ mile). While this alternative improves the ability for vehicles to turn from OR 153/Nursery Avenue, it would create more delay and create longer trips or those traveling north/south on OR 99W/Trade Street. Additionally, ODOT requires that signal warrants be met at this intersection – signal warrants are not met in the future year according to traffic analysis.

2. Modify Oak Avenue to Right-in/Right-out on OR 153/Nursery Avenue

This alternative would add a bicycle and pedestrian refuge on OR 153/Nursery Avenue at Oak Avenue. This refuge would be a raised median and would prohibit left turns into and out of Oak Avenue at OR 153/Nursery Avenue. Traffic that would normally turn left from Oak Avenue would be re-routed to OR 99W/Trade Street or other local streets like Getchell or Jellison Avenues. The increased traffic associated with this alternative would increase the v/c on eastbound OR 153/Nursery Avenue from 0.85 to 0.94, which is still within ODOT's applicable mobility target of 0.95. School buses would need to be rerouted because of this project. The intersection of Getchell Avenue and OR 153/Nursery Avenue could alternatively be considered for minor crossings improvements (this intersection was previously improved by ODOT).

The cost for this project is included in the cost for the project "Oak Avenue, from Church to 3rd Avenue," discussed below. This intersection modification would likely be constructed as part of this project, but is discussed separately here because of its potential auto traffic impacts.

3. Add a Left Turn Pocket on Rice Lane - $195,000

This alternative would add a left turn pocket from Rice Lane onto OR 99W/Trade Street to make it easier for vehicles to turn off of Rice Lane onto OR 99W/Trade Street. Currently Rice Lane is narrow, with only one lane eastbound, and one lane westbound. Vehicles waiting to turn left or right onto OR 99W/Trade Street line up in one lane. Creating another turn lane at this location would separate those turning left and right, allowing more vehicles to turn onto OR 99W/Trade Street. The existing and future conditions traffic analysis

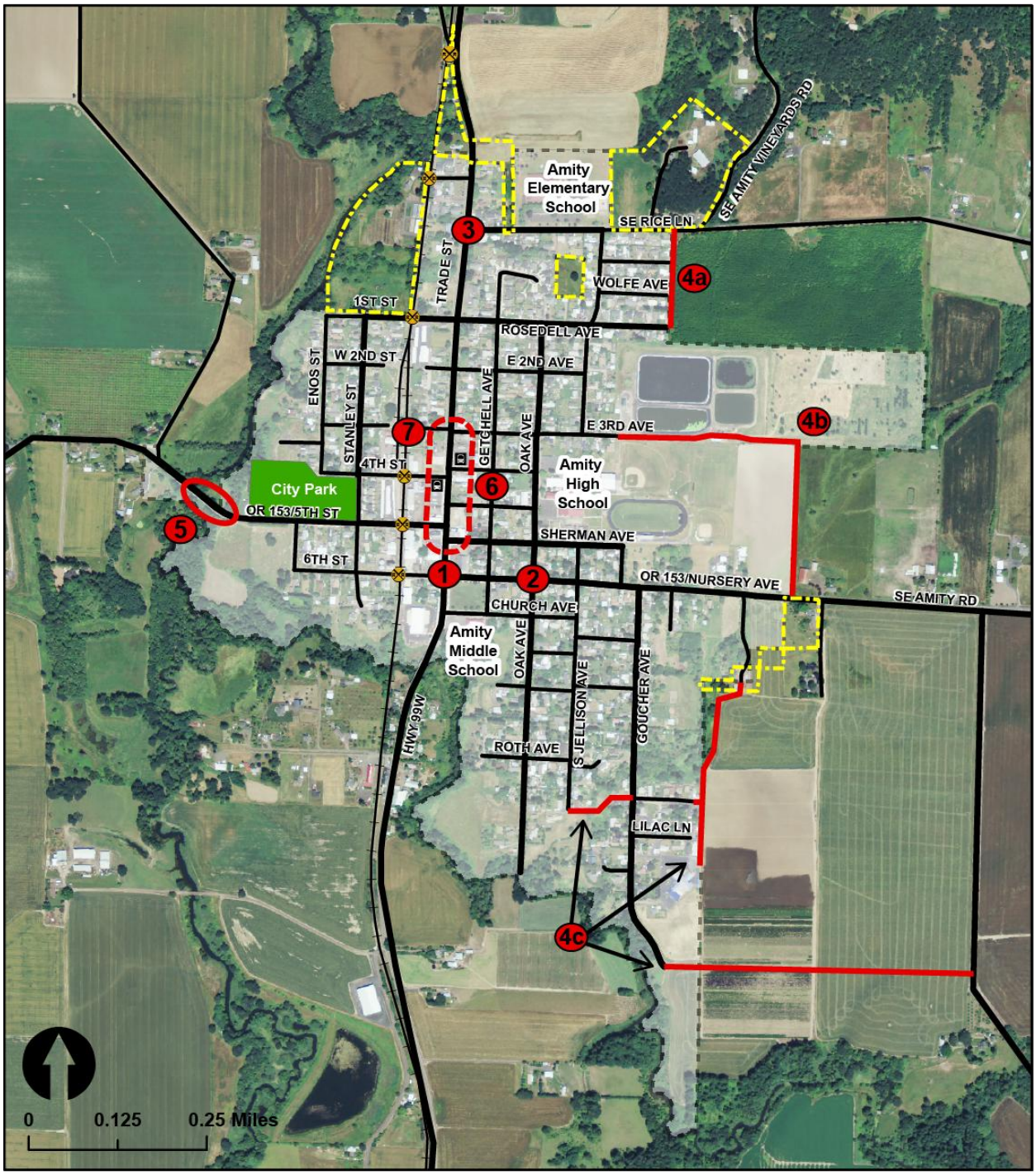
indicated that turns from Rice Lane onto OR 99W/Trade Street met existing traffic standards, however, feedback from the community and the Project Advisory Committee indicated that in the morning, turning from Rice Lane onto OR 99W/Trade Street was difficult and drivers were experiencing delays.

Currently, Rice Lane is 22 feet wide not including the five foot sidewalk on the north side. Adding a turn lane at this location would require additional street width at this intersection; Yamhill County assessor records show the right-of-way as 40 feet. This option would require at least 12 feet of additional paved width to accommodate the turn lane in addition to the width required to accommodate multi-modal improvements proposed below. Additionally, left turn warrants may need to be met before ODOT would consider allowing a left turn pocket.

4. New Street Connections

As discussed in Technical Memo #1, there are areas within the City that lack connectivity or alternative route options. The local roads, especially in the east part of the City do not connect, raising concerns with emergency access and potential future congestion. The project team identified the following street connections to help alleviate these concerns. Future road connections would need to be studied further to identify potential environmental or right-of-way concerns. Figure 1 shows the approximate location of the future connections. As with any street connection, there could be environmental impacts to adding a new street or pedestrian/bicycle facility in an area where none currently exist. There could be other impacts to private property if there is currently no dedicated right-of-way.

Figure 1



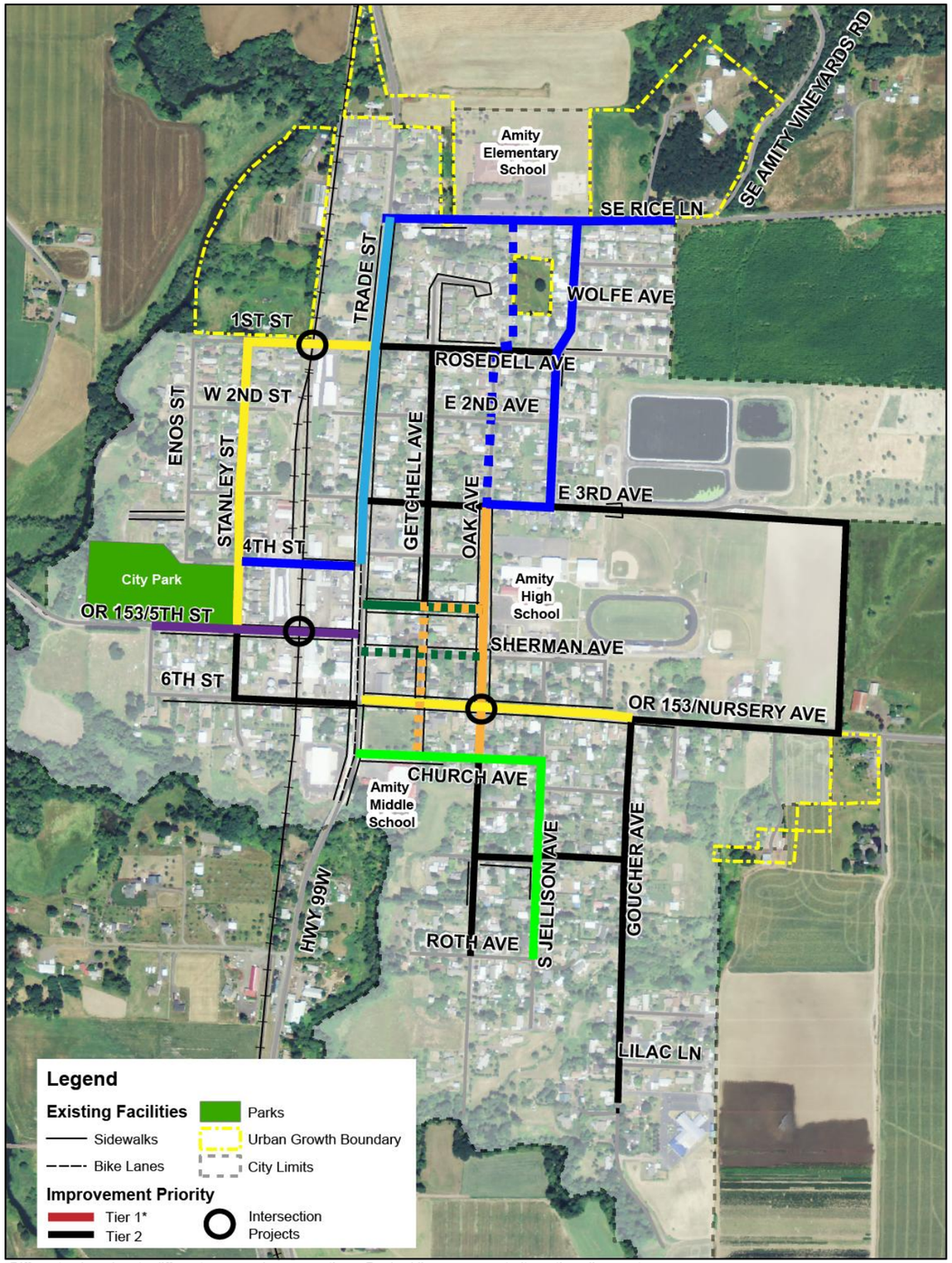
Amity Transportation System Plan
Roadway and Transit Alternatives

Note: numbered locations above correspond to the numbered list of projects in Technical Memo #2.

Legend

- City Limits
- Urban Growth Boundary
- Parks
- Bus stops
- Railroad Crossings
- Project location
- Proposed street extension

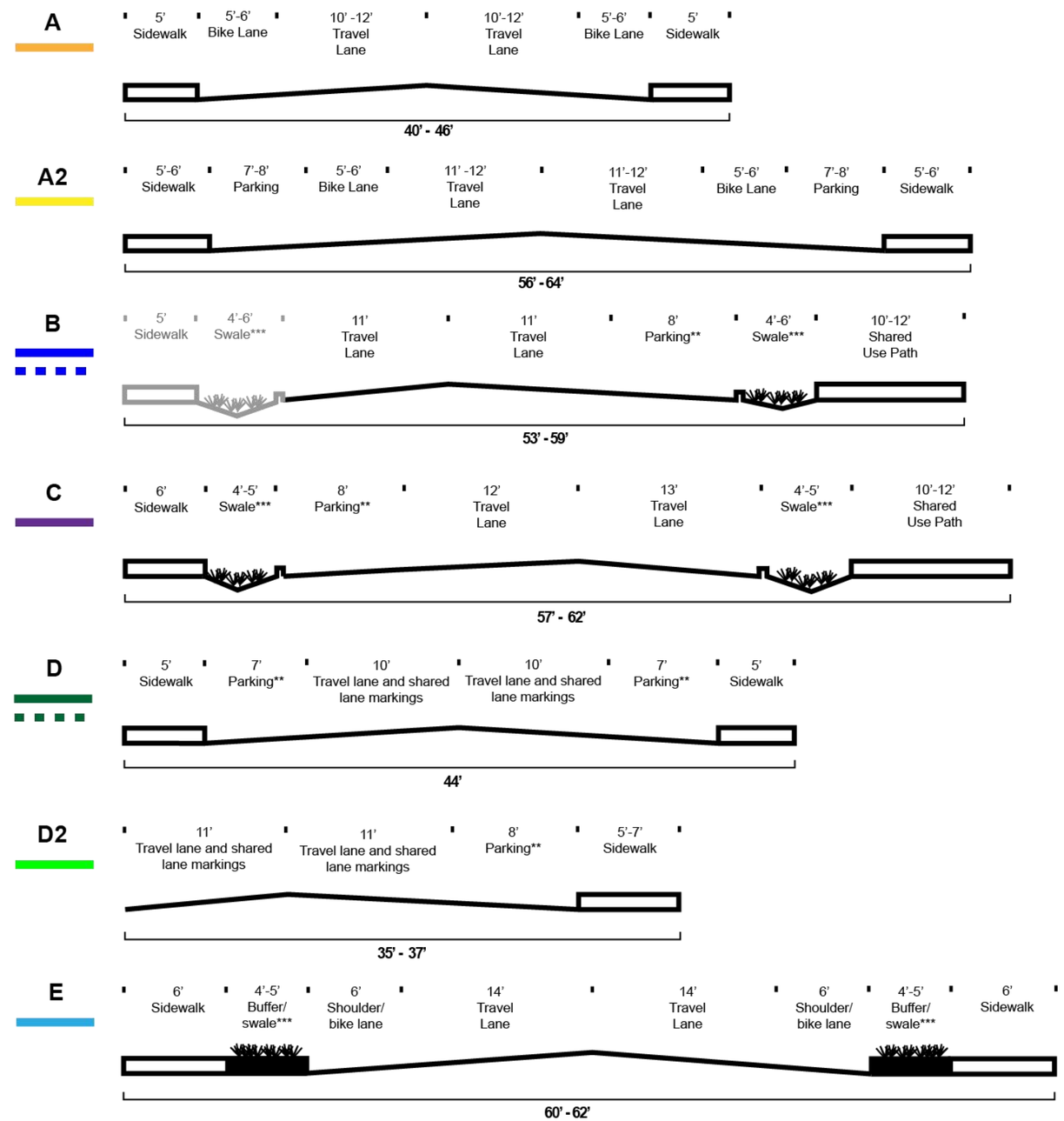
Figure 2



*Different colors denote different proposed cross sections. Dashed lines represent alternative alignments.
**Parking lane dependent on need for on-street parking and right-of-way limitations
***Swale width and other drainage details, including alternative drainage designs, to be determined during project design

Amity Transportation System Plan
Priority Bicycle and Pedestrian Improvement Alternatives

Tier 1 Improvement Alternatives



4a. Rosedell Avenue to Rice Lane Connection – $470,000

Currently the only connection north-south to Rice Lane besides OR 99W/Trade Street is Jellison Avenue. This connection would provide an additional off-highway connection to serve the population south of Rice Lane to access Amity Elementary School. This connection could be a pedestrian/bicycle only facility, though for the purposes of cost estimation, the project team assumed that this would be a full road. If the preferred alternative becomes the bicycle/pedestrian only connection, the cost estimate is likely to be less.

This project would require right-of-way acquisition, though the proposed alignment would not require the demolition of any structures. The proposed alignment would require acquisition of agricultural land. Available resource maps do not show any critical environmental resources, though wetlands are other environmental features could be present.

4b. 3rd Avenue to OR 153/Nursery Avenue Connection - $811,000

This connection could be either a street connection or a bicycle/pedestrian only connection. For purposes of cost estimates, the project team assumes that this connection will be a full road, though if a bicycle/pedestrian only connection is the preferred alternative, the cost estimate is likely to be less. This connection runs east of 3rd Avenue around the potential future location of the Amity Middle School east of the existing Amity High School, and south along the urban growth boundary (UGB) to OR 153/Nursery Avenue. This would provide a connection off of OR 153/Nursery Avenue, allowing for local trips from neighborhoods east of OR 99W/Trade Street through the eastern part of the City.

This project would require right-of-way acquisition, though the proposed alignment would not require the demolition of any structures. The proposed alignment would require property acquisition form the Amity School District and adjacent agricultural lands. Additionally, ODOT design and access management standards may need to be considered for the new connection at OR 153/Nursery Avenue. Available resource maps do not show any critical environmental resources, though wetlands or other environmental features could be present.

4c. Additional Goucher Connection

In the southeastern part of Amity, there are very few east-west connections between the long north-south roads including Jellison Avenue and Goucher Avenue. A second connection linking Goucher to Jellison or another adjacent road is particularly important in the event of an emergency along Goucher Avenue where the road may be blocked. All three of these options would be constructed as emergency access only (approximately 20’ paved width). Bollards or gates would be constructed that would only be removable by emergency personnel; these would prevent through auto traffic while allowing bicycle and pedestrian access.

<u>Option 1 – Jellison Avenue to Goucher Connection - $590,000</u>

This option would construct an east-west street between Jellison Avenue and Goucher south of Roth Avenue. This alignment requires right-of-way acquisition, and may affect structures on Goucher Street. Additionally, there are environmental constraints present; the new road would cross a small stream that drains to Ash Swale. There may be wetlands associated with the stream as well. The topography at this location is such that the new road may require significant import of fill or a bridge/box culvert. Given topographic, environmental, and property constraints, there are very limited opportunities to provide a redundant connection to Goucher Avenue from Jellison Avenue.

<u>Option 2 – Goucher Avenue to Old Bethel Road - $418,000</u>

This option would extend Goucher eastward toward Old Bethel Road. This option would require right-of-way acquisition and may encounter environmental barriers. This project would largely take place outside of the City or UGB and may require a statewide planning "goal exception" from the Department of Land Conservation and Development (goal exceptions for these types of projects are rarely granted).

Option 3 – Amity Christian Church to Nursery Avenue/OR 153 - $351,000

This option would begin at the east end of the parking lot at Amity Christian Church (1305 Goucher Street), follow the eastern edge of the City boundary to connect with a private driveway near Nursery Avenue/OR 153. This project would require right-of-way acquisition and encounter a small stream as well as potential wetlands.

5. OR 153/5th Street Bridge Retrofit/Replacement - $1,200,000

The existing bridge over Salt Creek west of the park along OR 153/5th Street is categorized by ODOT as a Structurally Deficient/Distressed Bridge and is a timber-supported bridge that carries Amity's water supply, along with providing a transportation link to areas west of the City. There are no bicycle or pedestrian facilities on the existing bridge and the lanes are very narrow. The bridge is also weight load restricted. The City is interested in replacing this bridge with a modern structure. This project would require coordination with ODOT as the bridge is on a state highway. Additionally, there are other constraints such as the adjacent City Park and a cemetery that limits potential widening or realignment of this bridge.

In 2012, ODOT began the scoping process for a major rehabilitation of the bridge. The project would include replacement of deteriorated timber posts and railing, new pavement, new guardrails, and painting. This project would extend the useful life of the bridge, but does not constitute a full replacement. As of 2013, the total rehabilitation project was anticipated to cost $1.2 million with construction expected in 2017. Based on scoping documents from ODOT (dated February, 2013), it is not clear whether the rehabilitation would result in removal of load restrictions on the bridge or completely remedy structural deficiencies.

6. Consider Realigning Offset Intersections on OR 99W/Trade Street – policy alternative

Many street connections to OR 99W/Trade Street in downtown Amity are offset, meaning that they do not create four-legged intersections where the east-west streets are aligned. This policy alternative would look for opportunities to create traditional four-legged intersections as properties along OR 99W/Trade Street develop or redevelop to reduce concerns about safety issues as vehicles turn onto the highway from offset side streets.

Transit

7. Potential park and ride

There is one transit line within the City of Amity, and according to findings from them the previous phase of the project, there is interest in providing a park and ride. The City has identified vacant right-of-way at 3rd Street west of OR 99W/Trade Street, where there is a street that dead-ends at the railroad. This could be a future location for a transit park and ride. There is little data to draw from to estimate potential demand for park and ride facilities in Amity. Given that there are few stops in Amity, it is probable that a park and ride may attract new transit users who would otherwise be unwilling to walk to reach the bus stops.

No cost estimate is provided for this project; the cost of a potential park and ride lot is dependent on the number of parking stalls needed and proposed location. Access to existing homes would need to be maintained at this location. This project would also require coordination with Yamhill County Transit Area.

Pedestrian and Bicycle System

Technical Memo #1 identified areas with no sidewalks and bicycle lanes, along with intersections that have high pedestrian and bicycle traffic. These pedestrian and bicycle system alternatives address these identified deficiencies and needs, with a focus on moving school children and those with disabilities throughout the City and to various important destinations including the schools, public services such as City Hall, the Library, Park, and Post Office. The purpose of designating cross section alternatives and identifying streets where they will be implemented is to ensure that there is a complete network off of both OR 99W/Trade Street and OR 153/Nursery Avenue/5th Street for bicyclists and pedestrians to travel through the City. Figure 2 shows the project alternative locations and alternative cross sections for the bicycle and pedestrian system. The projects below are the "Tier 1" projects shown in the Figure 2. No specific improvements are proposed for the "Tier 2" corridors identified; improvements on these corridors are likely beyond the planning horizon of this TSP. Tier 2 corridors add redundancy to the bike and pedestrian system and in some cases would provide new connections on the periphery of the city.

Appendix B contains "before" and "after" maps showing bicycle level of stress (BLOS) on city streets. The "before" map was developed for *Tech Memo #1 Existing and Future Conditions*; the BLOS was assessed for all city streets to determine which streets are the most unpleasant or stressful to bike on. The project team performed a BLOS assessment on the same streets as if all bicycle and pedestrian alternatives were implemented to see how BLOS would change. Several streets, including OR 153/5th Avenue, Rice Lane, portions of Oak Street and OR 153/Nursery Avenue would experience decreases in BLOS according to this methodology.

Cross Section A – Bike Lanes and Sidewalks

Oak Avenue, from Church to 3rd Avenue - $284,000

This project would add bike lanes and fill sidewalk gaps to create pedestrian and bicycle-specific facilities on Oak Avenue from Church to 3rd Avenue. This will help provide a safe route for students walking and bicycling from Amity Middle School to the High School. This alternative would be implemented with street network project #2: Modify Oak Avenue to right-in and right-out at OR 153/Nursery Avenue. Oak Avenue has very constrained right-of-way in this location, though the proposed cross section is intended to fit within this constraint.

> **Alternative: Getchell/Oak Avenue from Church to 3rd - $95,000**
>
> This alternative would utilize the recently improved crossing on Nursery Ave/OR 153. City staff indicates that the ODOT prefers this crossing location, though school staff and other community members note that more students use the unimproved Oak Avenue crossing.

Cross Section A2 – Bike Lanes, Sidewalks, On-Street Parking

OR 153/Nursery Avenue from 99w/Trade Street to Goucher Street - $940,000

This project would similarly add bike lanes and sidewalks to OR 153/Nursery Avenue, which lacks dedicated bicycle facilities and has degraded sidewalks in places. The proposed cross section includes on-street parking on both sides of the street, but vegetated swales could be included instead of parking along all or some of the alignment, depending on parking needs.

Stanley Street from OR 153/5th Street to 1st Street and 99W/Trade Street - $1,540,000

This provides a north-south connection from the park to 1st Street, where students can cross OR 99W/Trade Street at a marked crosswalk. This project would also include upgrades to the existing rail crossing.

Cross Section B Shared Use Path

This cross section would use a shared-use path with a ditch for stormwater to separate bicyclists and pedestrians from the vehicle lanes. Where applicable, this alternative would retrofit existing sidewalks to a wider shared-use bicycle and pedestrian path. An additional sidewalk and drainage swale or vegetative buffer may be considered on the opposite side of the street as well (dependent on site conditions, available right-of-way, and project budget); the additional sidewalk and swale could also be phased as funding allows. This cross section would apply to a number of streets. The costs provided below do not include the additional sidewalk on the opposite side of the street (Figure 2).

Oak Avenue from 3rd Avenue to Rice Lane (along Jellison) - $516,000

This segment provides a north-south connection from Amity High School connecting to the neighborhoods to the north. The community noted that kids tend to not walk on Oak Avenue north of 3rd, and instead all walk along Jellison (one block to the east).

There is sufficient right-of-way on these streets to accommodate Cross Section B.

> **Alternative: Oak Avenue from 3rd Avenue to Rice Lane via Oak and undeveloped property east of Getchell Court - $291,000**
>
> This alternative route would continue following Oak Avenue and head north via a shared use path behind homes east of Getchell Court and adjacent to vacant property west of Jellison. This alternative would require right-of-way acquisition.

Rice Lane from OR 99W/Trade Street to near Amity Vineyards Road - $337,000

This segment provides access from the soon-to-be-improved crossing at Rice Lane and OR 99W/Trade Street to Amity Elementary school and would serve future resident in the northeast UGB expansion area. This project may require right-of-way acquisition on the segment west of Amity Elementary School, as existing right-of-way is 40 feet. The right-of-way constraint is most pronounced at the intersection of OR 99W/Trade Street and Rice Lane – a minimum width of 46 feet would be required to accommodate a shared path and the turn lane project described above (additional width would be required to accommodate drainage, lighting, etc.). This intersection is constrained due to homes located very close to the existing street.

4th Street from Stanley to Trade Street/OR 99W -$178,000

This project would provide redundant east-west connectivity for pedestrian and cyclists to and from the City Park. The Amity community noted that many pedestrians and cyclists use 4th street. This project could also connect with the path that is planned for construction within the City Park.

Cross Section C Shared Use Path and Sidewalk

OR 153/5th Street from OR 99W/Trade Street to Park Entrance - $403,000

This project would reconstruct a sidewalk on one side of the street, with a shared-use path on the other. Both the sidewalk and shared use path would be separated from the travel and parking lane by a ditch or swale for stormwater. This concept would also include upgrading the railroad crossing west of OR 99W/Trade Street.

Cross Section D Shared lanes and Sidewalk on Both Sides

This cross section would implement shared lanes, where vehicles and bicyclists share travel lanes, and provide a sidewalk on both sides of the street. Shared lanes would be marked with “sharrows,” specific lane markings that help cyclists with positioning on the road and indicate to drivers that cyclists may be present. This proposed cross section is a cost-effective means of implementing cycling and pedestrian improvements,

and requires minimal right-of-way. This cross section is appropriate on a few streets that have low traffic volumes:

Woodson Avenue from Oak Avenue to Trade Street/OR 99W - $103,000

This segment would provide access from OR 99W/Trade Street to Amity High School and provide a low-stress alternative route to OR 153/Nursery Avenue. The community noted that students typically use Woodson Avenue for walking and biking, as opposed to other nearby cross streets like 3rd or Sherman Avenue. The proposed cross-section for this street would require right-of-way acquisition along the entire length of the street.

> **Alternative: Sherman Avenue from OR 99W/Trade Street to Oak Avenue - $102,000**
>
> This segment would also provide access from OR 99W/Trade Street to Amity High School and provides a low-stress alternative route to OR 153/Nursery Avenue. This alternative would also connect to the City Park via the path proposed along OR 153/5th Street. The proposed cross-section for this street would require right-of-way acquisition along the entire length of Sherman Avenue.

Cross Section D2 Shared lanes and Sidewalk on One Side

This cross section would implement shared lanes, where vehicles and bicyclists share travel lanes, and provide a sidewalk on both sides of the street. This cross-section accommodates narrow rights-of-way on the streets listed below.

S Jellison Avenue from Roth Avenue to Church Avenue - $167,000

This segment would provide access from neighborhoods south of OR 153/Nursery Avenue. The proposed cross section may necessitate right-of-way acquisition.

Church Avenue from OR 99W/Trade Street to Jellison Avenue - $127,000

This segment would improve cycling and walking for students at Amity Middle School and connect the middle school to the greater pedestrian and biking network.

Cross Section E Sidewalks and Bike Lanes

OR 99W/Trade Street from 3rd Street to Rice Lane - $869,000

This project would complete improvements to OR 99W/Trade Street, including new or reconstructed sidewalks, bike lanes, and vegetation buffers or drainage swales. The south end of OR 99W/Trade Street was previously improved.

Evaluation

The project team evaluated the above project alternatives based on the criteria developed at the beginning of the process. The project team evaluated alternatives using a “consumer reports” style scale with low, medium, and high ratings (Table 1). Table 2 shows all alternatives and their evaluation across all categories. The evaluation approach and criteria are described in detail in the Audit, Plan, Policy Review and Evaluation Framework memo.

Table 1	Evaluation Key
○	Alternative performs poorly with respect to the criterion
◗	Alternative provides some benefits, or is neither beneficial or harmful (neutral)
●	Alternative performs well with respect to the criterion
N/A	The criterion is not applicable to the alternative

Table 2	Evaluation Category								
	Safety	Environmental Impacts	Transportation needs of all citizens	System upgrades and preservation	Multi-modal system	Funding and Finance	Aesthetics	Connectivity	*Notes*
1. Add a signal at OR 99W/Trade Street and OR 153/Nursery Avenue	◗	◗	○	◗	◗	○	◗	◗	This project is costly and provides and is likely to have negative impacts on the city's transportation system.
2. Modify Oak Ave to Right in/Right Out	●	◗	◗	◗	●	◗	◗	◗	Would improve multi-modal crossing safety at this intersection.
3. Add left turn pocket on Rice Ln	◗	○	◗	**N/A**	◗	◗	◗	◗	Project would provide some safety benefit and reduce delay during the morning peak hour. Right-of-way constraints present at intersection of OR 99W/Trade St and Rice Ln.
4a. Rosedell Avenue to Rice Ln connection	◗	◗	◗	○	◗	◗	◗	●	Environmental impacts of this project are unknown; right-of-way acquisition is also required. Project would positively benefit connectivity.
4b. 3rd Ave to OR 153/Nursery Ave connection	●	◗	◗	○	◗	○	◗	●	Project would be costly if financed solely by the city. Potential to add a multi-modal connection. Would create redundant connection, improving emergency response.
4c., Option 1: Jellison Ave to Goucher Ave connection	●	○	◗	○	◗	○	◗	●	This project has serious environmental constraints and may be costly relative to benefits.
4c., Option 2: Jellison Ave to Old Bethel Rd	●	○	◗	○	◗	◗	◗	●	This project requires right-of-way, may encounter unknown environmental constraints, and may require a goal exception from the Department of Land

Table 2	Evaluation Category								
	Safety	Environmental Impacts	Transportation needs of all citizens	System upgrades and preservation	Multi-modal system	Funding and Finance	Aesthetics	Connectivity	*Notes*
									Conservation and Development
4c., Option 3: Amity Christian Church to Nursery Ave/OR 153	●	○	◗	○	◗	◗	◗	●	This project would provide the greatest connectivity benefits, but may encounter environmental constraints and would require right-of-way.
5. OR 153/5th St bridge replacement/ retrofit	●	○	◗	●	●	◗	◗	◗	Environmental constraints are present, including the city park and Salt Creek. Full replacement may have impacts to environmental resources; rehabilitation is likely to have more limited impacts.
6. Consider realigning off-set intersection on OR 99w/Trade Street	◗	◗	◗	○	◗	○	◗	◗	Realignment may negatively impact structures on OR 99W/ Trade St. Realignment may be costly relative to benefits.
7. Potential park and ride	**N/A**	◗	●	**N/A**	●	◗	◗	**N/A**	May be relatively low cost improvement, depending on location and design standards.
Bicycle and pedestrian projects									
Oak Ave, Church to 3rd	●	◗	●	◗	●	◗	◗	●	Project would improve multi-modal connectivity and safety, especially for Amity High School.
Alternative: Getchell/Oak Ave from Church to 3rd	◗	◗	●	◗	●	●	◗	●	This alternative would utilize the previously improved crossing, saving money.
OR 153, Goucher to OR 99W	●	◗	●	◗	●	●	◗	●	The state is a likely funding partner on this project.
Stanley St, OR 153/5th St to 99W	●	◗	●	◗	●	◗	◗	●	Project would improve multi-modal connectivity and safety, especially for students walking or biking to school from areas west

Table 2	Evaluation Category								
	Safety	Environmental Impacts	Transportation needs of all citizens	System upgrades and preservation	Multi-modal system	Funding and Finance	Aesthetics	Connectivity	*Notes*
									of OR 99W/Trade Street. The propose improvements are costly.
Oak Ave/Jellison, 3rd to 1st St/Rosedell	●	◗	●	◗	●	◗	◗	●	Project would improve multi-modal connectivity and safety, especially for students walk and biking to Amity Elementary or High School.
Alternative: Oak Ave, 3rd to Rice via undeveloped property east of Getchell Ct	●	◗	●	◗	●	◗	◗	●	Project would improve multi-modal connectivity and safety. Would require right-of-way acquisition.
Rice Ln, OR 99W to near Amity Vineyards	●	○	●	◗	●	◗	◗	●	Right-of-way constraints present at intersection of OR 99W/Trade St and Rice Ln.
4th Street from Stanley to OR 99W	●	◗	●	◗	●	◗	●	●	Project would connect with a planned shared path in the City Park.
OR 153/5th St, OR 99W to park entrance	●	◗	●	◗	●	●	●	●	The state is a likely funding partner on this project.
Woodson Ave from Oak Ave to OR 99W	◗	◗	●	●	●	●	◗	●	This route was identified as the preferred path for pedestrians.
Alternative: Sherman Ave, OR 99W to Oak Ave	◗	◗	●	◗	●	●	◗	●	Relatively inexpensive improvements proposed. Provides low-stress alternative to OR 153/Nursery Ave.
S Jellison Ave, Roth to Church Ave	●	◗	●	◗	●	●	◗	●	Project would improve multi-modal connectivity and safety, especially to Amity Middle School.

Table 2	Evaluation Category								
	Safety	Environmental Impacts	Transportation needs of all citizens	System upgrades and preservation	Multi-modal system	Funding and Finance	Aesthetics	Connectivity	*Notes*
Church Ave, OR 99W to Jellison Ave	●	◗	●	◗	●	●	◗	●	Project would improve walking and biking safety for students at Amity Middle School.
OR 99W/Trade Street from 3rd St to Rice Ln	●	◗	●	●	●	●	●	●	Project would improve multi-modal safety on the busiest street in Amity. Likely funding partnership with the state.

Next Steps

Projects that scored poorly in the evaluation may be removed from consideration or otherwise revised. Once the list of alternatives has been reviewed by all, the project team will create a list of recommended alternatives – a refinement of the list above. Project refinement may include adjustments to the cross sections or other changes, as well as refined cost estimates. The recommended alternatives will be reviewed by the PAC, TAC, and public prior to inclusion in the draft TSP. The project team will develop a funding plan that will accompany the recommended alternatives.

Appendix A – Full cost estimates

	ROADWAY PROJECTS ORDER OF MAGNITUDE COST ESTIMATES	
Project Number	**Project**	**Estimated Cost**
R1	1. Intersection of OR 153/Nursery Avenue and OR 99W/Trade Street	$686,000
	2. Salt Creek Bridge Replacement - SEE ODOT ESTIMATE	
R2	3. Intersection of Rice Lane and OR 99W/Trade Street	$195,000
R3	4a. Rosedell Avenue - Rice Lane Connection	$470,000
R4	4b. 3rd Avenue - OR 153/Nursery Avenue Connection	$811,000
R5	4c - Option 1: Jellison Avenue - Goucher Avenue Connection	$590,000
R6	4c - Option 2: Goucher Connection - Goucher St/Old Bethel Rd Connection	$418,000
R7	4c - Option 3: OR 153 Connection - OR 153/Maple Ct. Connection	$351,000
BP1	Oak Ave (From Church to 3rd)	$284,000
BP2	Oak Avenue from 3rd Avenue to Rice Lane (along Jellison)	$516,000
BP3	Rice Lane from OR 99W/Trade Street to near Amity Vineyards Road	$337,000
BP4	OR 153/5th St (from OR 99W/Trade St to Park Entrance)	$403,000
BP5	Stanley St/1st St (from OR 153/5th St to OR 99W/Trade St)	$1,540,000
BP6	Church Ave (from OR 99W/Trade St to Jellison)	$127,000
BP7	Sherman Ave (from Oak to OR 99W/Trade St)	$102,000
BP8	S. Jellison Ave (from Roth to Church)	$167,000
BP9	OR 153/ Nursery Ave. (from 99W to Goucher)	$940,000
BP10	Getchell/Oak Avenue from Church to 3rd	$95,000
BP11	Woodson Ave (from Oak to OR 99W/Trade St)	$103,000
BP12	Oak Ave (from 3rd to Rice (Rosedell to Rice Multi-Use Path Only))	$291,000
BP13	4th St. (from US 99W to Stanley St.)	$178,000
BP14	OR 99W/Trade St.. (from 3rd St. to Rice Ln.)	$869,000
	Total	**$9,473,000**

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: **1. Intersection of OR 153/Nursery Avenue and OR 99W/Trade Street**		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Signalization		**LENGTH (MILE):**	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.05	$882,000.00	$44,100
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	Lane-Mi.		$412,500.00	$0
4	Restriping Existing Roadway	Lane-Mi.	0.1	$8,700.00	$870
5	New Signal	EA	1	$300,000.00	$300,000
6	Earthwork	Lane-Mi.		$7.50	$0
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$344,970***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$6,900
	TP & DT	3.0-8.0%	5.0%		$17,200
	Mobilization	8.0-10.0%	10.0%		$34,500
	Erosion Control	0.5-2.0%	2.0%		$6,900
	Contingency	30-40%	40.0%		$138,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$548,470***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$82,300
	Construction Engineering		10.0%		$54,800
			TOTAL PROJECT COST		**$686,000**

Assumptions:

This project will include intersection improvements and one new traffic signal.
One new 4-way signal
Curb and Gutter and sidewalk replacement on all 4 curb returns (60 LF Each)
Crosswalk, Edgeline, and Centerline Striping Replacement (50 feet back from intersection (100' on West 6th))

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**3. Intersection of Rice Lane and OR 99W/Trade Street**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork	**LENGTH (MILE):** 0.11	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.11	$213,300.00	$23,027
4	Reconstruct Existing Roadway	SF	7920	$9.00	$71,280
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.11	$14,670.00	$1,584
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$95,890***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$2,400
	TP & DT	3.0-8.0%	8.0%		$7,700
	Mobilization	8.0-10.0%	10.0%		$9,600
	Erosion Control	0.5-2.0%	2.0%		$1,900
	Contingency	30-40%	40.0%		$38,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$155,890***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$23,400
	Construction Engineering		10.0%		$15,600
			TOTAL PROJECT COST		**$195,000**

Assumptions:

This project includes constructing a turn pocket on Rice Ln at the OR 99W intersection.
Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base)
Assuming all existing pavement within the turn pocket limits will be reconstructed and new pavement will be constructed for widening
Turn pocket New Pavement: (**570 lane-feet**)
- Turn Pocket Width: 12'
- Storage Length: 150' (no traffic study) = 150 lane-feet
- Taper length: 180' = 90 lane-feet
- Shoulder Width: 6' (both sides for entire 330') = 330 lane-feet

Pavement Reconstruction: (**7,920 SF**)
- Existing pavement for entire 330' length (24' wide)

ROW impacts are anticipated, but the costs are not included in this estimate. The ROW width at the intersection of Rice and OR 99W is only 40'. The minimum required ROW with the proposed cross section is 48'.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**4a. Rosedell Avenue - Rice Lane Connection**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	4/23/2014
KIND OF WORK:	Roadway, Earthwork, Drainage, Lighting	**LENGTH (MILE):** 0.38	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.13	$882,000.00	$116,932
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.38	$213,300.00	$80,795
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.45	$14,670.00	$6,668
7	Traffic Calming	5-10%		0.0%	$0
8	Illumination	Mi.	0.13	$260,000.00	$34,470
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$238,865***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$6,000
	TP & DT	3.0-8.0%	3.0%		$7,200
	Mobilization	8.0-10.0%	10.0%		$23,900
	Erosion Control	0.5-2.0%	2.0%		$4,800
	Contingency	30-40%	40.0%		$95,500
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$376,265***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$56,400
	Construction Engineering		10.0%		$37,600
			TOTAL PROJECT COST		**$470,000**

Assumptions:

Project will construct a new roadway consisting of 2-12' Lanes, 1-8' Parking, and 2-5' Sidewalks and occur at the east end of Rosedell St north to Rice Ln.

Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base) with a 20% increase for fill slopes.

1867 lane-feet

Two 750' Lanes (12') = 1400 lane-feet
One 750' Parking Lane (8') = 467 lane-feet
Includes 5' Sidewalk (Both Sides)
Curb and Gutter
Street lighting included at 200' spacing on each side.

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**4b. 3rd Avenue - OR 153/Nursery Avenue Connection**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Drainage, Lighting	**LENGTH (MILE):** 0.61	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.23	$882,000.00	$200,455
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.61	$213,300.00	$129,273
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.73	$14,670.00	$10,669
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.	0.23	$260,000.00	$59,091
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$399,487***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$10,000
	TP & DT	3.0-8.0%	8.0%		$32,000
	Mobilization	8.0-10.0%	10.0%		$39,900
	Erosion Control	0.5-2.0%	2.0%		$8,000
	Contingency	30-40%	40.0%		$159,800
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$649,187***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$97,400
	Construction Engineering		10.0%		$64,900
			TOTAL PROJECT COST		**$811,000**

Assumptions:

This project will construct a new roadway consisting of 2-12' Lanes, 1-8' Parking, and 2-5' Sidewalks from the east end of 3rd St. to the east approx.. 240' and south to OR 153.

Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base) with a 20% increase for fill slopes.

3200 lane-feet

Two 1200' Lanes (12') = 2400 lane-feet
One 1200' Parking Lane (8') = 800 lane-feet
Includes 5' Sidewalk (Both Sides)
Curb and Gutter

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 4c - Option 1: Jellison Avenue - Goucher Avenue Connection		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Structures		**LENGTH (MILE):** 0.10	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.2	$203,300.00	$42,354
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,700	$7.50	$12,750
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF	900	$250.00	$225,000
			SUBTOTAL		***$296,104***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$7,400
	TP & DT	3.0-8.0%	5.0%		$14,800
	Mobilization	8.0-10.0%	10.0%		$29,600
	Erosion Control	0.5-2.0%	2.0%		$5,900
	Contingency	30-40%	40.0%		$118,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$472,204***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$70,800
	Construction Engineering		10.0%		$47,200
			TOTAL PROJECT COST		**$590,000**

Assumptions:

Connection from the south end of Jellison St. to Goucher St. just north of SW Maple St.
This project will construct a new rural roadway section consisting of 2-10' Lanes, 2-2' shoulders and ditches. No curb, gutter, sidewalk or enclosed drainage.
Earthwork estimated to construct the proposed pavement section: fill required to minimize street grade over ditch crossing (assuming average fill depth of 9' over 175' foot span) with a 20% increase for fill slopes
Anticipated Bridge Structure for ditch crossing (approx. 30' wide by 30' long = 900 SF)
1100 lane-feet
Two 550' Lanes (10') = 1100 lane-feet
There will be 4 removable bollards at each end of road to prevent access
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**4c - Option 2: Goucher Connection - Goucher St/Old Bethel Rd Connection**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork	**LENGTH (MILE):** 0.44	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.9	$203,300.00	$177,117
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,710	$7.50	$12,825
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$250.00	$0
			SUBTOTAL		***$205,942***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$5,100
	TP & DT	3.0-8.0%	8.0%		$16,500
	Mobilization	8.0-10.0%	10.0%		$20,600
	Erosion Control	0.5-2.0%	2.0%		$4,100
	Contingency	30-40%	40.0%		$82,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$334,642***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$50,200
	Construction Engineering		10.0%		$33,500
			TOTAL PROJECT COST		**$418,000**

Assumptions:

Connection from the south end of Goucher to SE Old Bethel Rd.

This project will construct a new rural roadway section consisting of 2-10' Lanes and 2-2' shoulders and ditches. No curb, gutter, sidewalk, or enclosed drainage.

Earthwork estimated is to construct the proposed pavement section only (4" Asphalt on 6" Agg. Base) with a 20% increase for fill slopes.

4,600 lane-feet

Two 2,300' Lanes (10') = 4,300 lane-feet

There will be 4 removable bollards at each end of road to prevent access

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**4c - Option 3: OR 153 Connection - OR 153/Maple Ct. Connection**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	4/23/2014
KIND OF WORK:	Roadway, Earthwork,	**LENGTH (MILE):** 0.36	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.7	$203,300.00	$146,314
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,410	$7.50	$10,575
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$250.00	$0
			SUBTOTAL		***$172,889***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$4,300
	TP & DT	3.0-8.0%	8.0%		$13,800
	Mobilization	8.0-10.0%	10.0%		$17,300
	Erosion Control	0.5-2.0%	2.0%		$3,500
	Contingency	30-40%	40.0%		$69,200
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$280,989***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$42,100
	Construction Engineering		10.0%		$28,100
			TOTAL PROJECT COST		**$351,000**

Assumptions:

Connection from OR 153/Nursery St to Maple Ct. perpendicularly intersecting Lilac Ln. and SW Maple St.

This project will construct a new rural roadway section consisting of 2-10' Lanes, 2-2' shoulders and ditches. No curb, gutter, sidewalk, or enclosed drainage.

Earthwork estimated is to construct the proposed pavement section only (4" Asphalt on 6" Agg. Base) with 20% increase for fill slopes.

3,800 lane-feet

Two 1,900' Lanes (10') = 1,900 lane-feet

There will be 4 removable bollards at each end of road to prevent access

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: Oak Ave (From Church to 3rd)		**PREPARED BY:** C.Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Sidewalk, Curb, Gutter, and Striping		**LENGTH (MILE):** 0.21	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks	Mi.	0.10	$882,000.00	$91,875
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	1275	$4.00	$5,100
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Restripe Existing Roadway	LF	4050	$2.00	$8,100
6	New Signal	EA		$300,000.00	$0
7	Earthwork	CY		$7.50	$0
8	Traffic Calming	5-10%		-	$0
9	Pedestrian Crossing Assembly	EA	1.00	$37,200.00	$37,200
10	Bridges	SF		$150.00	$0
				SUBTOTAL	***$142,275***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$3,600
	TP & DT	3.0-8.0%	5.0%		$7,100
	Mobilization	8.0-10.0%	10.0%		$14,200
	Erosion Control	0.5-2.0%	2.0%		$2,800
	Contingency	30-40%	40.0%		$56,900
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$226,875***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$34,000
	Construction Engineering		10.0%		$22,700
			TOTAL PROJECT COST		**$284,000**

Assumptions:

- Improvements to occur on Oak Ave. from Church Ave. to 3rd St.
- Project will add bike lanes to existing roadway, construct new sidewalk and/or improvements, pedestrian crossing on OR 153/Nursery Ave (2-10' Lanes, 2-5' Bike Lanes, and 2-5' Sidewalks)
- Total quantity of curb and gutter/sidewalk modified to account for single side of road construction (unit cost is for both sides of street)
- Existing Roadway condition and widths adequate for proposed section except for segment 255' north of Church, only other new surfacing required is sidewalk
- Sidewalk Construction required on west side of Oak for 255' north of Church (east side sidewalk to be kept in placed and used) 5' of new pavement required on east side of street.
- No construction needed for the first 120' north of Nursery
- Sidewalk Construction required on west side of Oak for the remaining 120' to Sherman (east side sidewalk to be kept in place and used)
- Sidewalk construction required on west side of Oak for 520 ft from Sherman to Maddox (east side sidewalk to be kept in placed and used)
- No construction needed for the first 150' north of Maddox
- Sidewalk construction required for remaining 100 ft on both sides of the street
- Striping will consist of centerline and bike lane marking for the entire length
- Additional 10% of sidewalk length added to account for existing cracked sidewalk replacement
- ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: Oak Avenue from 3rd Avenue to Rice Lane (along Jellison)		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.34	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.34	$217,900.00	$73,459
3	New Local Roadway	SF	15600	$4.00	$62,400
4	Reconstruct Existing Roadway	SF	6600	$9.00	$59,400
5	Restripe Existing Roadway	LF	1870	$2.00	$3,740
6	Drainage Ditch	LF	1780	$25.00	$44,500
7	New Signal	EA		$300,000.00	$0
8	Earthwork	CY	1404	$7.50	$10,533
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$254,032***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$6,400
	TP & DT	3.0-8.0%	8.0%		$20,300
	Mobilization	8.0-10.0%	10.0%		$25,400
	Erosion Control	0.5-2.0%	2.0%		$5,100
	Contingency	30-40%	40.0%		$101,600
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2013		
			TOTAL CONSTRUCTION COST		***$412,832***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$61,900
	Construction Engineering		10.0%		$41,300
			TOTAL PROJECT COST		**$516,000**

Assumptions:

Improvements to occur on 3rd St. from Oak Ave. to Jellison St then north on Jellison from 3rd St. to Rice Ln.
Project will construct shared use path, widen existing pavement, and construct drainage ditch/street swale (2-11' Lanes, 1-8' Parking, 1-6' Ditch/Swale, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.
Existing Pavement will be utilized when applicable
Existing 3rd St segment is 20' wide and 330' long and needs reconstructed. Will need widened by 10' the entire length and the multi-use path will be constructed along the entire length
Existing Jellison St segment (100' north of 3rd) is 28' wide and 100' long. Will need widened by 2' the entire length and a multi-use path will be constructed along the entire length
Existing Jellison St segment (next 650' north) is 20' wide and 650' long. Will need widened by 10' the entire length and a multi-use path will be constructed along the entire length
Drainage ditch/swale will be 6' for entire length (1780-LF- Rosedell and Rice intesections excluded). Cost includes concrete curb and ditch excavation.
Striping will be single centerline strip only
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**Rice Lane from OR 99W/Trade Street to near Amity Vineyards Road**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, and Striping	**LENGTH (MILE):** 0.29	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.29	$217,900.00	$63,348
3	New Local Roadway	SF	10270	$4.00	$41,080
4	Existing Sidewalk Removal	SY	140	$5.00	$700
5	Restripe Existing Roadway	LF	1540	$2.00	$3,080
6	Drainage Ditch	LF	1540	$25.00	$38,500
7	New Signal	EA		$300,000.00	$0
8	Earthwork	CY	1120	$7.50	$8,400
9	Traffic Calming	5-10%		-	$0
10	Chain Link Fence Replacement	LF	220	$20.00	$4,400
11	Mod Block Wall Replacement	SF	140	$50.00	$7,000
12	Bridges	SF		$150.00	$0
	SUBTOTAL				***$166,508***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$3,300
	TP & DT	3.0-8.0%	8.0%		$13,300
	Mobilization	8.0-10.0%	10.0%		$16,700
	Erosion Control	0.5-2.0%	2.0%		$3,300
	Contingency	30-40%	40.0%		$66,600
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
	TOTAL CONSTRUCTION COST				***$269,708***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$40,500
	Construction Engineering		10.0%		$27,000
	TOTAL PROJECT COST				**$337,000**

Assumptions:

Improvements will occur on Rice Ln. from OR 99W to 530' east of Jellison St. intersection.
Project will construct shared use path, existing pavement widening, and construct drainage ditch/swale
(2-11' Lanes, 1-8' Parking, 1-6' Ditch/Swale, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed pavement sections.
(New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6',
but additional stormwater analysis will be required.
Existing Pavement will be utilized
Rice Ln from Jellison to 800' west is 24' wide with no sidewalks. This entire length will need widened by 6'
Remaining 200' of Rice Ln is 24' wide with a sidewalk on the north side of St. This entire length will need
widening by 6'. The sidewalk will need to be removed and replaced with a new drainage ditch/swale and/or path.
Rice Ln from Jellison to 530' east is 22' wide with no sidewalks. This entire length will need widened by 8'
Due to narrow ROW on the last 200 LF of Rice Lane approaching OR 99W, the Multi Use path is assumed to be only 10' wide
(length of the quantity reduced by 16% to account for reduced width)
Drainage ditch/Swale assumed to be 6' wide for entire length (1535-LF). Cost includes concrete curb and ditch excavation.
A Multi-Use Path will be constructed over the entire length (1535-LF).
Striping will be single centerline stripe only
A mod block wall will need to be replaced in from of the first two houses east of OR 99W on the north side of St.
Approximately 140 SF, assuming 70 ' length and 2' height.
220 LF of 5' chain link fence will need to be replaced in front of school playground.
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: OR 153/5th St (from OR 99W/Trade St to Park Entrance)		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.20	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.08	$430,000.00	$32,250
2	Multi-use Path	Mi.	0.20	$217,900.00	$43,745
3	New Roadway	SF	1470	$7.00	$10,290
4	Existing Sidewalk Removal	SY	380	$5.00	$1,900
5	Existing Roadway Removal	SY	380	$8.00	$3,040
6	Restripe Existing Roadway	LF	1060	$2.00	$2,120
7	Railroad Crossing Improvements	LF	48	$1,000.00	$48,000
8	Drainage Ditch	LF	2120	$25.00	$53,000
9	Earthwork	CY	640	$7.50	$4,803
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$199,148***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$4,000
	TP & DT	3.0-8.0%	8.0%		$15,900
	Mobilization	8.0-10.0%	10.0%		$19,900
	Erosion Control	0.5-2.0%	2.0%		$4,000
	Contingency	30-40%	40.0%		$79,700
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$322,648***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$48,400
	Construction Engineering		10.0%		$32,300
			TOTAL PROJECT COST		**$403,000**

Assumptions:

Improvements will occur on OR 153/5th St. from OR 99W to west to the park entrance.
Project will construct sidewalk improvements, construct shared use path, drainage ditch/swale, and improve rail crossing (1-12' Lane, 1-13' Lane, 1-8' Parking, 2-6' Ditch/Swales, 1-6' Sidewalk, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed paved multi use path (2" AC over 12" Agg. Base) and roadway (8" AC over 12" Agg. Base)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction (unit cost is for both sides of street)
Due to the fact of this segment being an ODOT facility, the proposed section will need to be revised to meet ODOT Standards
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.
The first 300' west of OR 99W is 50' wide and will have pavement and existing sidewalk removed north side of St. (Total of 12' of pavement width (for path construction) and 6' of sidewalk width (for swales)) Extg. Sidewalk to be used
The next 265' will have 6' of pavement removal and 6' of sidewalk removal. The existing sidewalk on the north side of St will be kept in place
The final 490' has 30' of pavement and no sidewalks will need widened by 3'. All existing pavement will be utilized and new sidewalk, multi use path, and drainage ditch/swales will be constructed.
Drainage ditch/Swale assumed to be 6' wide for entire length (2120-LF)
One new RR crossing will be installed consisting of new concrete panels over entire span of crossing (no signage) Parking lane excluded from crossing width.
Striping will consist of one centerline stripe

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: Stanley St/1st St (from OR 153/5th St to OR 99W/Trade St)		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.39	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Enclosed Drainage	Mi.	0.39	$882,000.00	$347,455
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	59460	$4.00	$237,840
4	Existing Sidewalk Removal	SY	480	$5.00	$2,400
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	4320	$2.00	$8,640
7	Railroad Crossing Improvements	LF	48	$1,000.00	$48,000
8	Drainage Ditch	LF		$25.00	$0
9	Earthwork	CY	1835	$7.50	$13,764
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.	0	$260,000.00	$102,424
12	Bridges	SF		$150.00	$0
	SUBTOTAL				***$760,523***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$15,200
	TP & DT	3.0-8.0%	8.0%		$60,800
	Mobilization	8.0-10.0%	10.0%		$76,100
	Erosion Control	0.5-2.0%	2.0%		$15,200
	Contingency	30-40%	40.0%		$304,200
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
	TOTAL CONSTRUCTION COST				***$1,232,023***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$184,800
	Construction Engineering		10.0%		$123,200
	TOTAL PROJECT COST				**$1,540,000**

Assumptions:

- Improvements will occur on Stanley St. from OR 153 to the north to 1st St. and continue on 1st St. east to OR 99W
- Project will construct sidewalks, drainage ditches/swales, improve the rail crossing on 1st St, and add bike lanes (2-12' Lanes, 2-6' Bike Lanes, 2-8' Parking, and 2-5' Sidewalks)
- Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base)
- First 80' north of 5th St. is 25' wide, will need widened by 27' over the entire length. (Extg. Sidewalk to be removed)
- Next 620' north is 25' wide and needs widened 27' over entire length. New sidewalks to be constructed on both sides
- Next 1100' is 22' wide and needs widened by 30' over the entire length. New sidewalks to be constructed on both sides
- Remaining 280' is 25' wide and will need widened by 27' over the entire length. New sidewalks to be constructed.
- There will be a sidewalks, curb and gutter, with enclosed drainage constructed on both sides over the entire length of segment (2080-LF)
- RR crossing improvements will consist of concrete panels across the width of the crossing (no signage or gates), however, ODOT Rail may require the installation of an automatic gate. Crossing width excludes parking lanes parking lanes
- Striping will be a centerline stripe and two edge/bike lane stripes.
- ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**Church Ave (from OR 99W/Trade St to Jellison)**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Striping, Sidewalk, Curb	**LENGTH (MILE):** 0.18	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.06	$430,000.00	$27,282
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	5765	$4.00	$23,060
4	Existing Sidewalk Removal	SY	185	$5.00	$925
5	Existing Roadway Removal	SY	185	$8.00	$1,480
6	Restripe Existing Roadway	LF	960	$2.00	$1,920
7	Bicycle Shared Lane Marking	LF	960	$8.00	$7,680
8	Earthwork	CY	59	$7.50	$445
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$62,792***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,300
	TP & DT	3.0-8.0%	8.0%		$5,000
	Mobilization	8.0-10.0%	10.0%		$6,300
	Erosion Control	0.5-2.0%	2.0%		$1,300
	Contingency	30-40%	40.0%		$25,100
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$101,792***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$15,300
	Construction Engineering		10.0%		$10,200
			TOTAL PROJECT COST		**$127,000**

Assumptions:

Improvements will occur on Church Ave. from OR 99W to Jellison St.
Project will add shared lane markings, widen/add/retrofit sidewalk where necessary
(2-11' Lanes, 1-8' Parking Lane, 1-5' Sidewalk)
Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction
(unit cost is for both sides of street)
No drainage facilities considered
The first 290' east of OR 99W of roadway and sidewalk will be retrofitted to the proposed cross section.
No improvements needed.
The next 325' will be widened by widened by 5' of new roadway pavement, will have the existing 5' sidewalk
removed and replaced.
The remaining 345' will be widened by 12' and have a new sidewalk constructed.
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**Sherman Ave (from Oak to OR 99W/Trade St)**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	4/23/2014
KIND OF WORK:	Roadway, Striping, Sidewalk	**LENGTH (MILE):** 0.12	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.10	$430,000.00	$41,534
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	580	$4.00	$2,320
4	Existing Sidewalk Removal	SY		$5.00	$0
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	630	$2.00	$1,260
7	Railroad Crossing Improvements	LF		$1,000.00	$0
8	Bicycle Shared Lane Marking	LF	630	$8.00	$5,040
9	Earthwork	CY		$7.50	$0
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$50,154***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,000
	TP & DT	3.0-8.0%	8.0%		$4,000
	Mobilization	8.0-10.0%	10.0%		$5,000
	Erosion Control	0.5-2.0%	2.0%		$1,000
	Contingency	30-40%	40.0%		$20,100
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$81,254***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$12,200
	Construction Engineering		10.0%		$8,100
			TOTAL PROJECT COST		**$102,000**

Assumptions:

Improvements will occur on Sherman Ave. from OR 99W east to Oak Ave.
Project will add shared lane markings (2-10' Lanes, 2-7' Parking Lane, 2-5' Sidewalk)
70' east of 99W is 34' wide with sidewalk on both sides (no construction needed)
Next 220' is 34' wide with sidewalk on the north side of the St. There is a partially deteriorated sidewalk on the south side of the St. for part of the length that will be replaced and a new sidewalk constructed for entire length
Final 290' is 32' wide and will need widened by 2' and sidewalk construction on south side of St.
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**S. Jellison Ave (from Roth to Church)**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	4/23/2014
KIND OF WORK:	Roadway, Sidewalk, Curb, Earthwork, Striping	**LENGTH (MILE):** 0.20	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.09	$430,000.00	$37,136
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	8256	$4.00	$33,024
4	Existing Sidewalk Removal	SY		$5.00	$0
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	1032	$2.00	$2,064
7	Railroad Crossing Improvements	LF		$1,000.00	$0
8	Bicycle Shared Lane Marking	LF	1032	$8.00	$8,256
9	Earthwork	CY	255	$7.50	$1,911
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$82,391***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,600
	TP & DT	3.0-8.0%	8.0%		$6,600
	Mobilization	8.0-10.0%	10.0%		$8,200
	Erosion Control	0.5-2.0%	2.0%		$1,600
	Contingency	30-40%	40.0%		$33,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$133,391***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$20,000
	Construction Engineering		10.0%		$13,300
			TOTAL PROJECT COST		**$167,000**

Assumptions:

Improvements will occur on Jellison Ave from Church Ave. south to Roth Ave.
Project will add shared lane markings, widen/retrofit/add sidewalk where necessary, widen existing roadway (2-11' Lanes, 1-8' Parking, and 1-5' Sidewalk)
Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction (unit cost is for both sides of street)
No drainage facilities considered
Existing Sidewalk for first 120' south of Church will be utilized.
The existing roadway is 22' wide for the entire segment and will be widened 8'
The existing roadway will be striped with a single centerline and shared lane arrows
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**OR 153/ Nursery Ave. (from 99W to Goucher)**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Sidewalk, Curb, Earthwork, Striping	**LENGTH (MILE):** 0.25	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks, With Drainage	Mi.	0.25	$430,000.00	$105,871
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	33100	$7.00	$231,700
4	Existing Sidewalk Removal	SY	10290	$5.00	$51,450
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	3900	$2.00	$7,800
7	Railroad Crossing Improvements	LF		$1,000.00	$0
8	Bicycle Shared Lane Marking	LF		$8.00	$0
9	Earthwork	CY	2050	$7.50	$15,375
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.	0.25	$235,000.00	$57,860
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$470,056***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$9,400
	TP & DT	3.0-8.0%	8.0%		$37,600
	Mobilization	8.0-10.0%	8.0%		$37,600
	Erosion Control	0.5-2.0%	2.0%		$9,400
	Contingency	30-40%	40.0%		$188,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$752,056***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$112,800
	Construction Engineering		10.0%		$75,200
			TOTAL PROJECT COST		**$940,000**

Assumptions:

Improvements will occur on PR 153/Nursery Ave from OR 99W east to Goucher St.
Project will construct new and/or reconstruct existing sidewalks, widen existing pavement for bike lanes (2-12' Lanes, 2-8' Parking, 2-6' Bike Lanes, and 2-5' Sidewalks)
Only earthwork estimated is to construct the proposed pavement section. (8" AC over 10" Agg. Base)
First 280' east of OR 99W is 30' wide with sidewalks on both sides of St. There is a 10-12' grass buffer. The extg. sidewalk will need to be removed on one side of the St. and the pavement will need widened by 16'.
Next 280' is 22' wide with sidewalks and 13' grass/gravel buffer. The pavement will need widened by 24' and the and the sidewalks will need to be removed and replaced (12' width)
Next 300' is 24' wide with sidewalks and gravel buffers on both sides. Pavement will need widened by 28' and the sidewalks will need removed and replaced.
Final 450' is 22' wide with a sidewalk on the north side of the St. The extg sidewalk will need to be removed and the pavement will need widened by 30'.
The existing roadway will be striped with a centerline and two edge/bike lane markings.
Landscaped buffers will be constructed on one side of the St., assumed half of the total segment length.
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: Getchell/Oak Avenue from Church to 3rd		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Sidewalk, Curb, and Striping		**LENGTH (MILE):** 0.21	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks, No Drainage	Mi.	0.09	$430,000.00	$39,905
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF		$7.00	$0
4	Existing Sidewalk Removal	SY	360	$5.00	$1,800
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	3326	$2.00	$6,653
7	Active Railroad Crossing	EA		$15,000.00	$0
8	Bicycle Shared Lane Marking	LF		$8.00	$0
9	Earthwork	CY		$7.50	$0
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$48,358***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,000
	TP & DT	3.0-8.0%	5.0%		$2,400
	Mobilization	8.0-10.0%	8.0%		$3,900
	Erosion Control	0.5-2.0%	2.0%		$1,000
	Contingency	30-40%	40.0%		$19,300
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$75,958***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$11,400
	Construction Engineering		10.0%		$7,600
			TOTAL PROJECT COST		**$95,000**

Assumptions:

Improvements will occur on Getchell Ave. from Church Ave. to Woodson Ave. and on Woodson Ave from Getchell Ave. east to Oak ave.

Project will construct new and/or reconstruct existing sidewalks, and stripe for new lane configurations (2-10' to 12' Lanes, 2-5' to 6' Bike Lanes, and 2-5' Sidewalks)

First 200' north of Church Ave will require sidewalk construction on the west side

220' north of OR153/Nursery St. is 32'-34' wide and has sidewalk on both sides, no construction required

230' north of Sherman Ave. is 32' wide with sidewalk on the east side of the St. Sidewalk will be constructed on the west side of the St.

290' east of Getchell Ave to Oak Ave is 32' wide with sidewalk on both sides of St. The first 60' of sidewalk on the north side of the St is deteriorated and needs replaced

The existing roadway will be striped with a centerline and two edge/bike lane markings.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**Woodson Ave (from Oak to OR 99W/Trade St)**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	4/23/2014
KIND OF WORK:	Roadway, Sidewalk, Striping	**LENGTH (MILE):** 0.12	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.08	$430,000.00	$33,797
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	580	$4.00	$2,320
4	Existing Sidewalk Removal	SY	1740	$5.00	$8,700
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	620	$2.00	$1,240
7	Active Railroad Crossing	EA		$15,000.00	$0
8	Bicycle Shared Lane Marking	LF	620	$8.00	$4,960
9	Earthwork	CY		$7.50	$0
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$51,017***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,000
	TP & DT	3.0-8.0%	8.0%		$4,100
	Mobilization	8.0-10.0%	10.0%		$5,100
	Erosion Control	0.5-2.0%	2.0%		$1,000
	Contingency	30-40%	40.0%		$20,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$82,617***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$12,400
	Construction Engineering		10.0%		$8,300
			TOTAL PROJECT COST		**$103,000**

Assumptions:

Improvements will occur on Woodson Ave. from OR 99W to Oak Ave.
Project will add shared lane markings (2-10' Lanes, 2-7' Parking Lane, 2-5' Sidewalk)
Existing 125' east of 99W is 34' wide with sidewalk on north side. Sidewalk construction required on south side
Existing 160' is 34' wide with sidewalk on both sides(no construction needed)
Existing 290' is 32' wide with sidewalk on both sides. The sidewalk will need removed on one side of the St and will need widened by 2' over the entire length and new sidewalk construction
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: Oak Ave (from 3rd to Rice (Rosedell to Rice Multi-Use Path Only))		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.29	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.29	$217,900.00	$62,316
3	New Local Roadway	SF	4980	$4.00	$19,920
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Restripe Existing Roadway	LF	830	$2.00	$1,660
6	Drainage Ditch	LF	830	$25.00	$20,750
7	New Signal	EA		$300,000.00	$0
8	Earthwork	CY	1100	$7.50	$8,250
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.	0.13	$260,000.00	$33,485
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
	SUBTOTAL				***$146,381***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$2,900
	TP & DT	3.0-8.0%	5.0%		$7,300
	Mobilization	8.0-10.0%	10.0%		$14,600
	Erosion Control	0.5-2.0%	2.0%		$2,900
	Contingency	30-40%	40.0%		$58,600
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
	TOTAL CONSTRUCTION COST				***$232,681***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$34,900
	Construction Engineering		10.0%		$23,300
	TOTAL PROJECT COST				**$291,000**

Assumptions:

Improvements will occur on Oak Ave from 3rd St. to Rosedell St. and will creat a new path from Rosedell Rice Ln.
Project will construct shared use path, widen existing pavement, and construct drainage ditch/street swale
(2-11' Lanes, 1-8' Parking, 1-4' to 6' Swale, and 1-10' to 12' Paved Path)
Only earthwork estimated is to construct the proposed pavement sections with a 20% increase for fill slopes on the new path.
(New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6',
but additional stormwater analysis will be required.
Existing Pavement will be utilized
Existing Oak Ave. segment is 24' wide and 830' long. Will need widened by 6' the entire length and the multi-use
path will be constructed along the entire length
The segment from Rosedell to Rice will consist of only a multi-use path (680-LF).
Drainage ditch/swale will be 6' for entire length of the Oak Ave segment (not on Rosedell/Rice segment). Cost includes
concrete curb and ditch excavation.
Striping will be single centerline strip only
Street lighting inlcuded at 200' spacing for the Rosedell/Rice segment
ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 4th St. (from US 99W to Stanley St.)		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.12	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.10	$217,900.00	$21,873
3	New Local Roadway	SF	2600	$4.00	$10,400
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Restripe Existing Roadway	LF	623	$2.00	$1,246
6	Drainage Ditch	LF	530	$25.00	$13,250
7	Railroad Crossings Improvements	LF	40	$1,000.00	$40,000
8	Earthwork	CY	355	$7.50	$2,663
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
				SUBTOTAL	***$89,432***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,800
	TP & DT	3.0-8.0%	5.0%		$4,500
	Mobilization	8.0-10.0%	10.0%		$8,900
	Erosion Control	0.5-2.0%	2.0%		$1,800
	Contingency	30-40%	40.0%		$35,800
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$142,232***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$21,300
	Construction Engineering		10.0%		$14,200
			TOTAL PROJECT COST		**$178,000**

Assumptions:

Project will construct shared use path, widen existing pavement, and construct drainage ditch/street swale (2-11' Lanes, 1-8' Parking, 1-6' Swale, and 1-10 to 12' Paved Path)

Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)

All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.

Existing Pavement will be utilized

First 270' of 4th St. is 36' wide with a 6' sidewalk on both sides of St. and 8' landscaped buffers between the sidewalk and roadway. The extg. sidewalk on the north side of the St will be removed along with 4' of extg. roadway

260' west of RR is 20' wide with gravel shoulders on both sides of St. The pavement will need widened by 10'.

A multi-use path will be constructed on the entire length of 4th St (except for RxR)

Drainage ditch/swale will be 6' for entire length of the 4th St (except for RxR). Cost includes concrete curb and ditch excavation.

The RR crossing width is the section width minus the parking lane.

Striping will be single centerline strip only

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: OR 99W/Trade St.. (from 3rd St. to Rice Ln.)		**PREPARED BY:** C. Clausen	**DATE:** 4/17/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Sidewalk, Curb and Gutter, and Striping		**LENGTH (MILE):** 0.28	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.27	$882,000.00	$237,205
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	6230	$7.00	$43,610
4	Existing Sidewalk Removal	SY	11360	$5.00	$56,800
5	Restripe Existing Roadway	LF	4470	$2.00	$8,940
6	Drainage Ditch	LF		$25.00	$0
7	Railroad Crossings Improvements	SF		$1,000.00	$0
8	Earthwork	CY	390	$7.50	$2,925
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	SF	14200	$5.60	$79,520
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$429,000***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$8,600
	TP & DT	3.0-8.0%	8.0%		$34,300
	Mobilization	8.0-10.0%	10.0%		$42,900
	Erosion Control	0.5-2.0%	2.0%		$8,600
	Contingency	30-40%	40.0%		$171,600
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$695,000***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$104,200
	Construction Engineering		10.0%		$69,500
			TOTAL PROJECT COST		**$869,000**

Assumptions:

Project will widen existing pavement, and construct new sidewalks and landscaped buffers (2-14' Lanes, 2-6' Parking, 1-6' Shoulder/Bike Lanes, and 2-6' Sidewalks)

Only earthwork estimated is to construct the proposed pavement sections. (New Roadway: 8" AC over 12" Agg. Base)

Existing Pavement will be utilized

First 430' of OR 99W is 38' wide with a 4' sidewalk on both sides of St. and 7'-10' landscaped buffers between the sidewalk and roadway. The extg. sidewalk will be removed and replaced and the extg. pavement will be widened by 1' on each side of the road.

340' north of 2nd St. is 35' wide with a 4' sidewalk on both sides of St. and 10'-12' landscaped buffers between the sidewalk and sidewalk and roadway. The extg. sidewalk will be removed and replaced and the extg. pavement will be widened by 5'

650' north of Rosedell varies in width from 44' to 35'. On east side of the St. there is a 4' sidewalk and a grass buffer (4'-10" wide) On th west side of the St. there is a 4' sidewalk and a grass buffer (10'-13'). Assuming that the pavement will need widened by an avg. of 3' over entire length and the extg. Sidewalks will be removed and replaced.

Striping will be single centerline and bike lane/edge lines only

ROW impacts are anticipated, but the costs are not included in this estimate.

REGION 2 SCOPING BID SUMMARY & ESTIMATE

OREGON STATE HIGHWAY DIVISION

2008 Spec.
Ver. Nov.-2012

Type T=Proj.

PROJECT ID No.	OR153 Slat Creek (Ash Swale) Br. 05041				LANE MI.	COUNTY	M.P. to M.P.
1518B15	#153/ OR153				0.16	Yamhill	5.8 to 5.98
Key Number	Structure, Grading and Paving,			LENGTH	DATE	PHONE NO.	ROADWAY DESIGNER
XXXXX				0.32	4/19/13	503-986-6922	Eliseo Lemus

	COST CATEGORY	Est. Cost x $1,000	Inflated Costs x $1,000		Infl. Fiscal Yr.	Inflation Fctr.	Annual
Preliminary Engineering		$ 375.0	$ 390.0	PE	2014	1.0400	Year & Rate
Right of Way		$ 10.0	$ 10.8	RW	2015	1.0816	Factors
Utility Reimbursement		$ -	$ -	UR	2016	1.1140	
Mobilization		$ 48.5	$ 55.7	CN	2017	1.1475	FYI
Roadway		$ 133.3	$ 152.9	CN		1.1475	2013 > 1.000
Structures		$ 291.8	$ 334.8	CN		1.1475	2014 > 1.0400
Signals		$ -	$ -	CN		1.1475	2015 > 1.0816
Illumination		$ -	$ -	CN		1.1475	2016 > 1.1140
Temporary Protection		$ 40.0	$ 45.9	CN		1.1475	2017 > 1.1475
Construction Contingencies		$ 188.0	$ 215.7	CN		1.1475	2018 > 1.1819
Construction Engineering		$ 82.4	$ 94.6	CE		1.1475	
AC Bon., Pub. Anc., & Anticip.		$ 27.9	$ 32.1	CN		1.1475	Cost / Lane Mi. Today
Other		$ 20.0	$ 22.9	CN		1.1475	$7,605,512
SUBTOTAL CONSTRUCTION		$ 831.9	$ 954.6	CN			Cost / Lane Mi. Inflated
	Check from bottom of page				Programmed Amt.		$8,471,094
TOTAL	$ 1,216,882	$ 1,216.9	$ 1,355.4		$ 716,900		Project Tracking

OR153 Slat Creek (Ash Swale) Br. 05041 http://itouchmap.com/latlong.html How to select Lat & Lon

Bid Item Number	ITEM	Latitude	Longitude	UNIT	AMOUNT	UNIT COST	TOTAL
		N 45° 06' 57"	W 123° 12' 48"				
MOBILIZATION AND TRAFFIC CONTROL							
0210-0100000A	MOBILIZATION			LS	All	10.00%	$48,500
0225-0100000A	TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC			LS	All	8.99%	$40,000
EROSION AND SEDIMENT CONTROL							
0280-0100000A	EROSION CONTROL			LS	All	1.00%	$4,363
0290-0100000A	POLLUTION CONTROL PLAN			LS	From Lookup Table		
ROADWORK							
0305-0100000A	CONSTRUCTION SURVEY WORK			LS	All	1.00%	$4,363
0310-0106000A	REMOVAL OF STRUCTURES AND OBSTRUCTIONS			LS	All	$2,500	$2,500
0310-0100000F	REMOVAL OF PIPES			FOOT		$13	$0
0310-0101000F	REMOVAL OF CURBS			FOOT		$5.00	$0
0310-0102000J	REMOVAL OF WALKS AND DRIVEWAYS			SQYD		$15.00	$0
0310-0103000J	REMOVAL OF SURFACINGS			SQYD		$9.00	$0
0310-0113000A	REMOVAL OF GUARDRAIL			FOOT	0	$6.00	$0
0320-0100000A	CLEARING AND GRUBBING			ACRE	1.0	$5,000	$5,000
0330-0101000K	DITCH EXCAVATION			CUYD		$20	$0
0330-0102000K	FOUNDATION EXCAVATION			CUYD		$15.00	$0
0330-0103000K	TOE TRENCH EXCAVATION			CUYD		$17.00	$0
0330-0105000K	GENERAL EXCAVATION		(For Large Quant. Look Up $)	CUYD		$12.00	$0
0330-0123000K	EMBANKMENT IN PLACE		(For Large Quant. Look Up $)	CUYD		$12.00	$0
0330-0126000K	STONE EMBANKMENT		(For Large Quant. Look Up $)	CUYD	500	$20.00	$10,000
0331-0109000J	18 INCH SUBGRADE STABILIZATION			SQYD	396	$19.00	$7,532
0331-0112000J	24 INCH SUBGRADE STABILIZATION			SQYD		$25.40	$0
0340-0100000Q	WATERING			MGAL		$30.00	$0
0350-0104000J	RIPRAP GEOTEXTILE, TYPE 2			SQYD		$2.00	$0
0350-0105000J	SUBGRADE GEOTEXTILE			SQYD	396	$1.00	$396
0390-0105000K	LOOSE RIPRAP, CLASS 50			CUYD		$60.00	$0
0390-0108000K	LOOSE RIPRAP, CLASS 100			CUYD		$65.00	$0
0390-0111000K	LOOSE RIPRAP, CLASS 200			CUYD		$75.00	$0
0390-0114000K	LOOSE RIPRAP, CLASS 700			CUYD		$125.00	$0
DRAINAGE AND SEWERS							
0430-0100040F	4 INCH DRAIN PIPE			FOOT		$9	$0
0430-0100060F	6 INCH DRAIN PIPE			FOOT		$10	$0
0430-0100080F	8 INCH DRAIN PIPE			FOOT	0	$14	$0
0445-010012AF	12 INCH CULVERT PIPE, 5 FT DEPTH			FOOT	100	$42	$4,200
0445-010018AF	18 INCH CULVERT PIPE, 5 FT DEPTH			FOOT		$52	$0
0445-010024AF	24 INCH CULVERT PIPE, 5 FT DEPTH			FOOT		$70	$0
0445-010036AF	36 INCH CULVERT PIPE, 5 FT DEPTH			FOOT		$85	$0
0445-010036BF	36 INCH CULVERT PIPE, 10 FT DEPTH			FOOT		$115	$0
0445-010048AF	48 INCH CULVERT PIPE, 5 FT DEPTH			FOOT		$130	$0
0445-010048BF	48 INCH CULVERT PIPE, 10 FT DEPTH			FOOT		$135	$0
0445-035012AF	12 INCH STORM SEWER PIPE, 5 FT DEPTH			FOOT		$43	$0
0445-035015AF	15 INCH STORM SEWER PIPE, 5 FT DEPTH			FOOT		$43	$0
0445-035018AF	18 INCH STORM SEWER PIPE, 5 FT DEPTH			FOOT		$54	$0
0445-035024BF	24 INCH STORM SEWER PIPE, 10 FT DEPTH			FOOT		$80	$0
0445-035036BF	36 INCH STORM SEWER PIPE, 10 FT DEPTH			FOOT		$180	$0
0445-035048BF	48 INCH STORM SEWER PIPE, 10 FT DEPTH			FOOT		$200	$0
0460-0100000J	PAVED CULVERT END SLOPES			SQFT		$22	$0
0470-0105000E	CONCRETE MANHOLES, SHALLOW			EACH		$3,100	$0
0470-0106000E	CONCRETE MANHOLES, LARGE PRECAST			EACH		$9,900	$0
0470-0307000E	CONCRETE INLETS, TYPE CG-2			EACH		$1,400	$0
0470-0315000E	CONCRETE INLETS, TYPE G-2			EACH		$1,285	$0
0470-0319000E	CONCRETE INLETS, TYPE G-2MA			EACH		$1,875	$0
0480-0100000F	DRAINAGE CURBS			FOOT		$8.00	$0
0490-0100000E	ADJUSTING BOXES			EACH		$250	$0
0490-0105000E	ADJUSTING INLETS			EACH		$675	$0
0490-0121000E	MAJOR ADJUSTMENT OF MANHOLES			EACH		$1,200	$0
0495-0100000J	TRENCH RESURFACING			SQYD		$60	$0

OR153 Slat Creek (Ash Swale) Br. 05041			http://itouchmap.com/latlong.html	How to select Lat & Lon			
Bid Item Number	ITEM	Latitude	Longitude	UNIT	AMOUNT	UNIT COST	TOTAL
		N 45° 06' 57"	W 123° 12' 48"				
BRIDGES (REQUEST ESTIMATES FROM BRIDGE SECTION)							
	(Use raw Bid Item cost from bridge designer here, Not Inflated cost.) (List Bridge Name AND No.) (List Each Wall Separate)						
	BRIDGE (North Yamhill River & No 00441)				1	$263,750	$263,750
	Bridge Deck PPC	(Show Size & $ / Sq. Ft. Here)			100%		$0
	Bridge Rails	(Show Size & $ / Sq. Ft. Here)			100%		$0
	Bridge End Panels	(Show Size & $ / Sq. Ft. Here)			100%		$0
	Guardrail GR Trasition connection conc. Blocks				4	$7,000	$28,000
	RETAINING WALLS (Wall #)				100%		$0
	Wall #1 (& Location)	(Show Size & $ / Sq. Ft. Here)			100%		$0
	Wall #2 (& Location)	(Show Size & $ / Sq. Ft. Here)			100%		$0
	SOUND WALLS						
	Wall #1 (& Location)	(Show Size & $ / Sq. Ft. Here)			100%		$0
	LARGE CULVERTS				100%		$0
0503-0101000J	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP			SQYD		$3.00	$0
0503-0102000J	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP			SQYD		$9.00	$0
BASES							
0620-0104000J	COLD PLANE PAVEMENT REMOVAL, 0 - 2 INCHES DEEP **(Butt Grind Proj. Ends)**			SQYD		$2.50	$0
0620-0107000J	COLD PLANE PAVEMENT REMOVAL, 0 - 4 INCHES DEEP			SQYD		$3.50	$0
0620-0120000J	COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP			SQYD	2400	$1.50	$3,600
0620-0122000J	COLD PLANE PAVEMENT REMOVAL, 3 INCHES DEEP			SQYD		$1.80	$0
0620-0123000J	COLD PLANE PAVEMENT REMOVAL, 4 INCHES DEEP			SQYD		$3.00	$0
0640-0101000M	AGGREGATE SHOULDERS			TON		$18.00	$0
0641-0102000M	AGGREGATE BASE			TON	400	$14.00	$5,600
WEARING SURFACES							
0730-0100000M	EMULSIFIED ASPHALT FOR TACK COAT			TON	0.8	$350.00	$282
0745-0301000M	LEVEL 3, 3/4 INCH DENSE HMAC		(use 5.8% Oil)	TON		$22.00	$0
0745-0302000M	LEVEL 3, 1/2 INCH DENSE HMAC		(Use 6.0% Oil)	TON	359	$24.00	$8,607
0745-0331000M	LEVEL 3, 1/2 INCH DENSE HMAC IN LEVELING		(Use 6.0% Oil)	TON		$24.00	$0
0745-0341000M	LEVEL 3, 1/2 INCH DENSE HMAC IN TEMPORARY		(Use 6.0% Oil)	TON		$22.00	$0
0745-0402000M	LEVEL 4, 1/2 INCH DENSE HMAC			TON		$28.00	$0
0745-0422000M	LEVEL 4, 1/2 INCH DENSE LIME TREATED HMAC			TON		$24.00	$0
0745-0431000M	LEVEL 4, 1/2 INCH DENSE HMAC IN LEVELING			TON		$24.00	$0
0745-0620000M	PG 64-22 ASPHALT IN HMAC			TON	21.5	$625.00	$13,449
0745-0640000M	PG 70-22 ASPHALT IN HMAC			TON	0.0	$625.00	$0
0745-0642000M	PG 70-28 ASPHALT IN HMAC			TON		$695.00	$0
0748-0110000J	18 INCH ASPHALT CONCRETE PAVEMENT REPAIR		(Was Surfacing Stabilization)	SQYD		$31.00	$0
0748-0114000J	24 INCH ASPAHLT CONCRETE PAVEMENT REPAIR		(Was Surfacing Stabilization)	SQYD		$41.00	$0
0748-0119000J	36 INCH ASPHALT CONCRETE PAVEMENT REPAIR		(Was Surfacing Stabilization)	SQYD		$48.00	$0
0749-0100000E	EXTRA FOR ASPHALT APPROACHES			EACH	5	$370.00	$1,850
0749-0106000J	EXTRA FOR ASPHALT WALKS			SQFT		$5.00	$0
0749-0108000J	EXTRA FOR ASPHALT SLOPE PAVING			SQFT		$3.00	$0
0756-0117000J	PLAIN CONCRETE PAVEMENT, DOWELED, 10 INCH THICK			SQYD		$60.00	$0
0759-0103000F	CONCRETE CURBS, CURB AND GUTTER			FOOT		$14.00	$0
0759-0110000F	CONCRETE CURBS, STANDARD CURB			FOOT		$9.00	$0
0759-0122000J	CONCRETE ISLANDS			SQFT		$8.00	$0
0759-0126000J	CONCRETE DRIVEWAYS			SQFT		$7.00	$0
0759-0128000J	CONCRETE WALKS			SQFT		$5.00	$0
0759-0153000E	CONCRETE SIDEWALK RAMPS			EACH		$1,500.00	$0
0759-9Z90000E	TRUNCATED DOMES			EACH		$300.00	$0

OR153 Slat Creek (Ash Swale) Br. 05041			http://itouchmap.com/latlong.html	How to select Lat & Lon			
Bid Item Number	ITEM	Latitude	Longitude	UNIT	AMOUNT	UNIT COST	TOTAL
		N 45° 06' 57"	W 123° 12' 48"				
PERMANENT TRAFFIC CONTROL AND GUIDANCE DEVICES							
0810-0103000F	GUARDRAIL, TYPE 2A, WEATHERIZED			FOOT		$20.00	$0
0810-0104000F	GUARDRAIL, TYPE 2A			FOOT	538	$16.50	$8,869
0810-0107000F	GUARDRAIL, TYPE 3			FOOT	50	$45.00	$2,250
0810-0109000F	GUARDRAIL, TYPE 4			FOOT		$35.00	$0
0810-0120000E	GUARDRAIL ANCHORS, TYPE 1 MODIFIED			EACH	6	$510.00	$3,060
0810-0122000E	GUARDRAIL END PIECES, TYPE B			EACH	3	$85.00	$255
0810-0123000E	GUARDRAIL END PIECES, TYPE C			EACH		$125.00	$0
0810-0126000E	GUARDRAIL TRANSITION			EACH	4	$1,820.00	$7,280
0810-0129000E	GUARDRAIL TERMINALS, NON-FLARED			EACH	1	$2,120.00	$2,120
0810-0130000E	GUARDRAIL TERMINALS, FLARED			EACH		$1,900.00	$0
0810-0133000E	EXTRA FOR 8 FOOT POSTS			EACH		$23.00	$0
0810-0134000E	EXTRA FOR 11 FOOT POSTS			EACH		$45.00	$0
0810-9Z90000E	EXTRA FOR HAND DUG CABLE BARRIER POSTS			EACH		$100.00	$0
0811-0101000F	CABLE BARRIER, TEST LEVEL 3			FOOT		$8.00	$0
0811-0103000E	CABLE BARRIER TERMINALS			EACH		$3,500.00	$0
0811-0104000E	CABLE BARRIER GUARDRAIL CONNECTIONS			EACH		$5,000.00	$0
0812-0101000F	ADJUSTING GUARDRAIL			FOOT		$3.50	$0
0820-0100000F	CONCRETE BARRIER			FOOT		$42.00	$0
	CONCRETE BARRIER, NARROW BASE		(Item has been deleted)	FOOT		$42.00	$0
0820-0127000F	CONCRETE BARRIER, TALL			FOOT		$80.00	$0
0830-01__000E	IMPACT ATTENUATOR, TYPE ____		(LOOK UP UNIT PRICE FOR TY	EACH		$15,000.00	$0
0840-0100000E	DELINEATORS, TYPE 1 (Steel) (Along roadway w/ reflector one side) See TM570			EACH	4	$30.00	$120
0840-0102000E	DELINEATORS, TYPE 2 (Flexible) (Along roadway w/ reflector one side) See TM570			EACH		$40.00	$0
0840-0103000E	DELINEATORS, TYPE 3 (Flexible) (TM575 Gen. Nt. 1. In Radii w/ reflector both sides)			EACH		$40.00	$0
0840-0104100E	DELINEATORS, TYPE 4 ALTERNATE 1 (A Short, Type 2 post, mounted to G.Rail Post)			EACH	6	$19.00	$114
0840-0104200E	DELINEATORS, TYPE 4 ALTERNATE 2 (A Short, Type 1 post, mounted to G.Rail Post)			EACH		$22.00	$0
0840-0105000E	DELINEATORS, TYPE 5			EACH		$20.00	$0
0840-0106000E	MILEPOST MARKER POSTS (See TM222)			EACH		$120.00	$0
0855-0100000E	MONO-DIRECTIONAL WHITE TYPE 1 MARKERS			EACH		$5.00	$0
0855-0102000E	BI-DIRECTIONAL YELLOW TYPE 1 MARKERS			EACH		$5.50	$0
0855-0106000E	MONO-DIRECTIONAL WHITE TYPE 1AR MARKERS, RECESSED			EACH		$8.30	$0
0855-0107000E	BI-DIRECTIONAL YELLOW TYPE 1AR MARKERS, RECESSED			EACH		$8.80	$0
0857-0101000L	CONTINUOUS RUMBLE STRIPS			MILE		$1,250.00	$0
0860-0200000F	LONGITUDINAL PAVEMENT MARKINGS - PAINT			FOOT	3208	$0.11	$353
0865-0103000F	THERMOPLASTIC, PROFILE, 120 MILS, EXTRUDED		**"Use on all Yellow Lines"**	FOOT		$1.05	$0
0865-0107000F	THERMOPLASTIC, NON-PROFILE, 120 MILS, EXTRUDE		**"Use for 4" & 8" White Lines"**	FOOT		$0.90	$0
0865-0109000F	THERMOPLASTIC, PROTECTED INLAID, EXTRUDED		(Designer to Verify Price)	FOOT		$1.70	$0
0865-0114000F	THERMOPLASTIC, WET WEATHER PATTERN, EXTRUDED			FOOT		$1.20	$0
0867-0103000E	PAVEMENT LEGEND, TYPE B: ARROWS			EACH		$250.00	$0
0867-0107000E	PAVEMENT LEGEND, TYPE B: "ONLY"			EACH		$325.00	$0
0867-0111000E	PAVEMENT LEGEND, TYPE B: "SCHOOL"			EACH		$600.00	$0
0867-0119000E	PAVEMENT LEGEND, TYPE B: RAILROAD CROSSING			EACH		$850.00	$0
0867-0131000E	PAVEMENT LEGEND, TYPE B: BICYCLE LANE STENCIL			EACH		$240.00	$0
0867-0145000J	PAVEMENT BAR, TYPE B			SQFT	90	$9.00	$810
0867-0149000E	PAVEMENT LEGEND, TYPE B: "CROSSING" LARGE			EACH		$700.00	$0
0867-0153000E	PAVEMENT LEGEND, TYPE B: "XING"			EACH		$700.00	$0

OR153 Slat Creek (Ash Swale) Br. 05041			http://itouchmap.com/latlong.html		How to select Lat & Lon		
Bid Item Number	ITEM	Latitude	Longitude	UNIT	AMOUNT	UNIT COST	TOTAL
		N 45° 06' 57"	W 123° 12' 48"				
PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS (REQUEST ESTIMATES FROM TRAFFIC SECTION)							
0910 0A	PERMANENT SIGNS			LS	All	1.00%	$4,319.57
0990-0101000A	TRAFFIC SIGNAL INSTALLATION			LS	0%	$240,000	$0
0990-0103000A	LOOP DETECTOR INSTALLATION			EACH			$0
0990-0107000A	AUTOMATIC TRAFFIC RECORDER INSTALLATIONS			LS	100%		$0
0990-0105000A	INTERCONNECT SYSTEM			LS	100%		$0
0990-0106000A	FLASHING BEACON INSTALLATION			EACH	1		$0
	ILLUMINATION			LS	100%		$0
RIGHT-OF-WAY DEVELOPMENT AND CONTROL							
1030-0109000R	PERMANENT SEEDING, MIX NO. 1			ACRE	1	$1,500	$1,500
1050-0104000F	TYPE 2 FENCE			FOOT		$7	$0
1070-0100000E	SINGLE MAILBOX SUPPORTS			EACH	2	$230	$460
1070-0101000E	MULTIPLE MAILBOX SUPPORTS			EACH		$380	$0
1070-0102000E	MAILBOX CONCRETE COLLARS			EACH		$70	$0
	ENVIRONMENTAL MITIGATION SITES			ACRE		$60,000	$0
	WATER QUALITY FACILITIES (Filteras, Vaults, Etc...		**(Urban Projects at Scoping)**	ACRE	0.30	$100,000	$30,000
	LANDSCAPING						$0
	UNUSUAL ELEMENTS						
	ARCHAEOLOGICAL SURVEY				1	$20,000.00	$20,000
	BIKE PATHS						$0
	PED BRIDGES						$0
	RAILROAD CROSSING						$0
	UTILITY/SUB-SURFACE (SUE)						$0
	WATER QUALITY FACILITY						$0
	FISH PASSAGE ELEMENTS, WIERS, CHANNELS, LADDERS, ETC						$0
	PARK AND RIDE FACILITIES						$0
	BID ITEM SUBTOTAL						**$533,502**
	ANTICIPATED ITEMS						
	PUBLIC ANNOUNCEMENTS					0.5%	$2,668
	AC BONUS or STATISTICAL BONUS		Up to 5% of HMAC & HMAC Oil Items. Not Tack			5.0%	$1,103
	SMOOTHNESS BONUS	5% of Travel Lane wearing course material (HMAC & Oil Costs)				83025.0%	$830
	ESCALATION	To be determined by Spec. Writer, at Advance Plans				10%	$1,345
	POWER HOOKUP	Customarily used with New Signal, Flashing Lights, or Illumination @ $3,000k to $5,000 per project.					$0
	R/W MONUMENTATION	Get from Region Survey Office at Advance Plans					$22,000
	OTHER						$0
	ANTICIPATED ITEM TOTALS						**$27,945**
	CONTINGENCIES (3.5% min at Final Plans)					**30.00%**	**$187,996**
PD-08 Compliant	**ODOT CONSTRUCTION ENGINEERING**					**11.00%**	**$82,439**
	TOTAL CONSTRUCTION COSTS						**$831,882**
	ODOT PRELIMINARY ENGINEERING		**ENTER LUMP SUM ONLY (FAR RIGHT)**			**45.08%**	**$375,000**
	UTILITY REIMBURSEMENTS			LS	100%	$0.00	$0
	PLANNING or ACCESS MNGMNT PLAN (Rqst. est. from planner or access rep)			LS	100%	$0.00	$0
	RIGHT OF WAY ESTIMATE (REQUEST ESTIMATE FROM RIGHT OF WAY)			LS	100%	$10,000.00	$10,000
					TOTAL PROJECT COST		**$1,216,882**

Note: No Inflation Factor. Current Dollars were used for this estimate.

http://www.oregon.gov/ODOT/HWY/ESTIMATING/bid_item_prices.shtml

USE APPROPRIATE PERECENTAGES PER PROJECT CLASSIFICATION

	Modernization	Preservation	Bridge	Safety	Operations	All Others
CONTINGENCIES	**40%**	**20%**	**30%**	**30%**	**20%**	**20%**
ODOT Construction Engineering	**10.5%**	**6.5%**	**11%**	**10%**	**12%**	**11%**

Policy on CE & Conting. http://cms.oregon.gov/ODOT/HWY/PDU/docs/pdf/pd08_v4_2.pdf

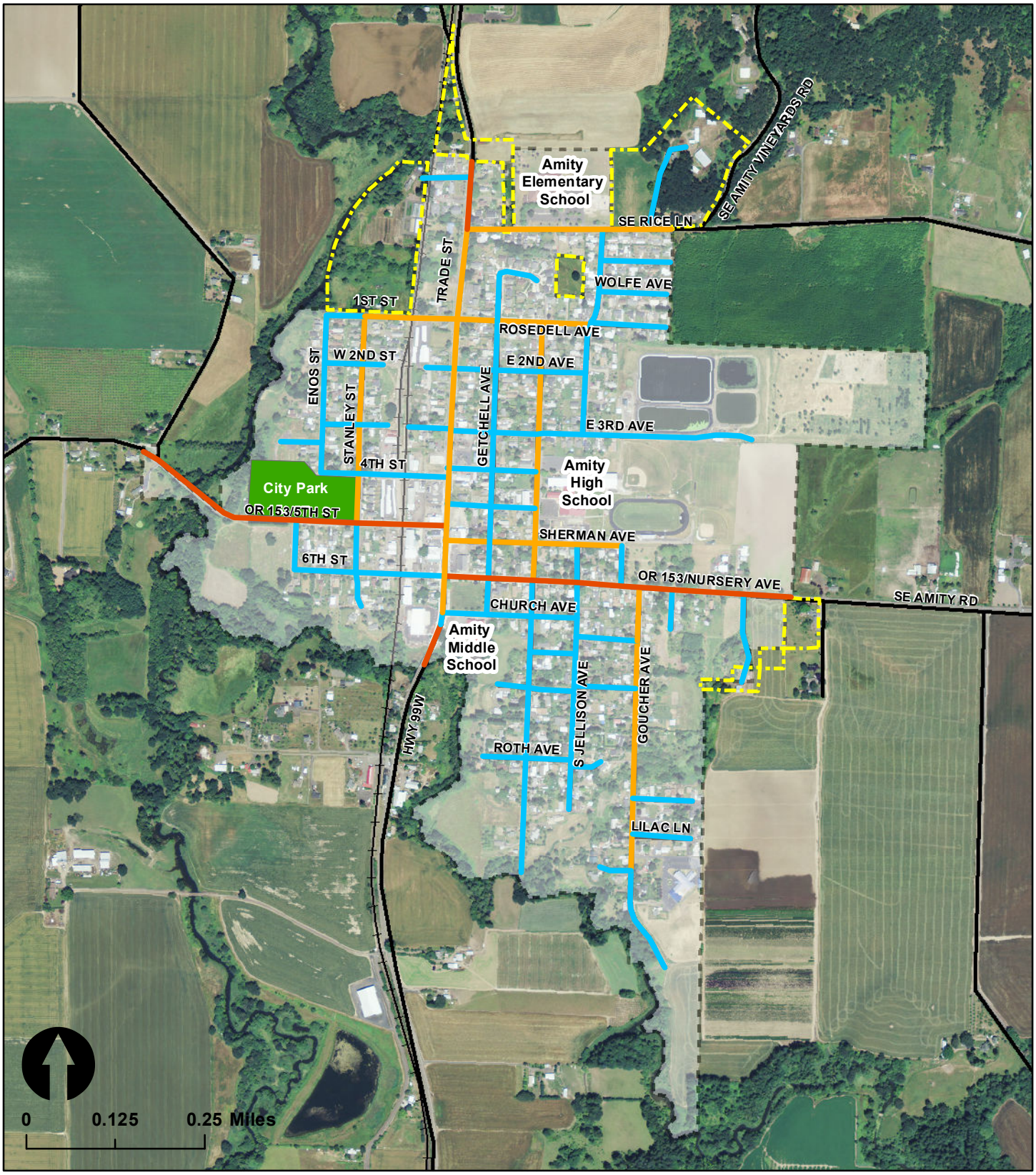
Const. Manual http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/CM.shtml

Appendix B – Bicycle level of stress (BLOS) assessments, "before" and "after."

About BLOS

As TSPs become more focused on alternate transportation modes to the single occupant vehicle, it is important to be able to qualitatively assess facilities for non-auto modes, including bicycles. Bicycling is a viable alternative for simple, short trips generally under five miles. The project team assesses the quality of the bicycling facilities to identify any gaps or deficiencies to then consider when developing projects to address these identified issues.

The Amity TSP is one of the first plans to utilize a new methodology for evaluating the quality and perceived comfort of bicycling facilities, called the "bicycle level of stress." Bicycle level of stress (BLOS) refers to the comfort or discomfort different kinds of cyclists (the general cycling "types" are: No Way, No How, Interested but Concerned, Enthused and Confident, and Strong and Fearless) may feel on any particular street and street crossing. The team used BLOS methodology developed by the Mineta Transportation Institute, which specifies BLOS for road segments and crossings based on a number of factors, including the number of through lanes, prevailing traffic speed, presence of street parking, and others. With this methodology, a bicycle route is only as good as its most stressful segment or crossing; that is, street segments are assigned a BLOS rating from 1 (least stressful for cyclists) to 4 (most stressful), and a route's overall stress level is based on the highest-stress segment on that route. Routes rated at BLOS 1 are generally suitable for the most inexperienced or vulnerable riders, including children and those who do not typically cycle on-street. Routes rated BLOS 4 are only suitable for the most "strong and fearless" cyclists, who are generally interested in fast bicycle travel and are less concerned about traffic conditions. Bicycle routes to schools should consistently be BLOS 1.



Amity Transportation System Plan
Bicycle Level of Stress Assessment

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography

Legend

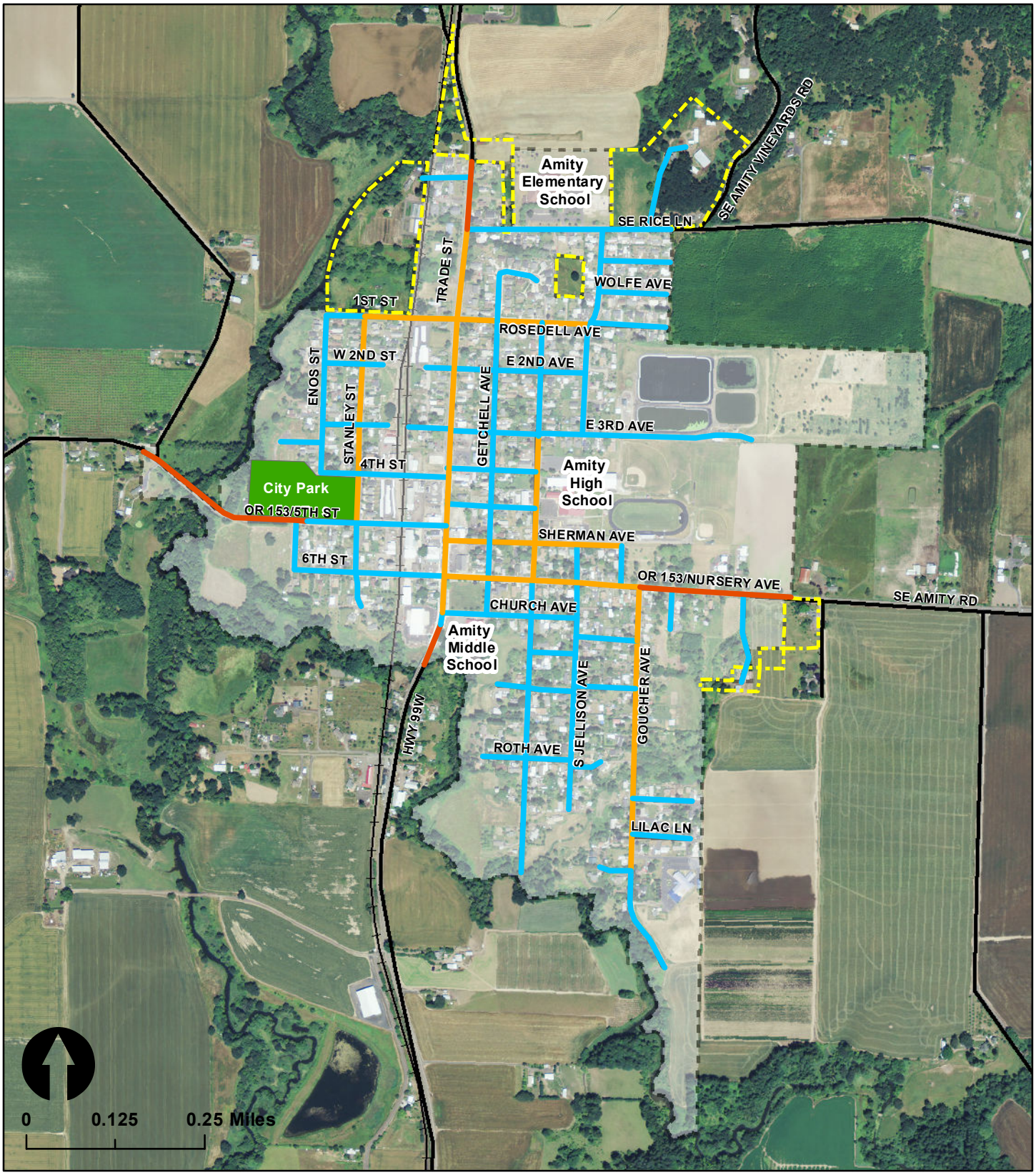
City Limits
Urban Growth Boundary
Parks

Level of Stress Rating

1
2
3

Date: 11/11/2013

Path: \\Rosa\Proj\ODOT\477622AmityTSP\GIS\MapFiles\BLOS.mxd



Amity Transportation System Plan
Bicycle Level of Stress Assessment - 2038

Legend

- City Limits
- Urban Growth Boundary
- Parks

Level of Stress Rating

- 1
- 2
- 3

Note: This Stress Assessment includes implementation of all proposed Tier 1 alternatives.

Date: 4/24/2014

Path: \\Rosa\Proj\ODOT\477622AmityTSP\GIS\MapFiles\BLOS_after.mxd

Appendix D

Technical Memo #3 - Recommended Alternative

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Technical Memo #3: Recommended Alternative

September 3, 2014

Prepared for: Chuck Eaton, PE, City of Amity
Copy to: Naomi Zwerdling, ODOT

Prepared by:
Ryan Farncomb, CH2M HILL
Cory Clausen, CH2M HILL
Darren Hippenstiel, PE, CH2M HILL

Introduction

This technical memo reviews projects recommended for inclusion in the Amity Transportation System Plan (TSP). These projects address street, bicycle, pedestrian, and transit needs within the City. The project team previously developed project alternatives based on the existing and anticipated future needs identified by the City, community, and the project team in Technical Memo #1: Existing and Future Conditions (a project "alternative" is one approach to addressing an identified deficiency or need). This memo reviews the project alternatives from Technical Memo #2: Alternatives Evaluation that are recommended for inclusion in the final TSP.

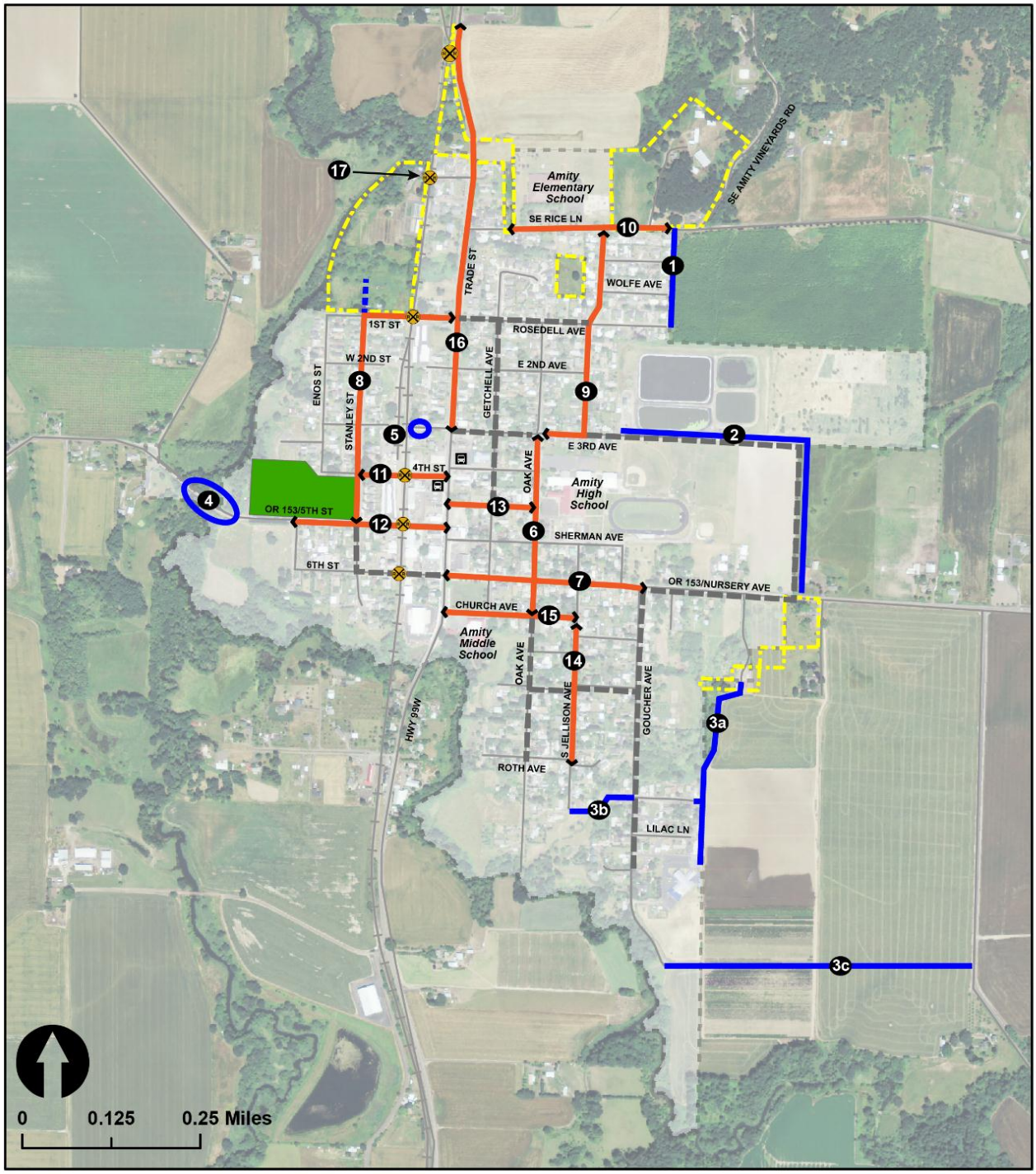
This memo provides maps showing the location of each project, written descriptions, discussion of potential impacts (positive and negative), rationale for inclusion in the TSP, and provides planning-level cost estimates to aid in understanding each project's potential effects on the transportation system in Amity. These cost estimates generally include "full build" for each project, which may include pavement widening, sidewalks, repair, etc. Figure 1 shows all proposed project locations and the planned future street system. The City is likely to phase construction of many of these projects depending on funding availability, grant requirements, and other factors. Detailed cost estimate information is available in Technical Memo #4 – Transportation Improvement Program and Funding Plan. Technical Memo #4 also provides project prioritization details and a funding and financing program for the TSP.

Appendix A provides descriptions of those projects from Technical Memo #2: Alternatives Evaluation that were not included in the Recommended Alternative, along with an explanation for why they were not included.

Process

Technical Memo #2: Alternatives Evaluation included all project alternatives considered for addressing the City's transportation needs for the next 25 years. These projects were developed based on public input from a community workshop, input from the Project Advisory Committee (PAC) and Technical Advisory Committee (TAC), and the project team. The project team took subsequent input from City staff, the PAC and TAC, and ODOT to refine and reduce this list to the projects discussed in this memo – the "recommended alternative." The projects listed in this memo are recommended for inclusion in the City's TSP. They will be reviewed by City staff, the PAC and TAC, and the public at a community workshop before the final list is included in the TSP.

Figure 1. Recommended Projects

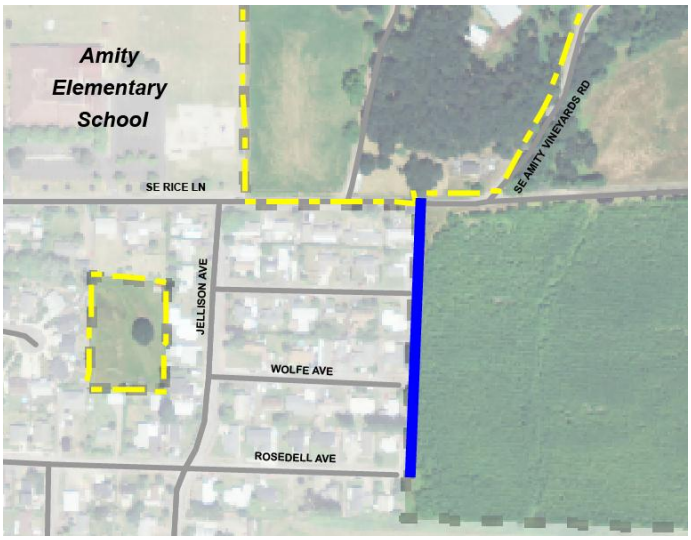


Amity Transportation System Plan
Recommended Projects and Future Street System

Legend

- City Limits
- Urban Growth Boundary
- Parks
- Bus stops
- Railroad Crossings
- Street extensions
- Dependent on development
- Bicycle and pedestrian improvements
- Lower priority streets for bicycle and pedestrian improvements

1. Rosedell Avenue to Rice Lane connection



DESCRIPTION: This project would construct a new north-south road from the eastern end of Rosedell Avenue north to Rice Lane. This connection could alternatively be constructed as only an access road (without sidewalks or parking), though for the purposes of cost estimation, the project team assumed that this would be a full road with sidewalks, curbs, gutters, and enclosed drainage. Though development of a full roadway is preferred, this connection may be developed as an access road (with minimal improvements) depending on transportation needs of the City.

RATIONALE FOR INCLUSION: Currently, the only connection north-south to Rice Lane besides OR 99W/Trade Street is Jellison Avenue. This connection would provide an additional off-highway connection to serve the population south of Rice Lane and provide redundant access for emergency vehicles and egress during an emergency.

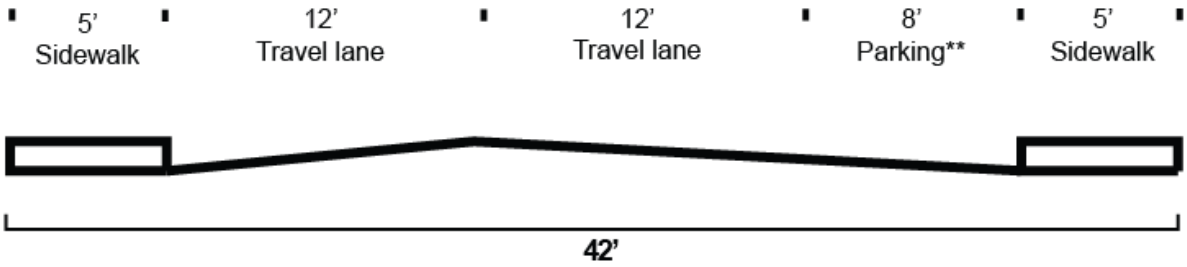
FEASIBILITY: This project would require right-of-way acquisition, though the proposed alignment would not require the demolition of any structures. The proposed alignment would require acquisition of agricultural land. Available resource maps do not show any critical environmental resources, though wetlands or other environmental features could be present.

PROJECT LENGTH (LINEAR FEET): 2,000

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 31,500

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $596,000

Proposed typical cross-section



Rice Lane – arrow denotes approximate location where the new street could connect

East end of Rosedell Avenue, where the new street would connect

2. 3rd Avenue to OR 153/Nursery Avenue connection

DESCRIPTION: This connection runs east of 3rd Avenue around the potential future location of the Amity Middle School east of the existing Amity High School, then south along the urban growth boundary (UGB) to OR 153/Nursery Avenue. This connection could be either a bicycle/pedestrian only connection, or a full street connection depending on connectivity needs. A phased approach to developing this connection may be appropriate. For purposes of cost estimates, the project team assumes that this connection will be a full road with curbs, gutters, and enclosed drainage, though if a bicycle/pedestrian only connection is the preferred alternative, a multi-use path could be constructed in lieu of the full roadway and sidewalks and the cost estimate would be significantly less.

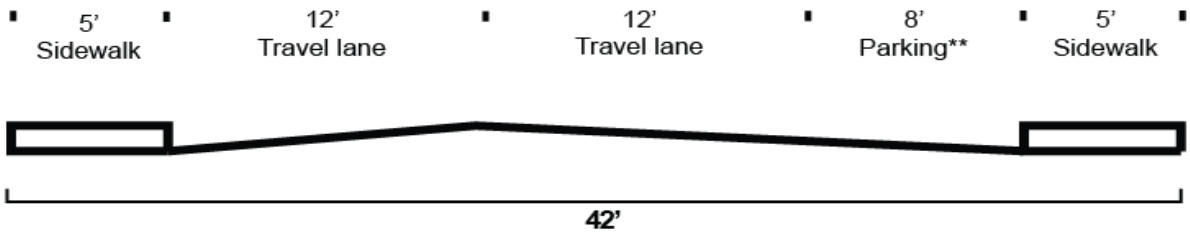
RATIONALE FOR INCLUSION: This would provide a connection off of OR 153/Nursery Avenue, allowing for local trips from neighborhoods east of OR 99W/Trade Street through the eastern part of the City. The project would provide a redundant connection to neighborhoods north or OR 153/Nursery Avenue and provide access to the new Middle School which is proposed for the property east of the High School.

FEASIBILITY: This project would require right-of-way acquisition, though the proposed alignment would not require the demolition of any structures. The proposed alignment would require property acquisition from the Amity School District and adjacent agricultural lands. Additionally, ODOT design and access management standards may need to be considered for the new connection at OR 153/Nursery Avenue. Available resource maps do not show any critical environmental resources, though wetlands or other environmental features could be present.

PROJECT LENGTH (LINEAR FEET): 3,200

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 50,400

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $1,013,000



East end of 3rd Ave, near the new wastewater treatment ponds.

OR 153/Nursery Ave. where the new road could potentially intersect with the highway.

3a. South Goucher Avenue connectivity – OR 153/Maple Court

DESCRIPTION: This is the first of three options for enhancing connectivity in the neighborhoods south of OR 153/Nursery Ave. A feasibility study is needed to determine which of the options should be moved forward, given environmental, topographic, and regulatory concerns that exist with each option. This option would begin at the east end of the parking lot at Amity Christian Church (1305 Goucher Street) or Maple Court, and follow the eastern edge of the City boundary to connect with a private driveway near Nursery Avenue/OR 153.

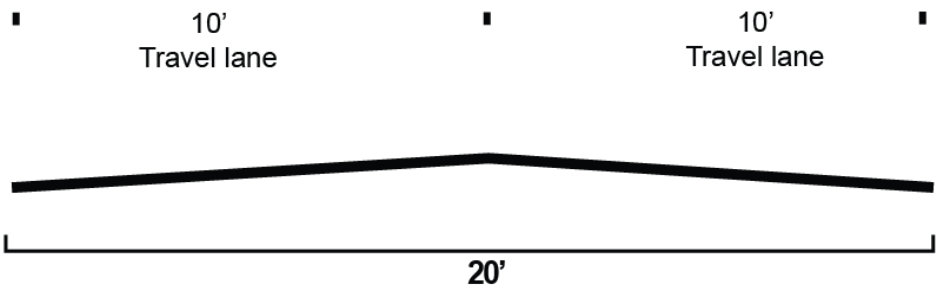
RATIONALE FOR INCLUSION: In the southeastern part of Amity, there are very few east-west connections between the long north-south roads including Jellison Avenue and Goucher Avenue. A second connection linking Goucher to Jellison or another adjacent road is particularly important in the event of an emergency along Goucher Avenue where the road may be blocked. All three of these options could be constructed as emergency access only (approximately 20' paved width). Bollards or gates would be constructed that would only be removable by emergency personnel; these would prevent through auto traffic while allowing bicycle and pedestrian access.

FEASIBILITY: This project would require right-of-way acquisition and encounter a small stream as well as potential wetlands. It is possible that this option may require right-of-way acquisition outside of the City's UGB, in which case coordination with the Department of Land Conservation and Development would be required.

PROJECT LENGTH (LINEAR FEET): 550

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 13,200

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $534,000



3b. South Goucher Avenue connectivity – Jellison connection

DESCRIPTION: This is the second of three options for enhancing connectivity in the neighborhoods south of OR 153/Nursery Ave. A feasibility study is needed to determine which of the options should be moved forward, given environmental, topographic, and regulatory concerns that exist with each option. This option would construct an east-west street between Jellison Avenue and Goucher south of Roth Avenue.

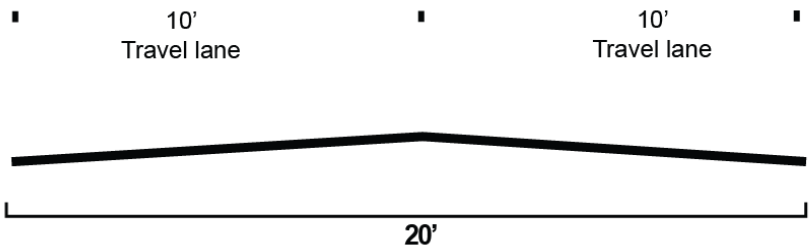
RATIONALE FOR INCLUSION: In the southeastern part of Amity, there are very few east-west connections between the long north-south roads including Jellison Avenue and Goucher Avenue. A second connection linking Goucher to Jellison or another adjacent road is particularly important in the event of an emergency along Goucher Avenue where the road may be blocked. All three of these options could be constructed as emergency access only (approximately 20' paved width). Bollards or gates would be constructed that would only be removable by emergency personnel; these would prevent through auto traffic while allowing bicycle and pedestrian access.

FEASIBILITY: This alignment requires right-of-way acquisition and may affect structures on Goucher Street. Additionally, there are environmental constraints present; the new road would cross a small stream that drains to Ash Swale. There may be wetlands associated with the stream as well. The topography at this location is such that the new road would require importing fill material and the construction of a box culvert bridge structure at the stream crossing. Given topographic, environmental, and property constraints, there are very limited opportunities to provide a redundant connection to Goucher Avenue from Jellison Avenue.

PROJECT LENGTH (LINEAR FEET): 2,300

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 55,200

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $854,000



3c. South Goucher Avenue connectivity – Old Bethel Road connection

DESCRIPTION: This is the third of three options for enhancing connectivity in the neighborhoods south of OR 153/Nursery Ave. A feasibility study is needed to determine which of the options should be moved forward, given environmental, topographic, and regulatory concerns that exist with each option. This option would extend Goucher eastward toward Old Bethel Road.

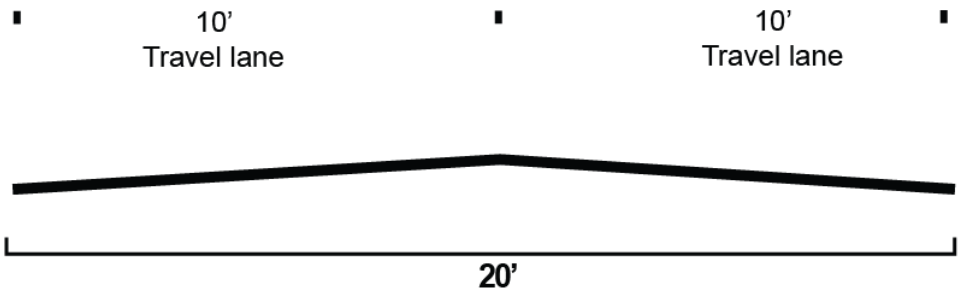
RATIONALE FOR INCLUSION: In the southeastern part of Amity, there are very few east-west connections between the long north-south roads including Jellison Avenue and Goucher Avenue. A second connection linking Goucher to Jellison or another adjacent road is particularly important in the event of an emergency along Goucher Avenue where the road may be blocked. All three of these options could be constructed as emergency access only (approximately 20' paved width). Bollards or gates would be constructed that would only be removable by emergency personnel; these would prevent through auto traffic while allowing bicycle and pedestrian access.

FEASIBILITY: This option would require right-of-way acquisition and may encounter environmental barriers. This project would largely take place outside of the city limits and UGB and may require a statewide planning "goal exception" from the Department of Land Conservation and Development (goal exceptions for these types of projects may be difficult).

PROJECT LENGTH (LINEAR FEET): 1,900

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 45,600

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $639,000



4. OR 153/5th Street Bridge Retrofit/Replacement

DESCRIPTION: This project would replace the Salt Creek bridge. In 2012, ODOT began the scoping process for a major rehabilitation of the bridge. The project would include replacement of deteriorated timber posts and railing, new pavement, new guardrails, and painting. This project would extend the useful life of the bridge, but does not constitute a full replacement. Based on scoping documents from ODOT (dated February, 2013), it is not clear whether the rehabilitation would result in removal of load restrictions on the bridge or completely remedy structural deficiencies.

RATIONALE FOR INCLUSION: The existing bridge over Salt Creek west of the park along OR 153/5th Street is categorized by ODOT as a Structurally Deficient/Distressed Bridge and is a timber-supported bridge that carries Amity's water supply, along with providing a transportation link to areas west of the City. There are no bicycle or pedestrian facilities on the existing bridge and the lanes are very narrow. The bridge is also weight load restricted. The City is interested in replacing this bridge with a modern structure. Replacement would be considerably more expensive; however, replacement is the preferred approach for Amity due to the deteriorated condition of the bridge, sub-standard lane widths, lack of shoulders and sidewalks. The City's water supply is also carried by the bridge, meaning it is an essential facility to maintain.

FEASIBILITY: This project would require coordination with ODOT as the bridge is on a state highway. In addition to environmental constraints related to Salt Creek and its associated wetlands, there are constraints present such as the adjacent City Park and a cemetery that limits potential widening or realignment of this bridge.

PROJECT LENGTH (LINEAR FEET): 450

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): Uncertain

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: Replacement is estimated to cost $14,450,000 (2009 ODOT estimate)

Salt Creek Bridge, looking to the west.

5. Park and ride on 3rd Street

DESCRIPTION: The City has identified vacant right-of-way at 3rd Street west of OR 99W/Trade Street, where there is a street that dead-ends at the railroad. This could be a future location for a transit park and ride. The lot could also be used for general parking during specific times of day.

RATIONALE FOR INCLUSION: There is one transit line within the City of Amity, and according to findings from them the previous phase of the project, there is interest in providing a park and ride.

FEASIBILITY: There is little data to draw from to estimate potential demand for park and ride facilities in Amity. Given that there are few bus stops in Amity, it is probable that a park and ride may attract new transit users who would otherwise be unwilling to walk to reach the bus stops.

No cost estimate is provided for this project. The cost of a potential park and ride lot is dependent on the number of parking stalls needed and proposed location. Access to existing homes would need to be maintained at this location. This project would also require coordination with Yamhill County Transit Area.

PROJECT LENGTH: N/A

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: No cost estimate provided (see above).

6. Oak Avenue, from Church to 3rd Avenue

DESCRIPTION: This project would widen the existing Oak Avenue pavement to add bike lanes and improve sidewalks to create continuous pedestrian and bicycle facilities on Oak Avenue from Church to 3rd Avenue. This project also includes crossing improvements at OR 153/Nursery Avenue.

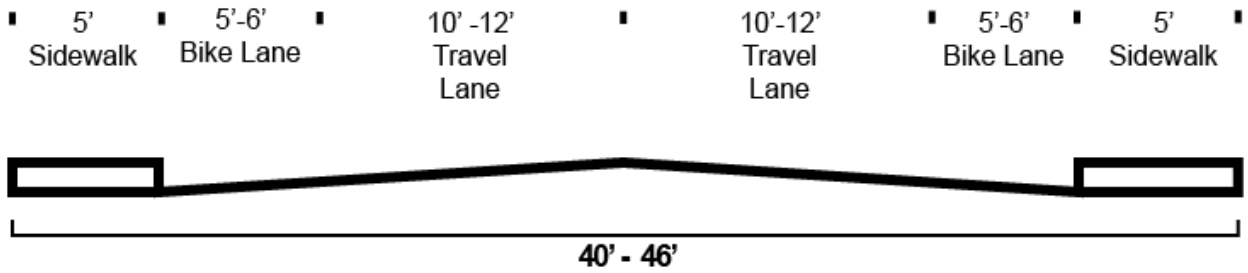
RATIONALE FOR INCLUSION: This will help provide a safe route for students walking and bicycling from Amity Middle School to the High School. Improving multi-modal connections to and between the schools is a high priority for the City.

FEASIBILITY: Oak Avenue has very constrained right-of-way in this location, though the proposed cross section is intended to fit within this constraint.

PROJECT LENGTH (LINEAR FEET): 1,100

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $209,000



Oak Avenue, looking north toward the intersection of OR 153/Nursery Ave.

Oak Avenue, looking north from near OR 153/Nursery Avenue.

7. OR 153/Nursery Avenue from 99w/Trade Street to Goucher Street

DESCRIPTION: This project would similarly widen the existing OR 153 pavement to add bike lanes and sidewalks to OR 153/Nursery Avenue, which lacks dedicated bicycle facilities and has degraded sidewalks in places. For purposes of cost estimates, the project team assumes that this section will be a full road with curbs, gutters, and enclosed drainage. The proposed cross section includes on-street parking on both sides of the street, but landscaped buffers could be included instead of parking along all or some of the alignment, depending on parking needs. Parking will be evaluated during project development.

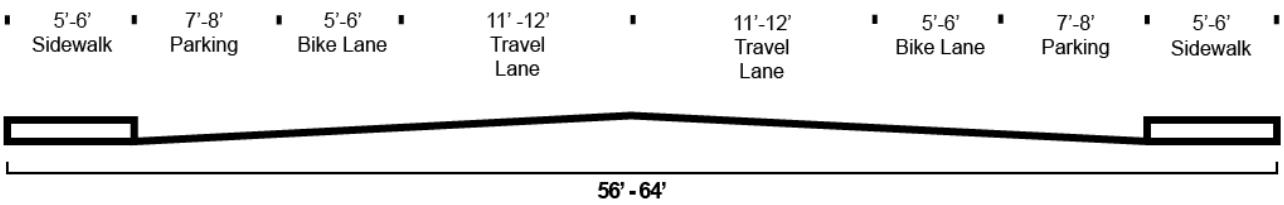
RATIONALE FOR INCLUSION: OR 153 is a busy road with intermittent sidewalks and no cycling facilities. Students regularly cross OR 153/Nursery Avenue. Improving multi-modal connections to and between the schools is a high priority for the City.

FEASIBILITY: The project team does not note any technical feasibility issues. However, coordination with homeowners regarding the retention or elimination of street parking will be required.

PROJECT LENGTH (LINEAR FEET): 1,300

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $940,000



OR 153/Nursery Avenue looking east from Getchell Avenue.

OR 153/Nursery Avenue looking east from near Oak Avenue.

8. Stanley Street from OR 153/5th Street to 1st Street and OR 99W/Trade Street

DESCRIPTION: This project would widen Stanley Street and 1st Street to add parking lanes along both sides of the street and construct a multi-use path along one side of the street. There will also be drainage ditches constructed on both sides of the street for stormwater storage and/or conveyance. This project would also include upgrades to the existing rail crossing to facilitate safe bicycle and pedestrian crossing conditions.

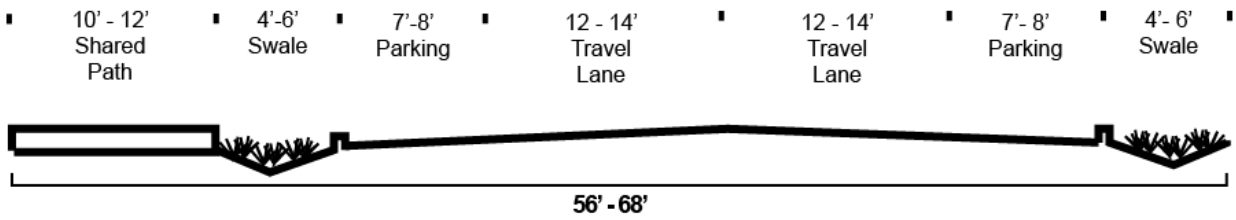
RATIONALE FOR INCLUSION: The multi-use path provides a separated north-south bicycle and pedestrian facility from the park to 1st Street, where students can cross OR 99W/Trade Street at a marked crosswalk, or continue north on OR 99W to the crossing at Rice Lane. Students are currently bussed from this part of town because of the lack of safe walking facilities.

FEASIBILITY: Some right-of-way would be required to implement this project. Rail crossing improvement will need to be coordinated with ODOT Rail and Union Pacific. In order to maintain truck turning movements, paint striping or other means may be necessary to prevent cars from parking near intersections.

PROJECT LENGTH (LINEAR FEET): 2,160

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 4,320

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $893,000



Stanley Street, looking north from OR 153 /5th Street. The City Park is on the left.

9. Jellison Avenue from 3rd Avenue to Rice Lane

DESCRIPTION: This project would construct a shared-use path with a ditch or swale for stormwater conveyance that would also separate bicyclists and pedestrians from traffic. An additional sidewalk and drainage swale or vegetative buffer may be considered on the opposite side of the street (depending on site conditions, available right-of-way, and project budget); the additional sidewalk and swale could also be phased as funding allows. The costs provided below do not include the additional sidewalk on the opposite side of the street.

3rd Avenue in this section has very narrow ROW. The typical section proposed below will need to be reviewed during project development and modified (e.g., removing parking or swales) to accommodate improvements.

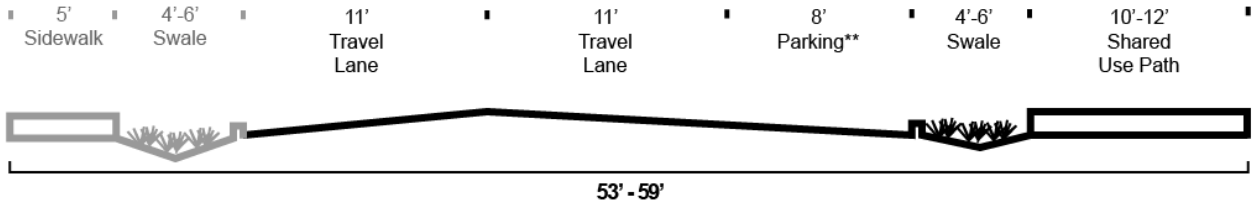
RATIONALE FOR INCLUSION: This segment provides a north-south connection from Amity High School connecting to the neighborhoods to the north. The community noted that kids tend to not walk on Oak Avenue north of 3rd, and instead all walk along Jellison (one block to the east).

FEASIBILITY: Some right-of-way would be required.

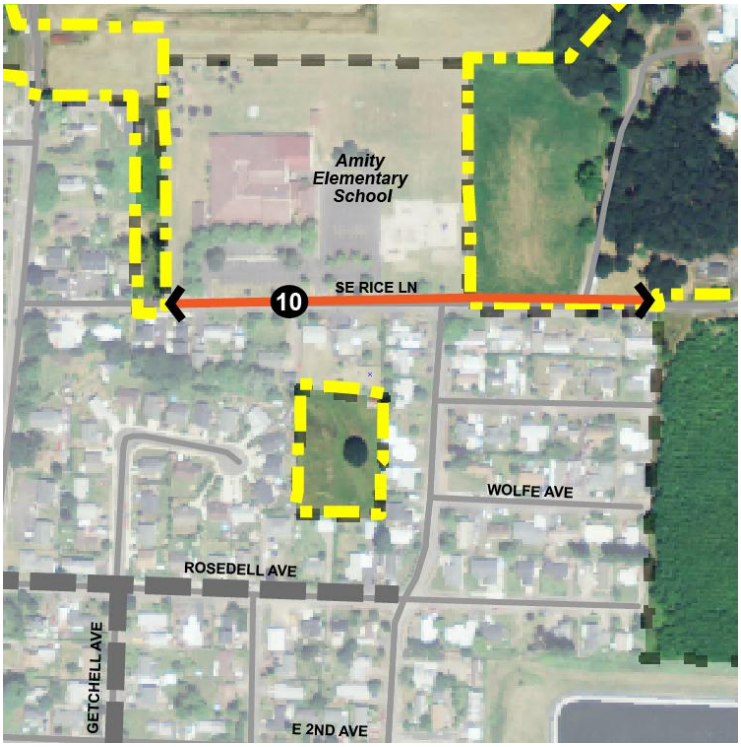
PROJECT LENGTH (LINEAR FEET): 1,780

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 6,120

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $638,000



10. Rice Lane from OR 99W/Trade Street to near Amity Vineyards Road



DESCRIPTION: This project would construct a shared-use path with a ditch or swale for stormwater conveyance that would also separate bicyclists and pedestrians from traffic. An additional sidewalk and drainage swale or vegetative buffer may be considered on the opposite side of the street (depending on site conditions, available right-of-way, and project budget); the additional sidewalk and swale could also be phased as funding allows. The costs provided below do not include the additional sidewalk on the opposite side of the street.

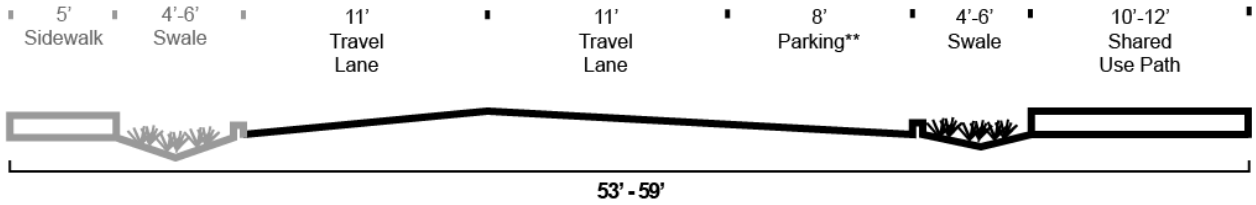
RATIONALE FOR INCLUSION: This segment provides access from the soon-to-be-improved crossing at Rice Lane and OR 99W/Trade Street to Amity Elementary school and would serve future resident in the northeast UGB expansion area.

FEASIBILITY: This project may require right-of-way acquisition near Amity Elementary School, as existing right-of-way is 40 feet.

PROJECT LENGTH (LINEAR FEET): 1,100

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): 0

ESTIMATED COST, INCLUDING RIGHT-OF-WAY: $239,000



Rice Lane, looking east from near OR 99W/Trade Street.

Rice Lane, looking east from Amity Elementary School.

11. 4th Street from Stanley to OR 99W/Trade Street

DESCRIPTION: This project would construct a shared-use path with a ditch or swale for stormwater conveyance that would also separate bicyclists and pedestrians from traffic. An additional sidewalk and drainage swale or vegetative buffer may be considered on the opposite side of the street (depending on site conditions, available right-of-way, and project budget); the additional sidewalk and swale could also be phased as funding allows. The costs provided below do not include the additional sidewalk on the opposite side of the street.

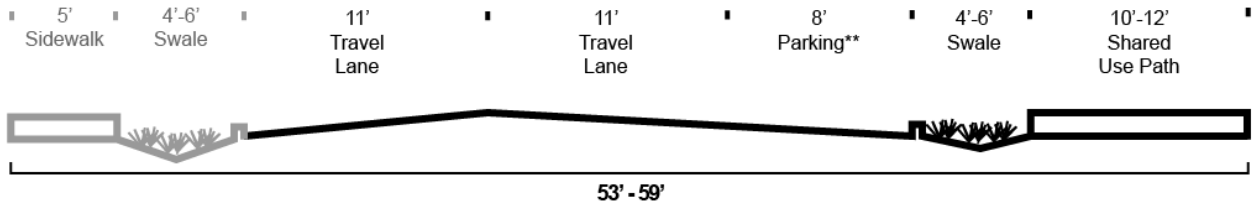
RATIONALE FOR INCLUSION: This project would provide redundant east-west connectivity for pedestrian and cyclists to and from the City Park. The Amity community noted that many pedestrians and cyclists use 4th street. This project could also connect with the planned path within the City Park.

FEASIBILITY: Improvements to the rail crossing would require coordination with ODOT Rail and Union Pacific.

PROJECT LENGTH (LINEAR FEET): 630

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $178,000



Deteriorated railroad crossing on 4th Avenue, looking east.

12. OR 153/5th Street from OR 99W/Trade Street to Park Entrance

DESCRIPTION: This project would reconstruct a sidewalk on one side of the street, with a shared-use path on the other. Both the sidewalk and shared use path would be separated from the travel and parking lane by a ditch or swale for stormwater conveyance. This project would also include upgrades to the existing rail crossing to facilitate safe bicycle and pedestrian crossing conditions.

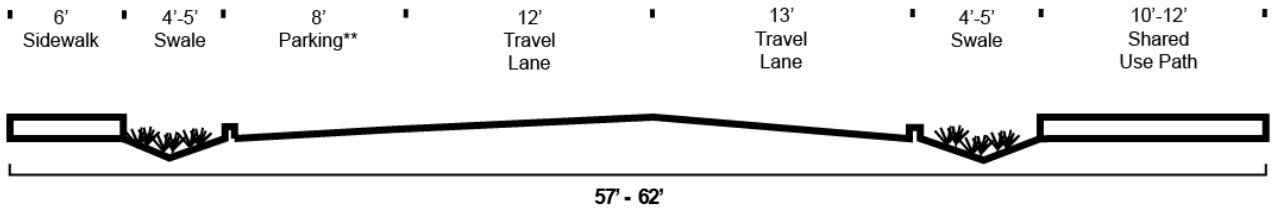
RATIONALE FOR INCLUSION: Existing sidewalks are deteriorated and no cycling facilities on OR 153. It is difficult to reach the City Park on foot or by bike. This project would improve multi-modal connectivity between the park and downtown.

FEASIBILITY: This project would be located on a state highway, requiring coordination with ODOT on design and construction. The City would also need to coordinate with ODOT Rail and Union Pacific on improvements to the rail crossing.

PROJECT LENGTH (LINEAR FEET): 1,060

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $403,000



OR 153/5th Street looking west near the City Park.

OR 153/5th Street looking east toward downtown.

13. Woodson Avenue from Oak Avenue to Trade Street/OR 99W

DESCRIPTION: This project would implement shared lanes, where vehicles and bicyclists share travel lanes, and provide a sidewalk on both sides of the street. Shared lanes would be marked with "sharrows," specific lane markings that help cyclists with positioning on the road and indicate to drivers that cyclists may be present. The proposed section would require the existing Woodson Avenue pavement to be widened in places and provide sidewalk improvements. This proposed cross section is a cost-effective means of implementing cycling and pedestrian improvements.

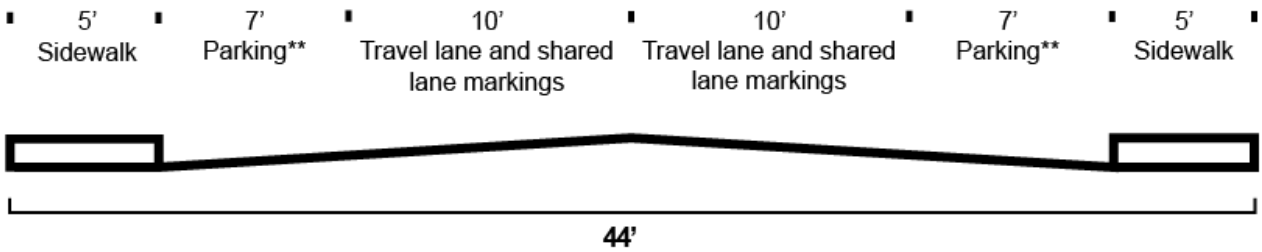
RATIONALE FOR INCLUSION: This segment would provide access from OR 99W/Trade Street to Amity High School and provide a low-stress alternative route to OR 153/Nursery Avenue. The community noted that students typically use Woodson Avenue for walking and biking, as opposed to other nearby cross streets like 3rd or Sherman Avenue. The proposed cross-section for this street would require right-of-way acquisition along the entire length of the street.

FEASIBILITY: No right-of-way would be required.

PROJECT LENGTH (LINEAR FEET): 620

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $103,000



14. S Jellison Avenue from Roth Avenue to Church Avenue

DESCRIPTION: This project would implement shared lanes, where vehicles and bicyclists share travel lanes, and provide a sidewalk on both sides of the street. The existing roadway surface would not be improved. The existing ROW and paved surface will accommodate the proposed sidewalks and shared lane markings.

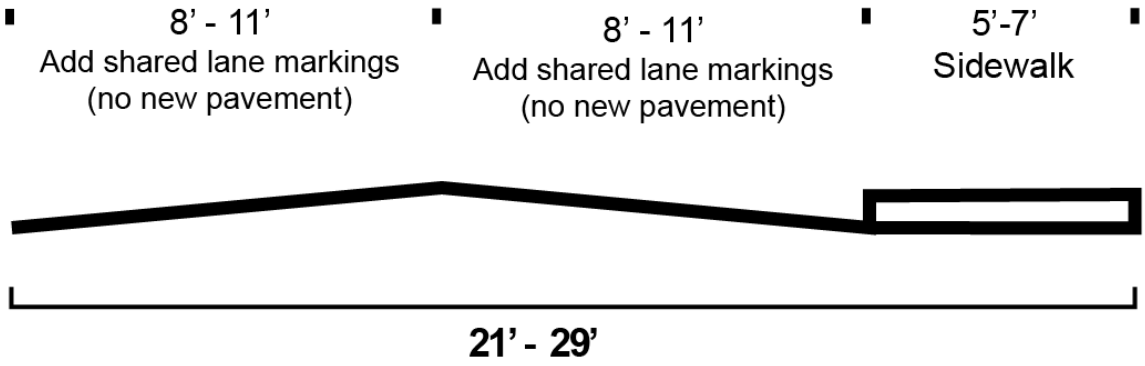
RATIONALE FOR INCLUSION: This segment would provide multi-modal facilities for the neighborhoods south of OR 153/Nursery Avenue.

FEASIBILITY: No right-of-way would be required.

PROJECT LENGTH (LINEAR FEET): 1,035

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $96,000



15. Church Avenue from OR 99W/Trade Street to Jellison Avenue

DESCRIPTION: This project would implement shared lanes, where vehicles and bicyclists share travel lanes, and provide a sidewalk on both sides of the street. The existing Church Avenue pavement would need to be widened in places to accommodate this section. This cross-section accommodates narrow rights-of-way on the streets listed below.

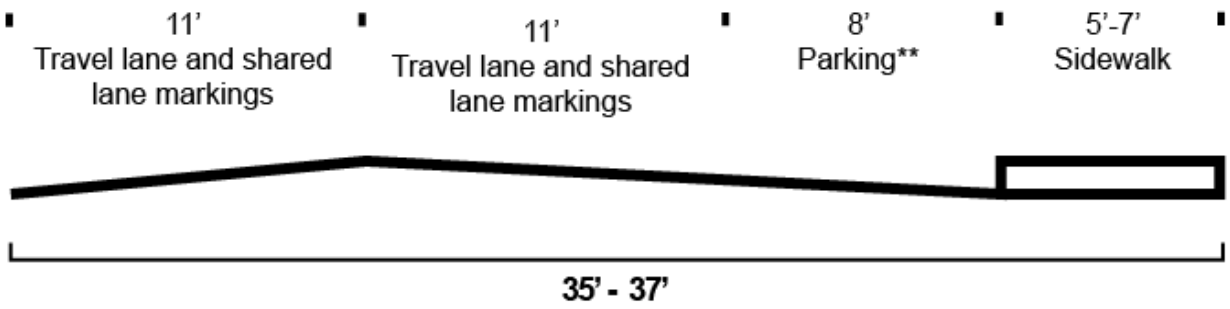
RATIONALE FOR INCLUSION: This segment would improve cycling and walking for students at Amity Middle School and connect the middle school to the greater pedestrian and cycling network. This project also provides a low-stress alternative to walking and cycling on OR 153/Nursery Avenue.

FEASIBILITY: No right-of-way would be required for this project.

PROJECT LENGTH (LINEAR FEET): 960

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $127,000



16. OR 99W/Trade Street from 3rd Street to Rice Lane

DESCRIPTION: This project would complete improvements to OR 99W/Trade Street, including new or reconstructed sidewalks and the addition of bike lanes. For purposes of cost estimates, the project team assumes that this section will be a full road with curbs, gutters, and enclosed drainage. The south end of OR 99W/Trade Street was previously improved.

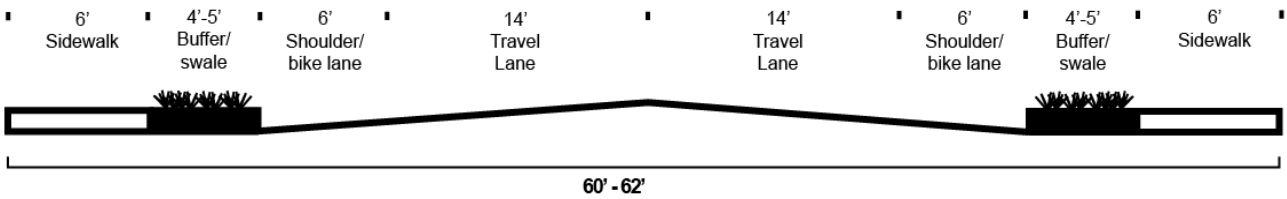
RATIONALE FOR INCLUSION: OR 99/Trade Street is the most heavily travelled route in the City, and is forecast to have even higher traffic volumes in the future. Improvements to this section of OR 99W will improve safety and pedestrian and cyclist level of comfort. Presently, sidewalks are of varying width and condition, and the bike lane is presently not marked as such (marked as a shoulder). This project will also improve the connection between neighborhoods west of OR 99W to the rest of the City.

FEASIBILITY: This project is likely to be funded and constructed by ODOT. Because OR 99W is an important freight route, any improvements will need to meet freight requirements.

PROJECT LENGTH (LINEAR FEET): 2,835

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): None

ESTIMATED COST: $1,889,000

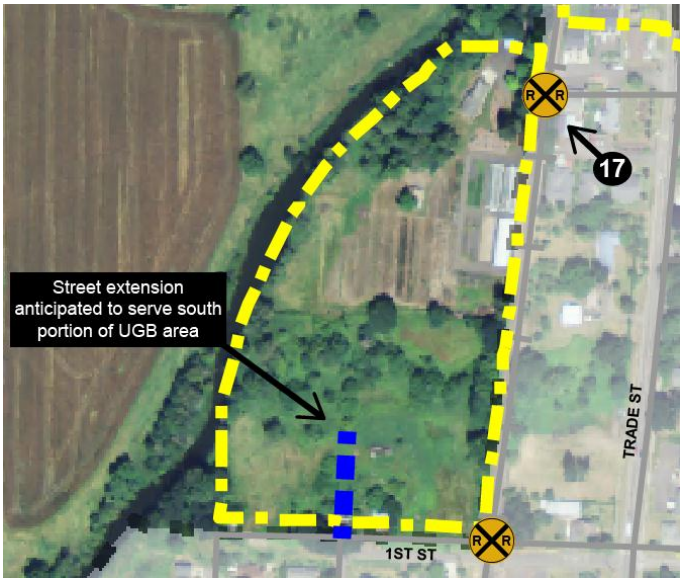


OR 99W/Trade Street, looking north.

OR 99W/Trade Street, looking south from Rice Lane

17. Railroad crossing improvements near Inez Lane

DESCRIPTION: This project would upgrade the existing rail crossing at Inez Lane or relocate the crossing to the south to provide access for future development west of Trade Street and north of 1st Street. The exact crossing location would be determined at the time of development.



RATIONALE FOR INCLUSION: This recent UGB addition has access difficulties due to a significant grade change, wetlands, and streams that roughly bisect the property north-south. The southern portion of the UGB area could be accessed by extending Stanley Street northward. However, the northern section of the property is only feasibly accessed from the east, requiring a connection across the railroad tracks.

FEASIBILITY: This project is contingent on the scope and scale of residential development anticipated for this area. The project is not expected to be funded by the City. Relocation or upgrade of the existing rail crossing will require coordination with ODOT Rail and Union Pacific Railroad.

PROJECT LENGTH (LINEAR FEET): N/A

ESTIMATED RIGHT-OF-WAY REQUIREMENTS (SQUARE FEET): Dependent on exact crossing location

ESTIMATED COST: $80,000 (rail crossing only)

Next Steps

The projects identified above will be reviewed by the project advisory committee (PAC), technical advisory committee (TAC), and by the public at a community workshop. Once the list of projects has been reviewed by all, the project team will revise the projects accordingly. Project refinement may include adjustments to the cross sections or other changes, as well as refined cost estimates. The final list of projects will be included in the TSP.

Appendix A – Other projects considered, but not recommended for inclusion in the TSP

Add a Signal at OR 99W/Trade Street and OR 153/Nursery Avenue

One of the few deficiencies identified in the existing conditions and future no-build memo was a long period of delay (over 100 seconds) for vehicles turning onto OR 99W/Trade Street from OR 153/Nursery Avenue. The project team explored a signal at OR 99W/Trade Street and OR 153/Nursery Avenue to help vehicles turning from OR 153/Nursery Avenue onto OR 99W/Trade Street. However, while this alternative improves the delay from OR 153/Nursery Street from over 100 seconds per vehicle to 10 seconds per vehicle, it would impact the southbound OR 99W/Trade Street approach by increasing the v/c ratio from 0.18 to 0.79. While this v/c ratio is still technically acceptable, the signal would introduce additional delay to the dominant north-south movement along OR 99W/Trade Street and could cause vehicles to back up on OR 99W/Trade Street up to 1,300 feet (over ¼ mile). While this alternative improves the ability for vehicles to turn from OR 153/Nursery Avenue, it would create more delay and create longer trips or those traveling north/south on OR 99W/Trade Street. Additionally, ODOT requires that signal warrants be met at this intersection – signal warrants are not met in the future year according to traffic analysis.

Modify Oak Avenue to Right-in/Right-out on OR 153/Nursery Avenue

This alternative would add a bicycle and pedestrian refuge on OR 153/Nursery Avenue at Oak Avenue. This refuge would be a raised median and would prohibit left turns into and out of Oak Avenue at OR 153/Nursery Avenue. Traffic that would normally turn left from Oak Avenue would be re-routed to OR 99W/Trade Street or other local streets like Getchell or Jellison Avenues. The increased traffic associated with this alternative would increase the v/c on eastbound OR 153/Nursery Avenue from 0.85 to 0.94, which is still within ODOT's applicable mobility target of 0.95. School buses would need to be rerouted because of this project. Because of the negative traffic impacts and desire to preserve the through traffic movement at this intersection, this alternative was not carried forward.

Add a Left Turn Pocket on Rice Lane

This alternative would add a left turn pocket from Rice Lane onto OR 99W/Trade Street to make it easier for vehicles to turn off of Rice Lane onto OR 99W/Trade Street. Currently Rice Lane is narrow, with only one lane eastbound, and one lane westbound. Vehicles waiting to turn left or right onto OR 99W/Trade Street line up in one lane. Creating another turn lane at this location would separate those turning left and right, allowing more vehicles to turn onto OR 99W/Trade Street. The existing and future conditions traffic analysis indicated that turns from Rice Lane onto OR 99W/Trade Street met existing traffic standards, however, feedback from the community and the PAC indicated that in the morning, turning from Rice Lane onto OR 99W/Trade Street was difficult and drivers were experiencing delays.

The PAC and TAC noted that the need for this project is likely low. Serious right-of-way constraints at the intersection also complicate widening. Additionally, left turn warrants may need to be met before ODOT would consider allowing a left turn pocket.

Stanley Street from OR 153/5th Street to 1st Street and OR 99W/Trade Street - sidewalks and bike lanes alternative

This project is retained in the Recommended Alternative, but has a shared use path instead of sidewalks and bike lanes. The project team found that the sidewalks and bike lanes alternative would cost approximately $250,000 more than the shared path option. In the interest of reducing costs, this alternative was not carried forward.

Consider Realigning Offset Intersections on OR 99W/Trade Street – policy alternative

Many street connections to OR 99W/Trade Street in downtown Amity are offset, meaning that they do not create four-legged intersections where the east-west streets are aligned. This policy alternative would look for opportunities to create traditional four-legged intersections as properties along OR 99W/Trade Street develop or redevelop to reduce concerns about safety issues as vehicles turn onto the highway from offset side streets. The PAC and TAC agreed that the need to address this issue is low, and that the cost and feasibility of remedying the offset intersections is very high relative to community benefits.

Oak, church to 3rd Alternative: Alternative: Getchell/Oak Avenue from Church to 3rd

This alternative would utilize the recently improved crossing on Nursery Ave/OR 153. City staff indicates that the ODOT prefers this crossing location, though school staff and other community members note that more students use the unimproved Oak Avenue crossing. The preferred crossing location carried forward to the Recommended Alternative is at Oak Avenue, as the community noted that this intersection is used more frequently by students.

Alternative to Church, from OR 153 to Nursery Alternative: Oak Avenue from 3rd Avenue to Rice Lane via Oak and undeveloped property east of Getchell Court

This alternative route would continue following Oak Avenue and head north via a shared use path behind homes east of Getchell Court and adjacent to vacant property west of Jellison. This alternative would require right-of-way acquisition. The PAC and TAC noted that pedestrian traffic uses Jellison, as opposed to Oak, at this location. This alternative was not carried forward, in favor of a path on Jellison where pedestrian demand currently exists.

Alternative to Woodson Improvements: Sherman Avenue from OR 99W/Trade Street to Oak Avenue

This segment would also provide access from OR 99W/Trade Street to Amity High School and provide a low-stress alternative route to OR 153/Nursery Avenue. This alternative would also connect to the City Park via the path proposed along OR 153/5th Street. The proposed cross-section for this street would require right-of-way acquisition along the entire length of Sherman Avenue. The community noted that Woodson is most heavily used by pedestrians and that Sherman is not well-utilized. The project team therefore chose not to carry the Sherman Avenue alternative forward.

Appendix E

Technical Memo #4 - Transportation Improvement Program and Funding Plan

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Technical Memo 4: Transportation Improvement Program and Funding Plan

September 3, 2014

Prepared for: Chuck Eaton, PE, City of Amity
Copy to: Naomi Zwerdling, ODOT

Prepared by:
Ryan Farncomb, CH2M HILL
Paul Hicks, CH2M HILL

Introduction

This memorandum reviews the planning-level costs, implementation priority, and potential funding sources for projects in the Amity Transportation System Plan (TSP). These projects are discussed in Technical Memo #3: Recommended Alternative. They were developed with input from stakeholders and community members and are intended to address deficiencies and needs identified in Technical Memo #1: Existing and Future Conditions. For some projects, it is not possible to generate a conceptual cost estimate, due to unknown variables in the scale or scope of the project. Right-of-way costs are included as appropriate.[1] **Appendix A** includes detailed costs estimates for the projects.

The project team developed planning-level costs and compared these costs to the current level of funding available from existing transportation funding sources. The estimated project costs exceed the anticipated level of funding available to the City over the next 25 years; grants and other funding sources are suggested that can help provide the additional funds needed to complete the full project list. The project team also prioritized the projects based on local transportation goals, level of need, and community input. The Technical Advisory Committee (TAC), the Project Advisory Committee (PAC), and the general public will review the alternatives before they are included in the Amity TSP.

Existing funding

Share of state gas tax

Presently, most of Amity's funds dedicated to transportation come from the City's allocation of state gas tax revenue. Annual transportation revenue over the last several years have generally varied between approximately $65,000 and $88,000. City revenues from state gas tax distributions are likely to remain steady in coming years or grow slightly, in real dollar terms, depending on action taken at the state level to increase transportation revenues (which have been in general decline for many reasons). In the last decade, the City has experienced only minor growth in its share of gas tax revenue. It is therefore reasonable to assume that Amity's share of state gas tax revenues will remain steady in coming years.

[1] Right of way costs per square foot were determined through a survey of estimates used in other plans in the Willamette Valley. Right-of-way costs are dependent on many factors unique to each project location, and are therefore inherently difficult to estimate.

Transportation utility fee

The City recently enacted a transportation utility fee, which is currently $2.00 per household per month and $0.25 per trip (based on trip generations assumptions) for other uses. In 2013, the fee generated about $16,400, most of which is used for street maintenance. Income from the transportation fee is likely to increase over time as the number of households and businesses in Amity increases.

System Development Charges

The City assesses System Development Charges (SDCs) for transportation and other utilities. Future income from system development charges is difficult to predict, and highly dependent on the economy and the scope and scale of future development in Amity.

Other revenues

The City has also received grant revenues ($25,000 approximately every 4 years) from the state's Special City Allotment (SCA) grant program, which provides grants of up to $50,000 to small communities for transportation improvement projects. The City has successfully utilized the SCA grant program in the past, and this could continue to be a reliable source of additional transportation funds for certain projects in the future. It is reasonable to assume that the City will continue to be successful in its applications for funds from this source.

Future revenue forecast

Table 1 details the estimated revenue the City is likely to have available for capital projects in the next 25 years. This table assesses funds that the City is reasonably expected to continue to take in. There are other potential dedicated and one-time revenue sources the City could pursue to augment its funds for capital improvement projects.

Table 1. Estimated future transportation revenue (in 2013 dollars)

Funding Source	2013	2038	Total over 25-year life of plan	Notes
Total gas tax revenues for capital projects	17,600	17,600	440,000	The City typically expends 15 to 20%[2] of its transportation revenues on capital projects; therefore, assuming 20% of gas tax revenues will be available for capital projects
SCA Grants	0 to 50,000	0 to 50,000	300,000	All of these funds are available for capital projects. It is reasonable to expect one grant of up to $50,000 every 4 years.
System Development Charges (SDCs)	0	35,000	875,000	SDC revenues are very difficult to predict. This estimate assumes that all housing anticipated for the new UGB areas will be built,[3] per the most recent Yamhill County coordinated growth forecast.
Transportation fee revenue available for capital projects	3,280	5,600[4]	120,000	Most of these funds are spent on maintenance; assume that 20% of this amount will be available for capital projects.
TOTAL ESTIMATED FUNDS AVAILABLE FOR CAPITAL PROJECTS:			**1,735,000**	

The transportation projects included in Technical Memo #3 Recommended Alternative amount to $24,369,000. Four projects are anticipated to be constructed by or partly or fully funded by ODOT, including:

- #4 OR 153/5th Street Bridge Replacement
- #7 OR 153/Nursery Avenue (from OR 99W to Goucher St.)
- #12 OR 153/Nursery Avenue (from OR 99W to park entrance)
- #16 OR 99W/Trade Street from 3rd to Rice Lane

Three other projects are anticipated to be built concurrent with development and are also excluded from the City's estimated financial burden:

- #1 Rosedell Avenue to Rice Lane street extension
- #2 3rd Avenue to OR 153/Nursery Avenue street extension
- #17 Railroad Crossing Improvements near Inez Lane

Therefore, the City's estimated financial burden to accomplish the remaining projects is $3,453,000 to $3,773,000, depending on which of the three options for Project #3 South Goucher Connectivity is chosen. Based on the revenue estimate above, the City can reasonably anticipate to have $1,735,000 available for capital projects over the 25 year life of this plan, leaving a gap of approximately $2,040,000. Therefore, the City will need to look for other funding sources, including other funding partners like the county or private

[2] Based on the last seven years of available budget information, the City has expended approximately 15-20% of its transportation budget on capital projects. This figure excludes any one-time grants the City has received and also excludes funding for projects like the recent downtown improvements, which were funded entirely by the Oregon Department of Transportation (ODOT).

[3] This assumes approximately 375 housing units will be constructed over the next 25 years in Amity. This estimate is based on the current transportation system development charge per household in 2013.

[4] This estimate assumes that 375 additional housing units will have been by 2038.

developers, grants, bonds, and other sources. The following sections review funding sources that may help narrow the gap.

Funding and Finance

A variety of established funding sources from federal, state and local sources are available to fund future transportation projects in the City of Amity. Table 2 provides an overview of each funding source, eligible projects, funding dollar amount, funding restrictions, and other considerations.

Table 2. Funding sources overview

Source	Funding $ available	Eligibility/restrictions	Public support/other considerations
Federal highway fund	Varies. Hundreds of millions available statewide over life of STIP.	Generally, projects must be on roads classified as major collector or higher classes; wide variety of project types accepted	Few streets in Amity would be eligible for federal funds
State highway fund - "enhance"	Varies	Many types of projects	"Enhance" funds are often federal, meaning sometimes limited project eligibility in Amity
State highway fund – "fix it"	Varies	Must be "repair" projects; wide variety of project types accepted	"Fix-it" funds are often federal, meaning sometimes limited project eligibility in Amity
Recreational trails program	About $1.5 million statewide (per year)	Must be a trail project; preference given to "non-transportation" trails	
Connect Oregon	$42 million available statewide in most recent biennium	Many types of projects	
Oregon Immediate Opportunity Fund	Between $250k and $2 million, depending on project type	Primarily focused on projects that provide economic development benefits	
Oregon Transportation Infrastructure Bank	Loan amounts vary	Many types of projects	Loans may be controversial, in that their repayment may require city financial resources that could be spent elsewhere
Special City Allotment Grants	Up to $50,000 per project	Many types of projects, with preference given to those projects that remedy safety or capacity issues. Grants available only to cities under 5,000 people.	

Table 2. Funding sources overview

Source	Funding $ available	Eligibility/restrictions	Public support/other considerations
Local gas tax	Perhaps $10,000 per year per $0.01 in tax[5]	Any city in Oregon can levy a gas tax	Local gas taxes may be controversial
Transportation maintenance fee	$15,000 - $20,000 per year	Already implemented in Amity	These funds are not generally used for capital projects, but free up other resources for capital projects. Potential equity impacts on low-income households
Tax Increment Financing/ Urban Renewal Area (URA)	Potential revenue depends on size of URA	Amity can declare up to 25% of its land area as an URA	May be controversial; URAs must meet certain requirements
System Development Charges	Potential revenue dependent on level of development	Already implemented in Amity	Can be controversial with developer community.
Parking fees	Potential revenue dependent on parking fee rate and amount of parking charged	Downtown is the area most likely suited to charging for parking	Potentially controversial; depends on how well utilized parking is and any need for demand management.
Bonds	Varies	Factors to consider include the type of bond (revenue or general obligation), city's credit rating, and project scope	General obligation bonds may require significant city resources to repay; revenue bonds require new taxes or fees (like property tax levies) that may be controversial and have disproportionately negative impacts on low income residents.
Local Improvement Districts (LID)	Dependent on size of LID and levy rate	Wide variety of projects could be funded in specific neighborhoods	Almost always started by property owners. May disproportionately harm low-income home owners.

[5] This estimate was based on gas tax revenues for the City of Coburg, which has one gas station similar to Amity. This estimate is lower than Coburg, because Coburg's gas station likely experiences higher sales volumes due to the proximity of Interstate 5.

Federal Grants

Highway Trust Fund

Revenues to the federal Highway Trust Fund (HTF) are comprised of motor vehicle fuel taxes, sales taxes on heavy trucks and trailers, tire taxes and annual heavy truck use fees. HTF funds are split into two accounts – the highway account and transit account. Funds are appropriated to the states annually, based on allocation formulas in the current legislation governing the HTF. Moving Ahead for Progress in the 21st Century (MAP-21) is the current federal transportation program legislation, which became effective October 1st, 2012.

MAP-21 kept federal funding for transportation at the same rate as the prior legislation (the Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users, known as SAFETEA-LU). MAP-21 consolidated the 90 different programs in SAFETEA-LU into 30, eliminated transportation earmarks, and reduced funding for transportation enhancements (pedestrian, bicycle and similar projects) by one third. Despite these changes and modest reduction in transportation enhancement (now transportation alternatives) funds, MAP-21 largely continues federal transportation funding and policy enacted under SAFETEA-LU. Matching funds are generally required; the current matching ratio is 10.27% for projects in Oregon.

Most federal grant monies are distributed by the Oregon Department of Transportation (ODOT) through the Statewide Transportation Improvement program (STIP). The application process for federal funds is described below in the Statewide Transportation Improvement Program section.

State Grants

State Highway Fund

State funds are distributed by the Oregon Transportation Commission (OTC). Revenues to the fund are comprised of fuel taxes, vehicle registration and title fees, driver's license fees and the truck weight-mile tax. State funds may be used for construction and maintenance of state and local highways, bridges and roadside rest areas. State law requires that a minimum of 1% of all highway funds be used for pedestrian and bicycle projects in any given fiscal year. However, cities and counties receiving state funds may "bank" their pedestrian and bicycle allotment for larger projects.

Statewide Transportation Improvement Program

The STIP is the 4-year capital improvement program for the state of Oregon. It provides a schedule and identifies funding for projects throughout the state. Projects included in the STIP are generally "regionally significant" and are prioritized by Metropolitan Planning Organizations and Area Commissions on Transportation (ACTs). ACTs are regional advisory bodies, and the relevant ACT for Amity is the Mid-Willamette Valley ACT. All regionally significant state and local projects, as well as all federally-funded projects and programs, must be included in the STIP.

About 80 percent of STIP projects use federal funds, most of which originate from MAP-21 programs. This includes the STP, TAP, and National Highway Performance Program funding for preservation and improvement of the National Highway System. In addition, Regional Flexible Funds competitive grants awarded every two years towards bicycle, pedestrian, transit and Transportation Demand Management (TDM) projects are now included in the STIP. The STIP is the major transportation funding program for most state and federal transportation funds.

Planning for the 2015-2018 STIP is underway. Previous STIPs had six program categories: modernization, safety, preservation, bridge, operations, and special programs. Starting with the 2015-2018 STIP, ODOT will divide the funding pools into two broad categories: "Fix it" and "Enhance." "Fix it" projects are those that

preserve and maintain the current transportation system; "Enhance" projects are those that enhance, expand or improve the transportation system. The main purpose behind this reorganization is to allow maximum flexibility to fund projects that reflect community and state values and needs, rather than those that fit best into prescriptive program definitions. More information on the Statewide Transportation Improvement Program can be found at http://www.oregon.gov/ODOT/TD/STIP/Pages/default.aspx .

Applicable "Fix-it" activities will include:

- Bridges (state owned)
- High Risk Rural Roads
- Illumination, signs and signals
- Safety

Applicable "Enhance" activities will include:

- Bicycle and/or Pedestrian facilities on or off the highway right-of-way
- Most projects previously eligible for Transportation Enhancement funds
- Bike/Ped, Transit, TDM projects eligible for Flexible Funds (using federal STP and CMAQ funds)
- Safe Routes to School (infrastructure projects)
- Transportation Alternatives (new with MAP-21)

The application process for projects on the 2015-2018 STIP is complete as of this writing, but future STIPs will continue to use this new funding arrangement. There is now one application for "Enhance" projects – ODOT will determine which funding mechanism is most appropriate for individual projects. "Fix it" projects will be selected through a collaborative process between ODOT and ACTs. It should be noted that this reorganization of funding programs does not represent a fundamental change in the types of projects that will be funded through the STIP.

Eligibility

Only certain streets are eligible to receive federal funds – generally those streets with federal functional classification as "major collector" and higher order streets. Only OR 99/Trade Street, OR 153/5th Street, and OR 153/Nursery Avenue meet this criteria. However, STIP projects are also funded by other sources, meaning most streets in Amity are likely eligible under either the "Fix it" or "Enhance" categories described above. To ensure that Amity is involved in the STIP decision-making process and to advocate for STIP projects important to the community, the City should actively participate in the Mid-Willamette Valley ACT.

An additional step the City or local school district could take to improve the likelihood of funding through the "Enhance" side of the STIP is to complete a *Safe Routes to School Action Plan*. These plans detail specific programmatic actions as well as capital improvements that improve the walking and cycling environment around and between schools. Completing an Action Plan will help those projects near or adjacent to schools receive "Enhance" funding. More information about the Safe Routes program and Action Plans can be found at http://oregonsaferoutes.org/.

State Grants

Recreational Trails Program (RTP)

This program is administered by the Oregon Parks and Recreation Department. RTP funding is intended for recreational trail projects, and can be used for acquiring land and easement and building new trails. Grant funds pay up to 80 percent of project costs while project sponsors must match project costs by at least 20 percent. Funding varies greatly from year to year, with about $1.3 million awarded state-wide in 2011 and

$2.1 million in 2010. Approximately $1.5 million in state-wide funds are available in 2014. More information can be found at http://www.oregon.gov/oprd/grants/Pages/trails.aspx.

ConnectOregon Program

ConnectOregon provides grants and loans for non-highway transportation projects, backed by bonds on state lottery proceeds. $42 million in bonds were authorized for the most recent biennium. The program funds rail, port/marine, aviation, and transit projects. In addition, the Legislature made bicycle and pedestrian projects that are not eligible for State Highway Funds eligible to compete for ConnectOregon funding. If the state legislature makes further authorizations, a number of Amity's transportation projects may be eligible based on funding criteria. More information on this program can be found at http://www.oregon.gov/ODOT/TD/TP/pages/connector.aspx.

Oregon Immediate Opportunity Fund

The Oregon immediate opportunity fund supports economic development in Oregon through construction and improvements of streets and roads. Funds are discretionary and may only be used when other sources of financial support are unavailable or insufficient. The objectives of the Opportunity Fund are providing street or road improvements to influence the location, relocation, or retention of a firm in Oregon, providing procedures and funds for the OTC to respond quickly to economic development opportunities, and providing criteria and procedures for the Oregon Economic and Community Development Department (OECDD), other agencies, local government and the private sector to work with ODOT in providing road improvements needed to ensure specific job development opportunities for Oregon, or to revitalize business or industrial centers. More information can be found at http://www.oregon.gov/ODOT/TD/TP/Plans/IOF.pdf.

Oregon Transportation Infrastructure Bank (OTIB)

OTIB is a statewide revolving loan fund available for highway projects on major collectors or higher classifications and bicycle or pedestrian access projects on highway right-of-way. Applications are accepted at any time. More information can be found at http://www.oregon.gov/ODOT/cs/fs/Pages/otib.aspx.

Special City Allotment Grants

Special City Allotment (SCA) Grants are distributed among cities with population of less than 5,000 to help repair or reconstruct City-maintained streets that are inadequate for the capacity they serve or are deemed unsafe. The City has received two SCA grants in the last several years, and is likely to continue to be successful with this program. More information can be found at http://www.oregon.gov/ODOT/HWY/REGION2/docs/resources/SpecialCityAllotmentGrantProgram.pdf.

Other Current & Potential Funding Sources

Local

Most of the sources below would provide additional transportation revenue to the City that could be spent on a wide variety of projects.

Local Gas Tax

Not every city in Oregon levies a local gas tax; of those that do, the local tax rate ranges from $0.01 to $0.04 per gallon. Based on gasoline sales and current revenues, a $0.01 local gas tax could yield approximately $10,000 - $20,000 in additional annual transportation revenue (depending on volume of gasoline sales within the City). Amity does not currently charge a local gas tax. Many cities in Oregon charge a local diesel fuel tax in addition to gasoline taxes. Of those cities that levy a diesel fuel tax, the local tax rate ranges from

$0.01 - $0.05 per gallon of diesel fuel. Local fuel tax revenues offer a potential funding source to Amity TSP projects.

Transportation Maintenance/Utility Fee

The City recently enacted a transportation utility fee, which is currently $2.00 per household per month and $0.25 per trip (based on trip generations assumptions) for other uses. A number of Oregon jurisdictions also levy such a fee to pay for maintenance and operations of city streets. These fees are typically assessed on a monthly basis to residents, businesses and other non-residential uses. Non-residential fees are typically assessed by type of use, square footage of the building, and/or number of parking stalls that would be required under city code for a given use.

The fee currently generates about $16,000 a year in revenue. The fee, if left unchanged, is anticipated to generate in excess of $20,000 per year by 2038 because of anticipated population and household growth in Amity. Every additional dollar charged per household per month would generate an additional $6,000 per year with the current number of households, and up to $10,000 per year in 2038 based on additional growth in households. Note that this estimated does not include additional fee revenue from non-residential land uses.

Fees vary significantly from city to city; the City of Hillsboro currently charges each single family home $3.10 per month, Stayton charges $1.00 - $2.00 per month per home and Oregon City charges $4.50 per single family residence. Non-residential fees also vary, with fees ranging from less than $0.15 to as much as $20.00 per square foot, depending on the type and intensity of use. The City of Tigard charges $1.12 per month per parking stall required for non-residential uses. Though the City already charges such a fee, it could consider raising the fee to fund a greater share of maintenance costs, thereby freeing resources for capital projects.

Tax Increment Financing (Urban Renewal Areas)

Amity does not currently have an Urban Renewal Area (URA) within the city. Oregon law allows small cities to designate up to 25% of the land area within the city as URAs; Amity could potentially designate a URA, the funds from which could be used to finance transportation projects. However, URAs can only be designated in “blighted” areas; “blight” refers to a variety of conditions, including lack of infrastructure, under-utilization of property, physical condition of buildings, etc.

System Development Charges (SDCs)

SDCs are fees imposed on new development. Amity currently has SDCs for transportation. These fees can be used for a wide variety of transportation improvements. SDC revenue is highly dependent on the type and amount of development occurring in Amity. These fees must be regularly adjusted based on the infrastructure needs of the City.

Parking Fees

The City does not currently charge for parking. Income generated by charging parking fees could be used to implement a variety of transportation projects. The collection system would require purchase of parking meter infrastructure, careful study of where to install meters, and analysis of the appropriate fee amount to charge drivers. However, relatively low demand and abundant free parking availability on nearby neighborhood streets may mean that charging for parking is infeasible.

Bonds

Revenue or general obligation bonds can help finance construction of capital improvement projects by borrowing money and paying it back over time in smaller installments. Bonds are typically backed by new revenue, like an additional property tax levy.

Local Improvement Districts (LIDs)

Local Improvement Districts can be created by property owners within a district to raise revenues for infrastructure improvements within district boundaries. Typically, property owners work together to form an LID. An LID could potentially fund specific improvements in certain neighborhoods; they are often formed to make sidewalk improvements. LIDs can be difficult to establish and rely on the cooperation of property owners.

Project Priorities

Projects in the Amity TSP are prioritized in Table 3 by need and by time frame for implementation: high (0 – 5 years), medium (5 – 10 years), and low (10 – 25 years). Projects are prioritized based on community goals, urgency of the need, funding availability, community input, and complexity of the project. Small, cost-effective improvements are likely to be high priorities because they can be accomplished in the short-term. The need for some projects is dependent on development, and these projects are called out separately in the table. Short-term projects generally address current or soon-to-emerge transportation issues, and should be prioritized for funding. Complex projects that are more expensive and have more impacts may be accomplished in the long-term. Some proposed projects may address a transportation problem that is likely to emerge in the future. Project priorities are not intended as a “to-do” list for the City, but a suggestion for programming the City’s scarce transportation funding resources.

Table 3 provides the cost estimates, priority, and potential funding partners or sources. Not every possible funding source is listed in the table; for example, local gas taxes, system development charges (SDCs), bonds, state loans, etc. can be used to fund a wide variety of projects and are not expressly called out in the table.

Table 3. Cost estimates and project prioritization

Project Name	Priority Level	Estimated Cost	Jurisdiction	Potential Funding Partners/Sources	Notes
1. Rosedell Ave to Rice Lane connection	Dependent on development	$596,000	City	City, Developer, Yamhill County	This connection is likely to be constructed during development of adjacent property.
2. 3rd Ave to OR 153/Nursery Ave connection	Dependent on development	$1,013,000	City	City, Developer, School District, Yamhill County	This connection is likely to be constructed during development of adjacent property.
3a. South Goucher Ave connectivity – Maple Ct. connection	Low	$534,000	City, Yamhill County	City, Yamhill County, Developer, LID	This connection is high priority because of the emergency access issues on Goucher Avenue. All three options are included, as each connection option has different pros and cons associated with it.
3b. South Goucher Ave connectivity – Jellison Ave. connection		$854,000			
3c. South Goucher Ave connectivity – Old Bethel connection		$639,000			
4. OR 153/5th Street Bridge replacement	High	$14,400,000 (2009 ODOT estimate)	ODOT	ODOT	ODOT is likely to move ahead with funding a retrofit project, but it is uncertain at the time of this writing how the retrofit project will extend the useful life of the bridge. Full replacement is more costly.
5. Park and ride on 3rd Street	Low	No estimate	City	City, Yamhill County Transit	Demand for park and ride facilities is unknown; if demand becomes clearer, this project could be reprioritized.
6. Oak Avenue, from Church to 3rd	High	$209,000	City, ODOT (if improvements to OR 153 necessary)	City, School District, "Enhance" funds, SCA grants	Key project for improving multi-modal connectivity between the schools.

Project Name	Priority Level	Estimated Cost	Jurisdiction	Potential Funding Partners/Sources	Notes
7. OR 153/Nursery Avenue, from OR 99/Trade Street to Goucher Street	High	$940,000	ODOT	ODOT, "Enhance" funds,	ODOT is a likely funding partner; project could move forward soon with ODOT assistance.
8. Stanley Street from OR153/5th Street to 1st and OR 99W/Trade Street	Medium	$893,000	City, Union Pacific	City, "Enhance" funds, Union Pacific, SCA grants	Key project for improving multi-modal connectivity between the schools.
9. Oak Ave from 3rd Ave to Rice Lane (along Jellison)	High	$638,000	City	City, "Enhance" funds,	Key project for improving multi-modal connectivity between the schools.
10. Rice Lane from OR 99w/Trade Street to near Amity Vineyards Rd	High	$239,000	City, Yamhill County	City, SCA grants, "Enhance" funds, School District	Key project for improving multi-modal connectivity between the schools.
11. 4th Street from Stanley to OR 99W/Trade Street	Medium	$178,000	City, Union Pacific	City, Recreational Trails program, SCA grants, Union Pacific	Project would connect to future path in the City Park. Provides a redundant multi-modal east-west connection.
12. OR 153/5th Street from OR 99W/Trade Street to Park Entrance	High	$403,000	ODOT, Union Pacific	ODOT, "Enhance" funds, Union Pacific	Multi-modal accessibility to the park is presently low, due to deteriorated/non-existent sidewalks and a lack of cycling facilities.
13. Woodson Ave from Oak Ave to Trade Street/OR 99W	Low	$103,000	City	City	Project would add redundant east-west multi-modal connection.
14. S. Jellison Ave from Roth Ave to Church Ave	Low	$96,000	City	City, SCA grants	Improves multi-modal connectivity for residents south of OR 153/Nursery Avenue.

Project Name	Priority Level	Estimated Cost	Jurisdiction	Potential Funding Partners/Sources	Notes
15. Church Ave from OR 99W/Trade Street to Jellison Ave	High	$127,000	City	City, School District, SCA grants, "Enhance" funds	Key project for improving multi-modal connectivity between the schools.
16. OR 99W/Trade Street from 3rd to Rice Lane	High	$892,000	ODOT	ODOT, "Enhance" or "Fix it" funds	Will complete multi- modal improvements to OR 99W/Trade Street in Amity.
17. Railroad Crossing Improvements near Inez Lane	Dependent on development	$80,000	ODOT, Union Pacific	Developer	Will provide essential access to northwest UGB expansion area.

Next Steps

The PMT, PAC, and community will review these projects and priorities concurrently with Tech Memo #3: Recommended Alternative. The project team will make any necessary changes, and then the alternatives supported by City stakeholders will be included as recommendations in the Amity TSP.

Appendix A – Full cost estimates

Amity TSP - Estimate Summary

ROADWAY PROJECTS ORDER OF MAGNITUDE COST ESTIMATES	
Project	**Estimated Cost**
1. Rosedell Avenue - Rice Lane Connection	$596,000
2. 3rd Avenue - OR 153/Nursery Avenue Connection	$1,013,000
3a. OR 153 Connection - OR 153/Maple Ct. Connection	$534,000
3b. Jellison Avenue Connection	$854,000
3c. Goucher St/Old Bethel Rd Connection	$639,000
4. Salt Creek Bridge Replacement - SEE ODOT ESTIMATE AT END OF APPDX.	$14,450,000
5. Park and ride on 3rd Street - NO ESTIMATE	-
6. Oak Ave (From Church to 3rd)	$209,000
7. OR 153/ Nursery Ave. (from 99W to Goucher)	$940,000
8. Stanley St/1st St (from OR 153/5th St to OR 99W/Trade St)	$893,000
9. Jellison Avenue from 3rd Avenue to Rice Lane	$638,000
10. Rice Lane from Elementary School to near Amity Vineyards Road	$239,000
11. 4th St. (from OR 99W to Stanley St.)	$178,000
12. OR 153/5th St (from OR 99W/Trade St to Park Entrance)	$403,000
13. Woodson Ave (from Oak to OR 99W/Trade St)	$103,000
14. S. Jellison Ave (from Roth to Church)	$96,000
15. Church Ave (from OR 99W/Trade St to Jellison)	$127,000
16. OR 99W/Trade St.. (from 3rd St. to Rice Ln.)	$1,889,000
17. Railroad Crossing Improvements	$80,000
Total	**$24,369,000**

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: **1. Rosedell Avenue - Rice Lane Connection**		**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Drainage, Lighting		**LENGTH (MILE):** 0.38	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.13	$882,000.00	$116,932
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.38	$213,300.00	$80,795
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.45	$14,670.00	$6,668
7	Traffic Calming	5-10%		0.0%	$0
8	Illumination	Mi.	0.13	$260,000.00	$34,470
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$238,865***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$6,000
	TP & DT	3.0-8.0%	3.0%		$7,200
	Mobilization	8.0-10.0%	10.0%		$23,900
	Erosion Control	0.5-2.0%	2.0%		$4,800
	Contingency	30-40%	40.0%		$95,500
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$376,265***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	31,500	$4.00	$126,000
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$56,400
	Construction Engineering		10.0%		$37,600
			TOTAL PROJECT COST		**$596,000**

Assumptions:

Project will construct a new roadway consisting of 2-12' Lanes, 1-8' Parking, and 2-5' Sidewalks and occur at the east end of Rosedell St north to Rice Ln.

Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base) with a 20% increase for fill slopes.

1867 lane-feet

Two 750' Lanes (12') = 1400 lane-feet

One 750' Parking Lane (8') = 467 lane-feet

Includes 5' Sidewalk (Both Sides)

Curb and Gutter

Street lighting included at 200' spacing on each side.

ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**2. 3rd Avenue - OR 153/Nursery Avenue Connection**	**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Drainage, Lighting	**LENGTH (MILE):** 0.61	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.23	$882,000.00	$200,455
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.61	$213,300.00	$129,273
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.73	$14,670.00	$10,669
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.	0.23	$260,000.00	$59,091
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$399,487***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$10,000
	TP & DT	3.0-8.0%	8.0%		$32,000
	Mobilization	8.0-10.0%	10.0%		$39,900
	Erosion Control	0.5-2.0%	2.0%		$8,000
	Contingency	30-40%	40.0%		$159,800
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$649,187***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	50,400	$4.00	$201,600
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$97,400
	Construction Engineering		10.0%		$64,900
			TOTAL PROJECT COST		**$1,013,000**

Assumptions:

This project will construct a new roadway consisting of 2-12' Lanes, 1-8' Parking, and 2-5' Sidewalks from the east end of 3rd St. to the east approx.. 240' and south to OR 153.

Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base) with a 20% increase for fill slopes.

3200 lane-feet

Two 1200' Lanes (12') = 2400 lane-feet
One 1200' Parking Lane (8') = 800 lane-feet
Includes 5' Sidewalk (Both Sides)
Curb and Gutter

ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 3a. OR 153 Connection - OR 153/Maple Ct. Connection		**PREPARED BY:** C. Clausen	**DATE:** 45/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork,		**LENGTH (MILE):** 0.36	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.7	$203,300.00	$146,314
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,410	$7.50	$10,575
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$250.00	$0
			SUBTOTAL		***$172,889***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$4,300
	TP & DT	3.0-8.0%	8.0%		$13,800
	Mobilization	8.0-10.0%	10.0%		$17,300
	Erosion Control	0.5-2.0%	2.0%		$3,500
	Contingency	30-40%	40.0%		$69,200
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$280,989***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	45,600	$4.00	$182,400
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$42,100
	Construction Engineering		10.0%		$28,100
			TOTAL PROJECT COST		**$534,000**

Assumptions:

Connection from OR 153/Nursery St to Maple Ct. perpendicularly intersecting Lilac Ln. and SW Maple St.

This project will construct a new rural roadway section consisting of 2-10' Lanes, 2-2' shoulders and ditches. No curb, gutter, sidewalk, or enclosed drainage.

Earthwork estimated is to construct the proposed pavement section only (4" Asphalt on 6" Agg. Base) with 20% increase for fill slopes.

3,800 lane-feet

Two 1,900' Lanes (10') = 1,900 lane-feet

There will be 4 removable bollards at each end of road to prevent access

ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 3b. Jellison Avenue Connection		**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Structures		**LENGTH (MILE):** 0.10	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.2	$203,300.00	$42,354
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,700	$7.50	$12,750
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF	900	$250.00	$225,000
			SUBTOTAL		***$296,104***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$7,400
	TP & DT	3.0-8.0%	5.0%		$14,800
	Mobilization	8.0-10.0%	10.0%		$29,600
	Erosion Control	0.5-2.0%	2.0%		$5,900
	Contingency	30-40%	40.0%		$118,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$472,204***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	13,200	$20.00	$264,000
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$70,800
	Construction Engineering		10.0%		$47,200
			TOTAL PROJECT COST		**$854,000**

Assumptions:

Connection from the south end of Jellison St. to Goucher St. just north of SW Maple St.
This project will construct a new rural roadway section consisting of 2-10' Lanes, 2-2' shoulders and ditches. No curb, gutter, sidewalk or enclosed drainage.
Earthwork estimated to construct the proposed pavement section: fill required to minimize street grade over ditch crossing (assuming average fill depth of 9' over 175' foot span) with a 20% increase for fill slopes
Anticipated Bridge Structure for ditch crossing (approx. 30' wide by 30' long = 900 SF)
1100 lane-feet
Two 550' Lanes (10') = 1100 lane-feet
There will be 4 removable bollards at each end of road to prevent access
ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 3c. Goucher St/Old Bethel Rd Connection		**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork		**LENGTH (MILE):** 0.44	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Access Road	Lane-Mi.	0.9	$203,300.00	$177,117
3	New Local Roadway	Lane-Mi.		$213,300.00	$0
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Bollard	EA	8	$2,000.00	$16,000
6	Earthwork	CY	1,710	$7.50	$12,825
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$250.00	$0
			SUBTOTAL		***$205,942***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$5,100
	TP & DT	3.0-8.0%	8.0%		$16,500
	Mobilization	8.0-10.0%	10.0%		$20,600
	Erosion Control	0.5-2.0%	2.0%		$4,100
	Contingency	30-40%	40.0%		$82,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$334,642***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	55,200	$4.00	$220,800
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$50,200
	Construction Engineering		10.0%		$33,500
			TOTAL PROJECT COST		**$639,000**

Assumptions:

Connection from the south end of Goucher to SE Old Bethel Rd.

This project will construct a new rural roadway section consisting of 2-10' Lanes and 2-2' shoulders and ditches. No curb, gutter, sidewalk, or enclosed drainage.

Earthwork estimated is to construct the proposed pavement section only (4" Asphalt on 6" Agg. Base) with a 20% increase for fill slopes.

4,600 lane-feet

Two 2,300' Lanes (10') = 4,300 lane-feet

There will be 4 removable bollards at each end of road to prevent access

ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 6. Oak Ave (From Church to 3rd)		**PREPARED BY:** C.Clausen	**DATE:** 45/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Sidewalk, Curb, Gutter, and Striping		**LENGTH (MILE):** 0.21	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks	Mi.	0.10	$882,000.00	$91,875
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	1275	$4.00	$5,100
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Restripe Existing Roadway	LF	4050	$2.00	$8,100
6	New Signal	EA		$300,000.00	$0
7	Earthwork	CY		$7.50	$0
8	Traffic Calming	5-10%		-	$0
9	Pedestrian Crossing Assembly	EA		$37,200.00	$0
10	Bridges	SF		$150.00	$0
				SUBTOTAL	***$105,075***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$2,600
	TP & DT	3.0-8.0%	5.0%		$5,300
	Mobilization	8.0-10.0%	10.0%		$10,500
	Erosion Control	0.5-2.0%	2.0%		$2,100
	Contingency	30-40%	40.0%		$42,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$167,575***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$25,100
	Construction Engineering		10.0%		$16,800
			TOTAL PROJECT COST		**$209,000**

Assumptions:

- Improvements to occur on Oak Ave. from Church Ave. to 3rd St.
- Project will add bike lanes to existing roadway, construct new sidewalk and/or improvements, pedestrian crossing on OR 153/Nursery Ave (2-10' Lanes, 2-5' Bike Lanes, and 2-5' Sidewalks)
- Total quantity of curb and gutter/sidewalk modified to account for single side of road construction (unit cost is for both sides of street)
- Existing Roadway condition and widths adequate for proposed section except for segment 255' north of Church, only other new surfacing required is sidewalk
- Sidewalk Construction required on west side of Oak for 255' north of Church (east side sidewalk to be kept in placed and used) 5' of new pavement required on east side of street.
- No construction needed for the first 120' north of Nursery
- Sidewalk Construction required on west side of Oak for the remaining 120' to Sherman (east side sidewalk to be kept in place and used)
- Sidewalk construction required on west side of Oak for 520 ft. from Sherman to Maddox (east side sidewalk to be kept in placed and used)
- No construction needed for the first 150' north of Maddox
- Sidewalk construction required for remaining 100 ft. on both sides of the street
- Striping will consist of centerline and bike lane marking for the entire length
- Additional 10% of sidewalk length added to account for existing cracked sidewalk replacement
- There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**7. OR 153/ Nursery Ave. (from 99W to Goucher)**	**PREPARED BY:** C. Clausen	**DATE:** 45/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Sidewalk, Curb, Earthwork, Striping	**LENGTH (MILE):** 0.25	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks, With Drainage	Mi.	0.25	$430,000.00	$105,871
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	33100	$7.00	$231,700
4	Existing Sidewalk Removal	SY	10290	$5.00	$51,450
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	3900	$2.00	$7,800
7	Railroad Crossing Improvements	LF		$1,000.00	$0
8	Bicycle Shared Lane Marking	LF		$8.00	$0
9	Earthwork	CY	2050	$7.50	$15,375
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.	0.25	$235,000.00	$57,860
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$470,056***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$9,400
	TP & DT	3.0-8.0%	8.0%		$37,600
	Mobilization	8.0-10.0%	8.0%		$37,600
	Erosion Control	0.5-2.0%	2.0%		$9,400
	Contingency	30-40%	40.0%		$188,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$752,056***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$112,800
	Construction Engineering		10.0%		$75,200
			TOTAL PROJECT COST		**$940,000**

Assumptions:

Improvements will occur on OR 153/Nursery Ave from OR 99W east to Goucher St.
Project will construct new and/or reconstruct existing sidewalks, widen existing pavement for bike lanes (2-12' Lanes, 2-8' Parking, 2-6' Bike Lanes, and 2-5' Sidewalks)
Only earthwork estimated is to construct the proposed pavement section. (8" AC over 10" Agg. Base)
First 280' east of OR 99W is 30' wide with sidewalks on both sides of St. There is a 10-12' grass buffer. The extg. sidewalk will need to be removed on one side of the St. and the pavement will need widened by 16'.
Next 280' is 22' wide with sidewalks and 13' grass/gravel buffer. The pavement will need widened by 24' and the and the sidewalks will need to be removed and replaced (12' width)
Next 300' is 24' wide with sidewalks and gravel buffers on both sides. Pavement will need widened by 28' and the sidewalks will need removed and replaced.
Final 450' is 22' wide with a sidewalk on the north side of the St. The extg sidewalk will need to be removed and the pavement will need widened by 30'.
The existing roadway will be striped with a centerline and two edge/bike lane markings.
Landscaped buffers will be constructed on one side of the St., assumed half of the total segment length.
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**8. Stanley St/1st St (from OR 153/5th St to OR 99W/Trade St)**	**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Striping	**LENGTH (MILE):** 0.41	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Enclosed Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.4	$217,900.00	$89,141
3	New Local Roadway	SF	34500	$4.00	$138,000
4	Existing Sidewalk Removal	SY	480	$5.00	$2,400
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	4320	$2.00	$8,640
7	Railroad Crossing Improvements	LF	48	$1,000.00	$48,000
8	Drainage Ditch	LF	4160	$25.00	$104,000
9	Earthwork	CY	1065	$7.50	$7,986
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$398,167***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$8,000
	TP & DT	3.0-8.0%	8.0%		$31,900
	Mobilization	8.0-10.0%	10.0%		$39,800
	Erosion Control	0.5-2.0%	2.0%		$8,000
	Contingency	30-40%	40.0%		$159,300
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$645,167***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	4,320	$20.00	$86,400
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$96,800
	Construction Engineering		10.0%		$64,500
			TOTAL PROJECT COST		**$893,000**

Assumptions:

Improvements will occur on Stanley St. from OR 153 to the north to 1st St. and continue on 1st St. east to OR 99W
Project will construct sidewalks, drainage ditches/swales, improve the rail crossing on 1st St, and add bike lanes (2-12' Lanes, 2-8' Parking, 2-6' Ditch/Swales, and 1-10' Multi-Use Path)
Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base)
First 80' north of 5th St. is 25' wide, will need widened by 15' over the entire length. (Extg. Sidewalk to be removed)
Next 620' north is 25' wide and needs widened 15' over entire length. Drainage Ditch to be constructed on both sides
Next 1100' is 22' wide and needs widened by 18' over the entire length. Drainage Ditch to be constructed on both sides
Remaining 280' is 25' wide and will need widened by 15' over the entire length. New sidewalks to be constructed.
There will be a 10' multi-use path constructed on one side of the street over the entire length of segment (2080-LF)
RR crossing improvements will consist of concrete panels across the width of the crossing (no signage or gates), however, ODOT Rail may require the installation of an automatic gate. Crossing width excludes parking lanes parking lanes
Striping will be a centerline stripe and two edge stripes.
ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 9. Jellison Avenue from 3rd Avenue to Rice Lane		**PREPARED BY:** C. Clausen	**DATE:** 5/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.34	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.34	$217,900.00	$73,459
3	New Local Roadway	SF	15600	$4.00	$62,400
4	Reconstruct Existing Roadway	SF	6600	$9.00	$59,400
5	Restripe Existing Roadway	LF	1870	$2.00	$3,740
6	Drainage Ditch	LF	1780	$25.00	$44,500
7	New Signal	EA		$300,000.00	$0
8	Earthwork	CY	1404	$7.50	$10,533
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$254,032***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$6,400
	TP & DT	3.0-8.0%	8.0%		$20,300
	Mobilization	8.0-10.0%	10.0%		$25,400
	Erosion Control	0.5-2.0%	2.0%		$5,100
	Contingency	30-40%	40.0%		$101,600
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2013		
			TOTAL CONSTRUCTION COST		***$412,832***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	6,120	$20.00	$122,400
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$61,900
	Construction Engineering		10.0%		$41,300
			TOTAL PROJECT COST		**$638,000**

Assumptions:

Improvements to occur on 3rd St. from Oak Ave. to Jellison St then north on Jellison from 3rd St. to Rice Ln.
Project will construct shared use path, widen existing pavement, and construct drainage ditch/street swale (2-11' Lanes, 1-8' Parking, 1-6' Ditch/Swale, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.
Existing Pavement will be utilized when applicable
Existing 3rd St segment is 20' wide and 330' long and needs reconstructed. Will need widened by 10' the entire length and the multi-use path will be constructed along the entire length
Existing Jellison St segment (100' north of 3rd) is 28' wide and 100' long. Will need widened by 2' the entire length and a multi-use path will be constructed along the entire length
Existing Jellison St segment (next 650' north) is 20' wide and 650' long. Will need widened by 10' the entire length and a multi-use path will be constructed along the entire length
Drainage ditch/swale will be 6' for entire length (1780-LF- Rosedell and Rice intersections excluded). Cost includes concrete curb and ditch excavation.
Striping will be single centerline strip only
ROW acquisition areas are approximated based on ROW dimensions provided by the City.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**10. Rice Lane from Elementary School to near Amity Vineyards Road**	**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, and Striping	**LENGTH (MILE):** 0.21	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.21	$217,900.00	$45,850
3	New Local Roadway	SF	7810	$4.00	$31,240
4	Existing Sidewalk Removal	SY		$5.00	$0
5	Restripe Existing Roadway	LF	1130	$2.00	$2,260
6	Drainage Ditch	LF	1130	$25.00	$28,250
7	New Signal	EA		$300,000.00	$0
8	Earthwork	CY	820	$7.50	$6,150
9	Traffic Calming	5-10%		-	$0
10	Chain Link Fence Replacement	LF	220	$20.00	$4,400
11	Mod Block Wall Replacement	SF		$50.00	$0
12	Bridges	SF		$150.00	$0
	SUBTOTAL				***$118,150***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$2,400
	TP & DT	3.0-8.0%	8.0%		$9,500
	Mobilization	8.0-10.0%	10.0%		$11,800
	Erosion Control	0.5-2.0%	2.0%		$2,400
	Contingency	30-40%	40.0%		$47,300
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
	TOTAL CONSTRUCTION COST				***$191,550***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF		$20.00	$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$28,700
	Construction Engineering		10.0%		$19,200
	TOTAL PROJECT COST				**$239,000**

Assumptions:

Improvements will occur on Rice Ln. from west side of elementary school access to 530' east of Jellison St. intersection.
Project will construct shared use path, existing pavement widening, and construct drainage ditch/swale
(2-11' Lanes, 1-8' Parking, 1-6' Ditch/Swale, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed pavement sections.
(New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6',
but additional stormwater analysis will be required.
Existing Pavement will be utilized
Rice Ln from Jellison to 580' west is 24' wide with no sidewalks. This entire length will need widened by 6'
Rice Ln from Jellison to 530' east is 22' wide with no sidewalks. This entire length will need widened by 8'
Drainage ditch/Swale assumed to be 6' wide for entire length (1110-LF). Cost includes concrete curb and ditch excavation.
A Multi-Use Path will be constructed over the entire length (1110-LF).
Striping will be single centerline stripe only
220 LF of 5' chain link fence will need to be replaced in front of school playground.
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 11. 4th St. (from OR 99W to Stanley St.)		**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.12	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.	0.10	$217,900.00	$21,873
3	New Local Roadway	SF	2600	$4.00	$10,400
4	Reconstruct Existing Roadway	Lane-Mi.		$9.00	$0
5	Restripe Existing Roadway	LF	623	$2.00	$1,246
6	Drainage Ditch	LF	530	$25.00	$13,250
7	Railroad Crossings Improvements	LF	40	$1,000.00	$40,000
8	Earthwork	CY	355	$7.50	$2,663
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$89,432***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,800
	TP & DT	3.0-8.0%	5.0%		$4,500
	Mobilization	8.0-10.0%	10.0%		$8,900
	Erosion Control	0.5-2.0%	2.0%		$1,800
	Contingency	30-40%	40.0%		$35,800
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$142,232***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$21,300
	Construction Engineering		10.0%		$14,200
			TOTAL PROJECT COST		**$178,000**

Assumptions:

Project will construct shared use path, widen existing pavement, and construct drainage ditch/street swale (2-11' Lanes, 1-8' Parking, 1-6' Swale, and 1-10 to 12' Paved Path)

Only earthwork estimated is to construct the proposed pavement sections. (New Local Roadway: 4" AC over 6" Agg. Base and Multi Use Path: 2" AC over 12" Agg. Base)

All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.

Existing Pavement will be utilized

First 270' of 4th St. is 36' wide with a 6' sidewalk on both sides of St. and 8' landscaped buffers between the sidewalk and roadway. The extg. sidewalk on the north side of the St will be removed along with 4' of extg. roadway

260' west of RR is 20' wide with gravel shoulders on both sides of St. The pavement will need widened by 10'.

A multi-use path will be constructed on the entire length of 4th St (except for RxR)

Drainage ditch/swale will be 6' for entire length of the 4th St (except for RxR). Cost includes concrete curb and ditch excavation.

The RR crossing width is the section width minus the parking lane.

Striping will be single centerline strip only

There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 12. OR 153/5th St (from OR 99W/Trade St to Park Entrance)		**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Roadway, Earthwork, Striping		**LENGTH (MILE):** 0.20	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.08	$430,000.00	$32,250
2	Multi-use Path	Mi.	0.20	$217,900.00	$43,745
3	New Roadway	SF	1470	$7.00	$10,290
4	Existing Sidewalk Removal	SY	380	$5.00	$1,900
5	Existing Roadway Removal	SY	380	$8.00	$3,040
6	Restripe Existing Roadway	LF	1060	$2.00	$2,120
7	Railroad Crossing Improvements	LF	48	$1,000.00	$48,000
8	Drainage Ditch	LF	2120	$25.00	$53,000
9	Earthwork	CY	640	$7.50	$4,803
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$199,148***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$4,000
	TP & DT	3.0-8.0%	8.0%		$15,900
	Mobilization	8.0-10.0%	10.0%		$19,900
	Erosion Control	0.5-2.0%	2.0%		$4,000
	Contingency	30-40%	40.0%		$79,700
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$322,648***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$48,400
	Construction Engineering		10.0%		$32,300
			TOTAL PROJECT COST		**$403,000**

Assumptions:

Improvements will occur on OR 153/5th St. from OR 99W to west to the park entrance.
Project will construct sidewalk improvements, construct shared use path, drainage ditch/swale, and improve rail crossing (1-12' Lane, 1-13' Lane, 1-8' Parking, 2-6' Ditch/Swales, 1-6' Sidewalk, and 1-12' Paved Path)
Only earthwork estimated is to construct the proposed paved multi use path (2" AC over 12" Agg. Base) and roadway (8" AC over 12" Agg. Base)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction (unit cost is for both sides of street)
Due to the fact of this segment being an ODOT facility, the proposed section will need to be revised to meet ODOT Standards
All Stormwater will be captured by the drainage ditch/swale. For this estimate, the width is assumed to be 6', but additional stormwater analysis will be required.
The first 300' west of OR 99W is 50' wide and will have pavement and existing sidewalk removed north side of St. (Total of 12' of pavement width (for path construction) and 6' of sidewalk width (for swales)) Extg. Sidewalk to be used
The next 265' will have 6' of pavement removal and 6' of sidewalk removal. The existing sidewalk on the north side of St will be kept in place
The final 490' has 30' of pavement and no sidewalks will need widened by 3'. All existing pavement will be utilized and new sidewalk, multi use path, and drainage ditch/swales will be constructed.
Drainage ditch/Swale assumed to be 6' wide for entire length (2120-LF)
One new RR crossing will be installed consisting of new concrete panels over entire span of crossing (no signage) Parking lane excluded from crossing width.
Striping will consist of one centerline stripe
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**13. Woodson Ave (from Oak to OR 99W/Trade St)**	**PREPARED BY:**	**DATE:**
DESIGN LEVEL:	Planning	C. Clausen	5/2/2014
KIND OF WORK:	Roadway, Sidewalk, Striping	**LENGTH (MILE):** 0.12	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.08	$430,000.00	$33,797
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	580	$4.00	$2,320
4	Existing Sidewalk Removal	SY	1740	$5.00	$8,700
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	620	$2.00	$1,240
7	Active Railroad Crossing	EA		$15,000.00	$0
8	Bicycle Shared Lane Marking	LF	620	$8.00	$4,960
9	Earthwork	CY		$7.50	$0
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$51,017***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,000
	TP & DT	3.0-8.0%	8.0%		$4,100
	Mobilization	8.0-10.0%	10.0%		$5,100
	Erosion Control	0.5-2.0%	2.0%		$1,000
	Contingency	30-40%	40.0%		$20,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$82,617***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$12,400
	Construction Engineering		10.0%		$8,300
			TOTAL PROJECT COST		**$103,000**

Assumptions:

Improvements will occur on Woodson Ave. from OR 99W to Oak Ave.
Project will add shared lane markings (2-10' Lanes, 2-7' Parking Lane, 2-5' Sidewalk)
Existing 125' east of 99W is 34' wide with sidewalk on north side. Sidewalk construction required on south side
Existing 160' is 34' wide with sidewalk on both sides(no construction needed)
Existing 290' is 32' wide with sidewalk on both sides. The sidewalk will need removed on one side of the St and will need widened by 2' over the entire length and new sidewalk construction
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: **14. S. Jellison Ave (from Roth to Church)**		**PREPARED BY:** C. Clausen	**DATE:** 8/27/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Sidewalk, Curb, and Striping		**LENGTH (MILE):** 0.20	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.09	$430,000.00	$37,136
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF		$4.00	$0
4	Existing Sidewalk Removal	SY		$5.00	$0
5	Existing Roadway Removal	SY		$8.00	$0
6	Restripe Existing Roadway	LF	1032	$2.00	$2,064
7	Railroad Crossing Improvements	LF		$1,000.00	$0
8	Bicycle Shared Lane Marking	LF	1032	$8.00	$8,256
9	Earthwork	CY		$7.50	$0
10	Traffic Calming	5-10%		-	$0
11	Illumination	Mi.		$260,000.00	$0
12	Landscaping	Mi.		$235,000.00	$0
13	Bridges	SF		$150.00	$0
			SUBTOTAL		***$47,456***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$900
	TP & DT	3.0-8.0%	8.0%		$3,800
	Mobilization	8.0-10.0%	10.0%		$4,700
	Erosion Control	0.5-2.0%	2.0%		$900
	Contingency	30-40%	40.0%		$19,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$76,756***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$11,500
	Construction Engineering		10.0%		$7,700
			TOTAL PROJECT COST		**$96,000**

Assumptions:

Improvements will occur on Jellison Ave from Church Ave. south to Roth Ave.
Project will add shared lane markings, widen/retrofit/add sidewalk where necessary,
(2-11' Lanes and 1-5' Sidewalk)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction
(unit cost is for both sides of street)
No drainage facilities considered
Existing Sidewalk for first 120' south of Church will be utilized
The existing roadway will be utilized for this project
The existing roadway will be striped with a single centerline and shared lane arrows
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**15. Church Ave (from OR 99W/Trade St to Jellison)**	**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Striping, Sidewalk, Curb	**LENGTH (MILE):** 0.18	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks No Drainage	Mi.	0.06	$430,000.00	$27,282
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	SF	5765	$4.00	$23,060
4	Existing Sidewalk Removal	SY	185	$5.00	$925
5	Existing Roadway Removal	SY	185	$8.00	$1,480
6	Restripe Existing Roadway	LF	960	$2.00	$1,920
7	Bicycle Shared Lane Marking	LF	960	$8.00	$7,680
8	Earthwork	CY	59	$7.50	$445
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	Mi.		$235,000.00	$0
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$62,792***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$1,300
	TP & DT	3.0-8.0%	8.0%		$5,000
	Mobilization	8.0-10.0%	10.0%		$6,300
	Erosion Control	0.5-2.0%	2.0%		$1,300
	Contingency	30-40%	40.0%		$25,100
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$101,792***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$15,300
	Construction Engineering		10.0%		$10,200
			TOTAL PROJECT COST		**$127,000**

Assumptions:

Improvements will occur on Church Ave. from OR 99W to Jellison St.
Project will add shared lane markings, widen/add/retrofit sidewalk where necessary
(2-11' Lanes, 1-8' Parking Lane, 1-5' Sidewalk)
Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base)
Total quantity of curb and gutter/sidewalk modified to account for single side of road construction
(unit cost is for both sides of street)
No drainage facilities considered
The first 290' east of OR 99W of roadway and sidewalk will be retrofitted to the proposed cross section.
No improvements needed.
The next 325' will be widened by widened by 5' of new roadway pavement, will have the existing 5' sidewalk
removed and replaced.
The remaining 345' will be widened by 12' and have a new sidewalk constructed.
There is no new ROW acquisition required for this project.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**16. OR 99W/Trade St.. (from 3rd St. to Rice Ln.)**	**PREPARED BY:** C. Clausen	**DATE:** 5/2/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork, Sidewalk, Curb and Gutter, and Striping	**LENGTH (MILE):** 0.53	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.71	$882,000.00	$623,915
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	SF	15370	$7.00	$107,590
4	Existing Sidewalk Removal	SY	11360	$5.00	$56,800
5	Restripe Existing Roadway	LF	8460	$2.00	$16,920
6	Drainage Ditch	LF		$25.00	$0
7	Railroad Crossings Improvements	SF		$1,000.00	$0
8	Earthwork	CY	950	$7.50	$7,125
9	Traffic Calming	5-10%		-	$0
10	Illumination	Mi.		$260,000.00	$0
11	Landscaping	SF	21520	$5.60	$120,512
12	Bridges	SF		$150.00	$0
			SUBTOTAL		***$932,862***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$18,700
	TP & DT	3.0-8.0%	8.0%		$74,600
	Mobilization	8.0-10.0%	10.0%		$93,300
	Erosion Control	0.5-2.0%	2.0%		$18,700
	Contingency	30-40%	40.0%		$373,100
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$1,511,262***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	0		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$226,700
	Construction Engineering		10.0%		$151,100
			TOTAL PROJECT COST		**$1,889,000**

Assumptions:

Project will widen existing pavement, and construct new sidewalks and landscaped buffers (2-14' Lanes, 2-6' Shoulder/Bike Lanes, and 2-6' Sidewalks)

Only earthwork estimated is to construct the proposed pavement sections. (New Roadway: 8" AC over 12" Agg. Base)

Existing Pavement will be utilized

First 430' of OR 99W is 38' wide with a 4' sidewalk on both sides of St. and 7'-10' landscaped buffers between the sidewalk and roadway. The extg. sidewalk will be removed and replaced and the extg. pavement will be widened by 1' on each side of the road.

340' north of 2nd St. is 35' wide with a 4' sidewalk on both sides of St. and 10'-12' landscaped buffers between the sidewalk and sidewalk and roadway. The extg. sidewalk will be removed and replaced and the extg. pavement will be widened by 5'

650' north of Rosedell varies in width from 44' to 35'. On east side of the St. there is a 4' sidewalk and a grass buffer (4'-10" wide) On the west side of the St. there is a 4' sidewalk and a grass buffer (10'-13'). Assuming that the pavement will need widened by an avg. of 3' over entire length and the extg. Sidewalks will be removed and replaced.

500' North of Rice Ln is 35' wide with no sidewalk. Pavement will be widened by 5' and new sidewalks and buffers will be constructed on both sides of street.

Final 830' is 32' wide and will be widened by 8'. A sidewalk and buffer will be constructed on westside of Street.

Striping will be single centerline and bike lane/edge lines only

ROW impacts are anticipated, but the costs are not included in this estimate.

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: **17. Railroad Crossing Improvements**		**PREPARED BY:** C. Clausen	**DATE:** 8/28/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Railroad Crossing Construction		**LENGTH (MILE):**	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	Lane-Mi.		$412,500.00	$0
4	Restriping Existing Roadway	Lane-Mi.		$8,700.00	$0
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.		$7.50	$0
7	Railroad Crossing Improvements	LF	40	$1,000.00	$40,000
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$40,000***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$800
	TP & DT	3.0-8.0%	5.0%		$2,000
	Mobilization	8.0-10.0%	10.0%		$4,000
	Erosion Control	0.5-2.0%	2.0%		$800
	Contingency	30-40%	40.0%		$16,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$63,600***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$9,500
	Construction Engineering		10.0%		$6,400
			TOTAL PROJECT COST		**$80,000**

Assumptions:

This project will include the construction of 1 new railroad crossing between Inez Ln and 1st St.
Crossing will need to accomodate 2-12' lanes and 2-6' sidewalks
Crossing width will be 40' (to allow for 8' precast panels)
Construction of this project will be contingent on ODOT rail permitting and may require additional safety features

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT: 1. Intersection of OR 153/Nursery Avenue and OR 99W/Trade Street		**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL: Planning			
KIND OF WORK: Signalization		**LENGTH (MILE):**	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.	0.05	$882,000.00	$44,100
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Roadway	Lane-Mi.		$412,500.00	$0
4	Restriping Existing Roadway	Lane-Mi.	0.1	$8,700.00	$870
5	New Signal	EA	1	$300,000.00	$300,000
6	Earthwork	Lane-Mi.		$7.50	$0
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$344,970***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.0%		$6,900
	TP & DT	3.0-8.0%	5.0%		$17,200
	Mobilization	8.0-10.0%	10.0%		$34,500
	Erosion Control	0.5-2.0%	2.0%		$6,900
	Contingency	30-40%	40.0%		$138,000
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$548,470***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$82,300
	Construction Engineering		10.0%		$54,800
			TOTAL PROJECT COST		**$686,000**

Assumptions:

This project will include intersection improvements and one new traffic signal.
One new 4-way signal
Curb and Gutter and sidewalk replacement on all 4 curb returns (60 LF Each)
Crosswalk, Edgeline, and Centerline Striping Replacement (50 feet back from intersection (100' on West 6th))

AMITY TSP - ORDER OF MAGNITUDE ESTIMATE

PROJECT:	**3. Intersection of Rice Lane and OR 99W/Trade Street**	**PREPARED BY:** C. Clausen	**DATE:** 4/23/2014
DESIGN LEVEL:	Planning		
KIND OF WORK:	Roadway, Earthwork	**LENGTH (MILE):** 0.11	**SHEET:** 1 of 1

NO.	ITEM	UNIT	QUANTITY	UNIT COST	COST
1	Curb, Gutter, Sidewalks & Drainage	Mi.		$882,000.00	$0
2	Multi-use Path	Mi.		$217,900.00	$0
3	New Local Roadway	Lane-Mi.	0.11	$213,300.00	$23,027
4	Reconstruct Existing Roadway	SF	7920	$9.00	$71,280
5	New Signal	EA		$300,000.00	$0
6	Earthwork	Lane-Mi.	0.11	$14,670.00	$1,584
7	Traffic Calming	5-10%		-	$0
8	Illumination	Mi.		$260,000.00	$0
9	Landscaping	Mi.		$235,000.00	$0
10	Bridges	SF		$150.00	$0
			SUBTOTAL		***$95,890***

	ADDITIONAL CONST. COSTS	SUGGESTED	PERCENTAGE		COST
	Construction Surveying	1.0-2.5%	2.5%		$2,400
	TP & DT	3.0-8.0%	8.0%		$7,700
	Mobilization	8.0-10.0%	10.0%		$9,600
	Erosion Control	0.5-2.0%	2.0%		$1,900
	Contingency	30-40%	40.0%		$38,400
	Escalation (per year)	0.5-2.0%	0.0%		$0
	Design Year				
	Construction Year		2014		
			TOTAL CONSTRUCTION COST		***$155,890***

	RIGHT OF WAY COSTS	UNIT	QUANTITY	UNIT COST	COST
	New Right of Way Acquisition	SF	**0**		$0
	Structure(s)	LS	All		$0
	ENGINEERING COSTS	**SUGGESTED**	**PERCENTAGE**		**COST**
	Design Engineering		15.0%		$23,400
	Construction Engineering		10.0%		$15,600
			TOTAL PROJECT COST		**$195,000**

Assumptions:

This project includes constructing a turn pocket on Rice Ln at the OR 99W intersection.
Only earthwork estimated is to construct the proposed pavement section. (4" AC over 6" Agg. Base)
Assuming all existing pavement within the turn pocket limits will be reconstructed and new pavement will be constructed for widening
Turn pocket New Pavement: (**570 lane-feet**)
- Turn Pocket Width: 12'
- Storage Length: 150' (no traffic study) = 150 lane-feet
- Taper length: 180' = 90 lane-feet
- Shoulder Width: 6' (both sides for entire 330') = 330 lane-feet

Pavement Reconstruction: (**7,920 SF**)
- Existing pavement for entire 330' length (24' wide)

ROW impacts are anticipated, but the costs are not included in this estimate. The ROW width at the intersection of Rice and OR 99W is only 40'. The minimum required ROW with the proposed cross section is 48'.

Unit Costs (Based on Development Pricing)

Curb, Gutter, Sidewalks, & Enclosed Drainage (Unit: Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Concrete Curb and Gutter	LF	10,560	$15.00	$158,400.00	For Both Sides of Rdwy
Concrete Sidewalk	SF	52,800	$5.00	$264,000.00	For Both Sides of Rdwy, 5' Wide
15 Inch Storm Sewer Pipe, 10' deep	LF	5,280	$65.00	$343,200.00	Long. Storm Pipe, Including Trenching/Backfill
Storm Manhole	EA	21	$2,400.00	$50,400.00	Every 250' (21 in a mile)
Standard Catch Basin	EA	42	$1,200.00	$50,400.00	Every 250' (21 in a mile*2 for both sides= 42)
			SUBTOTAL	$866,400.00	
Clearing and Grubbing - 0.6%				$5,198.40	
Removal of Structures - 1.2%				$10,396.80	
			TOTAL UNIT COST	**$882,000.00**	

Curb, Gutter, Sidewalks, No drainage (Unit: Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Concrete Curb and Gutter	LF	10,560	$15.00	$158,400.00	For Both Sides of Rdwy
Concrete Sidewalk	SF	52,800	$5.00	$264,000.00	For Both Side of Rdwy, 5' Wide
15 Inch Storm Sewer Pipe, 10' deep	LF	-	$65.00	$0.00	Long. Storm Pipe, Including Trenching/Backfill
Storm Manhole	EA	-	$2,400.00	$0.00	Every 250' (21 in a mile)
Standard Catch Basin	EA	-	$1,200.00	$0.00	Every 250' (21 in a mile*2 for both sides= 42)
			SUBTOTAL	$422,400.00	
Clearing and Grubbing - 0.6%				$2,534.40	
Removal of Structures - 1.2%				$5,068.80	
			TOTAL UNIT COST	**$430,000.00**	

Multi-use Path (Unit: Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	802	$95.00	$76,168.89	12' Lane, 5280' long, depth=2 IN, density=2.050 TN/CY
Aggregate Base	TN	5,788	$20.00	$115,768.89	12' Lane, 2' Shoulders, 5280' long, depth=12 IN, density=1.850 TN/CY
12 Inch Storm Sewer Pipe, 5' deep	LF	260	$85.00	$22,100.00	Lateral Culverts: 20' long, every 400 LF (13/mile)
			SUBTOTAL	$214,037.78	
Clearing and Grubbing - 0.6%				$1,284.23	
Removal of Structures - 1.2%				$2,568.45	
			TOTAL UNIT COST	**$217,900.00**	

Access Road (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	1,336	$95.00	$126,948.15	10' Lane, 5280' long, depth=4 IN, density=2.050 TN/CY
Aggregate Base	TN	2,532	$20.00	$50,648.89	10' Lane, 2' Shoulders, 5280' long, depth=6 IN, density=1.850 TN/CY
12 Inch Storm Sewer Pipe, 5' deep	LF	260	$85.00	$22,100.00	Lateral Culverts: 20' long, every 400 LF (13/mile)
			SUBTOTAL	$199,697.04	
Clearing and Grubbing - 0.6%				$1,198.18	
Removal of Structures - 1.2%				$2,396.36	
			TOTAL UNIT COST	**$203,300.00**	

Drainage Ditch (Unit: LF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Excavation	CY	0.4	$7.50	$3.33	3' deep and 4' wide
Landscaping	SF	1	$7.42	$6.10	Assuming 6' wide
Concrete Curb and Gutter	LF	1	$15.00	$15.00	Curb with cutouts
			SUBTOTAL	$24.43	
Clearing and Grubbing - 0.6%				$0.15	
Removal of Structures - 1.2%				$0.29	
			TOTAL UNIT COST	**$25.00**	

Existing Sidewalk Removal (Unit: SY)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Sidewalk Removal	SY		$5.00	$5.00	Assuming 6' wide sidewalk, 6" deep
			TOTAL UNIT COST	**$5.00**	

New Roadway (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	3,207	$95.00	$304,675.56	12' Lanes, 5280' long, depth=8 IN, density=2.050 TN/CY
Aggregate Base	TN	4,341	$20.00	$86,826.67	12' Lanes, 5280' long, depth=12 IN, density=1.850 TN/CY
15 Inch Storm Sewer Pipe, 10' deep	LF	130	$65.00	$8,450.00	Lateral Culverts: 13' per lane, every 250 LF (21/mile)
Excavation	CY	-	$7.50	$0.00	
Embankment	CY	-	$7.50	$0.00	See Below For Earthwork
Thermoplastic Pavement Striping	LF	5,280	$1.00	$5,280.00	1 solid stripe per lane
			SUBTOTAL	$405,232.22	
Clearing and Grubbing - 0.6%				$2,431.39	
Removal of Structures - 1.2%				$4,862.79	

TOTAL UNIT COST	**$412,500.00**	

New Local Roadway (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	1,604	$95.00	$152,337.78	12' Lanes, 5280' long, depth=4 IN, density=2.050 TN/CY
Aggregate Base	TN	2,171	$20.00	$43,413.33	12' Lanes, 5280' long, depth=6 IN, density=1.850 TN/CY
15 Inch Storm Sewer Pipe, 10' deep	LF	130	$65.00	$8,450.00	Lateral Culverts: 13' per lane, every 250 LF (21/mile)
Excavation	CY	-	$7.50	$0.00	
Embankment	CY	-	$7.50	$0.00	See Below For Earthwork
Thermoplastic Pavement Striping	LF	5,280	$1.00	$5,280.00	1 solid stripe per lane
			SUBTOTAL	$209,481.11	
Clearing and Grubbing - 0.6%				$1,256.89	
Removal of Structures - 1.2%				$2,513.77	
			TOTAL UNIT COST	**$213,300.00**	

New Roadway No Drainage (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	3,207	$95.00	$304,675.56	12' Lanes, 5280' long, depth=8 IN, density=2.050 TN/CY
Aggregate Base	TN	4,341	$20.00	$86,826.67	12' Lanes, 5280' long, depth=12 IN, density=1.850 TN/CY
15 Inch Storm Sewer Pipe, 10' deep	LF		$65.00	$0.00	Lateral Culverts: 13' per lane, every 250 LF (21/mile)
Excavation	CY	-	$7.50	$0.00	
Embankment	CY	-	$7.50	$0.00	See Below For Earthwork
Thermoplastic Pavement Striping	LF		$1.00	$0.00	1 solid stripe per lane
			SUBTOTAL	$391,502.22	
Clearing and Grubbing - 0.6%				$2,349.01	
Removal of Structures - 1.2%				$4,698.03	
			TOTAL UNIT COST	**$398,500.00**	

New Local Roadway No Drainage (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Asphalt	TN	1,604	$95.00	$152,337.78	12' Lanes, 5280' long, depth=4 IN, density=2.050 TN/CY
Aggregate Base	TN	2,171	$20.00	$43,413.33	12' Lanes, 5280' long, depth=6 IN, density=1.850 TN/CY
15 Inch Storm Sewer Pipe, 10' deep	LF		$65.00	$0.00	Lateral Culverts: 13' per lane, every 250 LF (21/mile)
Excavation	CY	-	$7.50	$0.00	
Embankment	CY	-	$7.50	$0.00	See Below For Earthwork
Thermoplastic Pavement Striping	LF		$1.00	$0.00	1 solid stripe per lane
			SUBTOTAL	$195,751.11	
Clearing and Grubbing - 0.6%				$1,174.51	
Removal of Structures - 1.2%				$2,349.01	
			TOTAL UNIT COST	**$199,300.00**	

New Roadway (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
New Roadway/SF per Lane Mile	SF	1	$6.51	$6.51	See New Roadway (Unit: Lane-Mile) for Breakdown
			TOTAL UNIT COST	**$7.00**	

New Local Roadway (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
New Roadway/SF per Lane Mile	SF	1	$3.37	$3.37	See New Local Roadway (Unit: Lane-Mile) for Breakdown
			TOTAL UNIT COST	$4.00	

New Roadway, No Drainage (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
New Roadway/SF per Lane Mile	SF	1	$6.29	$6.29	See New Roadway No Drainage (Unit: Lane-Mile) for Breakdown
			TOTAL UNIT COST	$7.00	

New Local Roadway, No Drainage (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
New Roadway/SF per Lane Mile	SF	1	$3.15	$3.15	See New Local Roadway No Drainage (Unit: Lane-Mile) for Breakdown
			TOTAL UNIT COST	$4.00	

Reconstruct Existing Roadway (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Excavation	CY	1	$7.50	$4.44	Removal of 4in. AC and 12in Aggregate Base
New Roadway	-	-	-	$4.00	See 'New Roadway' Sheet for Cost Breakdown
			TOTAL UNIT COST	$9.00	

Existing Roadway Removal (Unit: SY)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Excavation	SY		$7.50	$7.50	Removal of 8in. AC and 10in Aggregate Base
			TOTAL UNIT COST	$8.00	

Restriping Existing Roadway (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Stripe Removal	LF	5,280	$0.65	$3,432.00	1 solid stripe removed per lane
Thermoplastic Pavement Striping	LF	5,280	$1.00	$5,280.00	1 solid stripe per lane
			TOTAL UNIT COST	$8,700.00	

Restriping Existing Roadway (Unit: LF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Stripe Removal	LF	1	$0.65	$0.65	1 solid stripe removed
Thermoplastic Pavement Striping	LF	1	$1.00	$1.00	1 solid stripe
			TOTAL UNIT COST	$2.00	

Bicycle Shared Lane Marking (Unit: LF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Bike Lane Colored Marking	LF	1	$8.00	$8.00	Assuming 4 Thermoplastic "Sharrow" per 200 Linear Feet of Roadway
			TOTAL UNIT COST	$8.00	

New Signal (Unit: Each)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
New Signal	LS	1	$300,000.00	$300,000.00	Includes signal system and all appurtenances (pole, wiring, detection devices, etc.) for 1 intersection
			TOTAL UNIT COST	$300,000.00	

Earthwork Estimated (Unit: Lane-Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Excavation	CY	1,956	$7.50	$14,666.67	Removal of 8in. AC and 10in Aggregate Base
			TOTAL UNIT COST	$14,670.00	

Earthwork Estimated (Unit: CY)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Earthwork (Cut/Fill)	CY	1	$7.50	$7.50	Unit Cost
			TOTAL UNIT COST	$7.50	

Illumination (Unit: Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Luminaire and appurtenances	EA	52	$ 5,000.00	$260,000.00	Luminaire, pole, wiring, etc. (1 pole on each side every 200'=52 poles)

			TOTAL UNIT COST	$260,000.00	

Illumination (Unit: EA)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Luminaire and appurtenances	EA	1	$ 5,000.00	$5,000.00	Per Each Luminaire Estimated Cost
			TOTAL UNIT COST	$5,000.00	

Landscaping (Unit: Mile)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Landscaping	LS	1	$ 235,000.00	$235,000.00	Plantings, Trees, Topsoil, and Irrigation sums up to approximately $235,000 per mile (for both sides of roadway)
			TOTAL UNIT COST	$235,000.00	

Landscaping (Unit: Square Foot)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Landscaping	SF	1	$ 5.56	$5.56	Per mile landscaping cost divided by 2-4' planter widths at 5,280 LF
			TOTAL UNIT COST	$5.60	

Bridges - Short Span (Unit: Square Foot)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
	SF	1	$185.00	$185.00	The cost of this item is project dependent
			TOTAL UNIT COST	$185.00	

Right-of-Way - Undeveloped (Unit: Square Foot)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Right-of-Way Acquisition	LS	1	$5.00	$5.00	ROW acquisition cost is approx. $5/SF
			TOTAL UNIT COST	$5.00	

Right-of-Way - Developed (Unit: Square Foot)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Right-of-Way Acquisition	LS	1	$8.00	$8.00	ROW acquisition cost is approx. $5/SF
			TOTAL UNIT COST	$8.00	

Pedestrian Crossing Assembly with Rapid Flashing Beacons (Unit: EA)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
2L RRFB	EA	1	$31,000.00	$31,000.00	Includes signs S1-1, W16-7P, solar panel, post, button actuator
Concrete Island	SF	350	$12.00	$4,200.00	
Thermoplastic Pavement Striping	SF	200	$10.00	$2,000.00	Stop Bars and Crosswalks
			TOTAL UNIT COST	$37,200.00	

Active Railroad Crossing (Unit: EA)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Active RR Crossing	EA	1	$15,000.00	$15,000.00	Includes signs S1-1, W16-7P, solar panel, post, button actuator
			TOTAL UNIT COST	$15,000.00	

Railroad Crossing Improvements (Unit: LF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
RR Crossing Improvement (Concrete Panels)	LF	1	$1,000.00	$1,000.00	Includes concrete panels across width of crossing (panels are pre-cast in lengths of 8' so quantity is rounded up to the nearest multiple of 8) Only travel lanes (roadway, bike lane, and sidewalks) are included in crossing length.
			TOTAL UNIT COST	$1,000.00	

Bollard (Unit: EA)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Bollard	EA	1	$2,000.00	$2,000.00	
			TOTAL UNIT COST	$2,000.00	

Chain Link Fence Replacement (Unit: LF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
5' Chain Link Fence Replacement	LF	1	$20.00	$20.00	
			TOTAL UNIT COST	$20.00	

Mod Block Wall Replacement (Unit: SF)

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Mod Block Wall Replacement	SF	1	$50.00	$50.00	
			TOTAL UNIT COST	$50.00	

RIGHT OF WAY

ITEM	UNIT	AMOUNT	UNIT COST	TOTAL	COMMENTS
Rural residential/undeveloped	SF	1	$4.00	$4.00	
Residential	SF	1	$20.00	$20.00	
			TOTAL UNIT COST	$4.00	

Unit Cost Descriptions

ITEM	DESCRIPTION	UNIT	UNIT PRICE
Curb, Gutter, Sidewalks & Enclosed Drainage	~0.5-ft curb, 1.5-ft gutter pan and 7-ft wide sidewalk (each side) ~18-inch concrete pipe storm system w/ 2-ft of cover ~Storm manhole every 500 LF ~Standard catch basin every 250 LF (each side of the roadway)	Mile	#REF!
Bike Boulevard	Separated bike facility: ~11-ft wide, 2-in of AC and 12-in of aggregate base ~Clearing and grubbing and removal of structures are included ~20-ft long 12-in culverts every 400 LF	Mile	#REF!
New Roadway	~Subgrade preparation, 6-in of AC, 14-in of aggregate base ~Clearing/grubbing, removal of struct. ~18-in culverts every 500 LF. ~1 solid stripe of thermoplastic pavement striping per lane	Lane-Mile	#REF!
Overlay Existing Roadway	~Grinding 25% of existing surface and 2-in of new AC ~1 solid stripe of thermoplastic pavement striping per lane	Lane-Mile	#REF!
Reconstruct Existing Roadway	Removal of existing roadway and rebuilding a new facility: ~Removal cost of 4-in AC and 14-in aggregate base ~"New Roadway" cost (listed above)	Lane-Mile	#REF!
Intersection Widening	Widening two approaches of an existing intersection: ~4 lanes for 150 LF (2 left turn lanes and 2 right turn bay) ~Demolition of all approach curbs and sidewalks. ~6-in AC and 14-in aggregate base ~Curb, gutter, and sidewalk ft 300 LF per approach ~Relocation of obstructions, clearing/grubbing, landscaping ~2 solid stripes of thermoplastic pavement striping per lane	Each	#REF!
Roundabouts	Cost to construct 1-lane roundabout at existing intersection: ~4 lanes for 150 LF (2 left turn lanes and 2 right turn bay) ~Demolition of all approach curbs and sidewalks. ~6-in AC and 14-in aggregate base ~Curb, gutter, and sidewalk ft 300 LF per approach ~Relocation of obstructions, clearing/grubbing, landscaping ~2 solid stripes of thermoplastic pavement striping per lane	Each	#REF!
Restriping Existing Roadway	~Removal of existing striping and restriping of existing facility	Lane-Mile	#REF!
Interconnect Signal	~Lump sum cost to interconnect signal system	Lump Sum	#REF!
New Signal	~The signal system and all appurtenances (pole, wiring, detection devices, etc) for one intersection	Each	#REF!
Signal Modifications	~All evaluations and modifications	Each	#REF!
Earthwork Calculated	~Cut/Fill from InRoads Earthwork Calculator	LS	#REF!
Earthwork Estimated	Estimated Based on Roadway Section	CY	#REF!
Illumination	~luminaire, pole, wiring, and all other appurtenances ~one light pole on each side of the roadway every 200 LF	Mile	#REF!
Landscaping	~Plantings, topsoil, and irrigation requirements	Mile	#REF!
Bridges	~Based on estimated square footage of bridge	Square Foot	VARIES
Walls	~Cost of Standard Retaining Wall	Square Foot	#REF!

Additional Construction & Engineering Costs

ITEM	DESCRIPTION		
General Construction Costs	Insert the desired percentage from the common range for each factor: ~Construction Surveying: 1.0-2.5% ~Temporary Protection and Direction of Traffic: 3.0-8.0% ~Mobilization: 8.0-10.0% ~Erosion Control: 0.5-2.0%		
Contingency Factor	General Contingency for Construction Costs: 30-40%.		
Escalation Factor	Given the year and escalation percentage, this estimate can roughly approximate yearly inflation of prices: ~Insert the desired yearly percentage from the common range: 0.5-2.0% ~Insert the design year (must be 2007 or later) ~Insert the construction year (must be design year or later)		
Right-of-Way	Basic ROW estimator based on anticipated ROW area to be acquired	Square Foot	#REF!
Engineering Costs	Calculated as a percentage of the total Construction Costs: ~Design Engineering: 13.0% ~Construction Engineering: 10.0%		

YAMHILL COUNTY

Name: OR153: SALT CREEK (ASH SWALE) BRIDGE #05041
Hwy/St: BELLEVUE-HOPEWELL
Route: OR-153
Milepoints: 5.78 to 5.98
ACT/AREA: MWACT
MPO: Non-MPO

	Total Cost:	Year:	1st Fund:	Share:	2nd Fund:	Share:	3rd Fund:	Share:	Prior Yr:	Share:
Planning:	$0									
Design:	$298,000	2009	STP	$267,395						
Land Purchase:	$695,000	2010	STP	$623,624						
Utility Reloc:	$0									
Construction:	$13,460,000	2011	STP	$12,077,658						
Other:	$0									
Total:	$14,453,000									

Applicant: ODOT
Status: Const. scheduled to begin in 2011
Work type: Bridge
Description: REPLACE BRIDGE #05041
Key: 14809

Name: OR18 @ GOPHER VALLEY ROAD
Hwy/St: SALMON RIVER
Route: OR-18
Milepoints: 34.70 to 35.00
ACT/AREA: MWACT
MPO: Non-MPO

	Total Cost:	Year:	1st Fund:	Share:	2nd Fund:	Share:	3rd Fund:	Share:	Prior Yr:	Share:
Planning:	$0									
Design:	$51,000	2007								
Land Purchase:	$0									
Utility Reloc:	$0									
Construction:	$458,000	2009	HSIP	$304,105					HSIP	$118,263
Other:	$0									
Total:	$509,000									

Applicant: ODOT
Status: Const. scheduled to begin in 2009
Work type: Safety
Description: RIGHT TURN DECEL LANE AND OTHER SAFETY IMPROVEMENTS
Key: 14918

Name: NEWBERG-DUNDEE TRANS IMPR PROJECT #2
Hwy/St: PACIFIC WEST
Route: OR-99W
Milepoints: 0.00 to 0.00
ACT/AREA: MWACT
MPO: Non-MPO

	Total Cost:	Year:	1st Fund:	Share:	2nd Fund:	Share:	3rd Fund:	Share:	Prior Yr:	Share:
Planning:	$0									
Design:	$0									
Land Purchase:	$35,796,000	2008	EARMK	$21,199,036	NHS	6423950	OTIA III	$3,937,560	NHS	$963,593
Utility Reloc:	$0									
Construction:	$0									
Other:	$0									
Total:	$35,796,000									

Applicant: ODOT
Status: Land Purchase 2008
Work type: Modernization
Description: DEVELOPMENT AND ROW ACQUISITION
Key: 12819

Name: OR99W: SUNSET (SHERWOOD)-BRUTSCHER ST (NEWBERG)
Hwy/St: PACIFIC WEST
Route: OR-99W
Milepoints: 16.67 to 21.82
ACT/AREA: MWACT
MPO: Non-MPO

	Total Cost:	Year:	1st Fund:	Share:	2nd Fund:	Share:	3rd Fund:	Share:	Prior Yr:	Share:
Planning:	$0									
Design:	$303,000	2008							NHS	$271,882
Land Purchase:	$0									
Utility Reloc:	$0									
Construction:	$6,307,000	2010	NHS	$5,659,271						
Other:	$0									
Total:	$6,610,000									

Applicant: ODOT
Status: Const. scheduled to begin in 2010
Work type: Pavement Preservation
Description: OVERLAY
Key: 14791

Name: OR99W @ MCDANIEL LANE
Hwy/St: PACIFIC WEST
Route: OR-99W
Milepoints: 35.70 to 36.36
ACT/AREA: MWACT
MPO: Non-MPO

	Total Cost:	Year:	1st Fund:	Share:	2nd Fund:	Share:	3rd Fund:	Share:	Prior Yr:	Share:
Planning:	$0									
Design:	$20,000	2006								
Land Purchase:	$22,000	2007								
Utility Reloc:	$0									
Construction:	$225,000	2008	STPSFTY	$202,500						
Other:	$0									
Total:	$267,000									

Applicant: ODOT
Status: Const. scheduled to begin in 2008
Work type: Safety
Description: INSTALL TRAFFIC SEPARATOR, SIGNAL INTERCONNECTION
Key: 13662

Appendix F

Policy Revisions, Implementing Ordinances, Revisions to Street Standards

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Technical Memo: Draft Policy and Code Amendments

November 13, 2014

Introduction

This memo reviews the transportation code issues and address deficiencies or corrections needed in the City of Amity Comprehensive Plan and Land Use codes. The City of Amity Comprehensive Land Use Plan was adopted in May 1979 and the City of Amity Land Use Development Code was last amended in September 2003. These amendments are intended to look at three levels of revisions. 1) Revision due to the Transportation Planning Rule (TPR); 2) Revisions to the City of Amity Policies; and 3) Revisions necessary to remove conflicts between the code and the Amity Public Works Design Standards.

This memo reviews recommended revisions or additions to Amity City Code in order to implement the Transportation System Plan (TSP) and discusses recommended policy revisions or additions, based on the existing policies in the Comprehensive Plan.

This memo also provides a written description of the needed revision, a discussion of the potential impacts (positive and negative) when applicable, and will provide the proposed revision. The project team developed the proposed revisions based on the existing and anticipated future needs identified by the City, community, and the project team. **Appendix B** will contain the full code revision language.

Transportation Policy

The following details the current 1979 Transportation policy found in the Amity Comprehensive Plan. Revisions are shown below with ~~strikethrough~~ text indicating text deletions and <u>underlined</u> text proposed additions.

1. Existing Transportation Policy

TRANSPORTATION

Amity suffers from traffic problems typical of communities which have major highways passing through the core commercial areas. These problems include speeding, on-street parking and pedestrian hazards. Through agency coordination and local improvement programs, the City's goal is to improve present traffic conditions.

Providing varying modes of transportation are also important in meeting the total needs of the community. Diversified transportation will provide greater convenience and lower costs to citizens.

FINDINGS

The condition of Amity's streets is generally adequate for the existing traffic load, although most streets are in need of paving. Improvements in the street conditions will be necessary to accommodate substantial increases in traffic.

The City of Amity, the State Highway Division and Yamhill County are responsible for the maintenance of streets in the planning area, curbs and sidewalks exist on very few of the City's streets.

~~There are no plans for road improvements on State roads within the planning area for at least the next 6 years.~~

~~Traffic volumes have increased by between 5 and 29 percent on monitored roads over the 5 year period from 1972 to 1977.~~

The most serious traffic hazards exist along Highway 99W (Trade Street) and the Bellevue-Hopewell Highway (Fifth and Nursery Streets), primarily due to traffic volumes and on-street parking.

The ~~Southern~~ Union Pacific Railroad owns the rail facilities in Amity, Portland & Western maintains and operates rail freight service in Amity on tracks running through the western portion of the City; the nearest available passenger service is in the City of Salem. ~~air service is in the City of McMinnville.~~

For regularly scheduled commercial flights citizens generally travel to the Portland ~~General~~ International Airport.

~~Yamco Transit and Greyhound Lines~~ Yamhill County Transit provide the City of Amity with a level of public transportation.

Walking and biking are attractive transportation modes despite the lack of adequate facilities.

Side streets serve as the primary routes for pedestrians and bicyclists.

~~A portion of the County's share of State gas monies is available to the City for the construction and maintenance of bicycle paths.~~

GOAL STATEMENT

To provide a safe, convenient, aesthetic, and economic transportation system through a variety of transportation means.

POLICIES

The City shall coordinate with Yamhill County and the Oregon Department of Transportation with regard to City actions and needs which may affect traffic on County and State roads within the Urban Growth Boundary.

Transportation improvements shall be used to guide urban development and be designed to serve anticipated future needs.

Transportation facility design shall be done in a manner consistent with city design standard and the Transportation System Plan (TSP), and which will minimize adverse effects on the existing land uses and natural features.

~~Alternative modes of transportation that will be energy conserving and will provide maximum efficiency and utilization of existing facilities shall be promoted.~~

The city shall adopt a street functional classification system consisting of ~~A~~arterials, collectors, and ~~minor~~ local streets ~~within the planning area shall be designated~~ to assist in prioritizing street development and maintenance.

All possible sources of funding for street improvements shall be investigated and the City shall ~~upgrade City streets~~ make transportation improvements as funds become available.

~~Transportation improvements which address t~~ The special needs of ~~the~~ low-income, disabled ~~the handicapped~~ and senior citizens shall be ~~promoted~~ considered when making improvements to the transportation system.

The City shall coordinate with the Union Pacific Railroad and Portland & Western Railroad ~~Southern Pacific Railroad for any future need to expand rail service in Amity as well as~~ to ensure maximum safety at all street and railway intersections.

The City shall ~~continue to~~ support and encourage use of ~~the existing~~ public transit ~~system and to encourage its continuance~~ and coordinate with Yamhill County Transit Area (YCTA) on service changes or bus route modifications.

The city shall coordinate with Yamhill County in the development of a countywide bicycle plan.

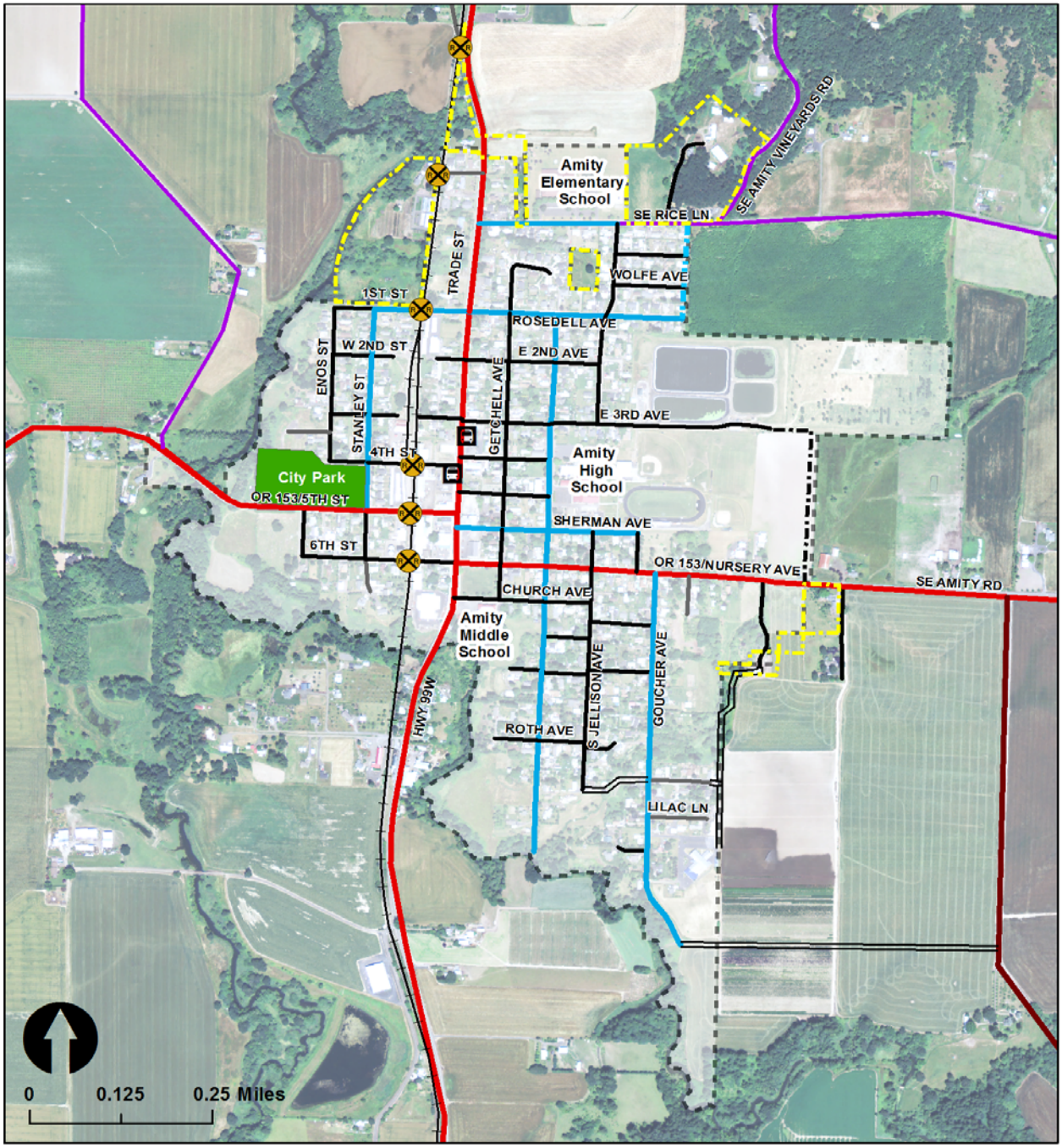
The City shall investigate funding sources for projects which would promote bicycle and pedestrian transportation in the Urban Growth Boundary.

~~Hazardous traffic conditions shall be examined in detail and recommendations for improvements shall be made through a systematic capital improvement plan.~~

2. Additional Proposed Transportation Policies

Need	Basis	Proposed policy language
General policy supporting a multi-modal transportation system	Consistency with state policies in the Oregon Transportation Plan (OTP): Policy 1.1 - Development of an integrated multi-modal system and 1.2 – Equity, Efficiency, and Travel Choices	*The City shall promote a multi-modal transportation system that adequately considers the needs of drivers, pedestrians, cyclists, and public transit riders.*
General policy that supports improving transit service, as appropriate	Though transit service is limited in Amity, it is an essential component of the transportation system, especially for disadvantaged citizens and those without cars.	*The City shall take advantage of opportunities to improve the public transit system as they arise.*
Policies related to freight mobility, specifically with regard to complying with recent freight system preservation statues and rules.	Consistency with state policies in the OTP (Policy 1C – State highway freight system) and Oregon Highway Plan (OHP) (Policy 4A – Efficiency of freight movement); recognizing recently adopted statutes (ORS 366.215) and associated rules (OAR 731-012) that govern freight route preservation	*The City shall coordinate with the Oregon Department of Transportation on improvements to state highways within the City to ensure the needs of freight are adequately considered.*

Need	Basis	Proposed policy language
Policy stating City's interest in improving transportation safety for all modes	Need for new policy on transportation safety; consistency with Goal 5 of the OTP	*The City shall strive to create a transportation system that is safe for all users. Addressing existing or newly discovered safety issues is a top priority for the City.*
Policy on construction of new streets	The TSP includes a set of capital projects and proposed alignments for new streets that should be considered when constructing new streets.	*New public streets shall be located based on the proposed alignments in the Transportation System Plan. New public streets shall be designed according to relevant municipal code and adopted street standards.*
Policy on re-construction of existing streets	Amity's street standards include standards for new development. The TSP includes planned projects on many existing streets. Infill projects that are required to make frontage improvements should consider the improvements proposed (if any) and construct frontage improvements appropriately. This issue should also be addressed in the municipal code.	*When upgrading or reconstructing existing City streets, the relevant planned project, if any, in the Transportation System Plan or Capital Improvement Program shall be considered in the design of the project.*



Amity Transportation System Plan
Functional Classification Plan (2038)

Notes:
(1) Streets data from Yamhill County and CH2MHILL
(2) Railroads digitized by CH2MHILL based on 2012 USGS aerial photography

Date: 10/27/2014

Legend

- City Limits
- Urban Growth Boundary
- Parks
- Bus stops
- Railroad Crossings

Streets

- Arterial (State Hwy)
- County Arterial
- Collector
- County Collector
- Local
- Private
- Railroad
- Future Local*
- Future Local
- Future Collector

*Note: There are three options for improving street connectivity in the vicininty of Goucher Avenue. Only one of the options would be built, but no one option is recommended in the TSP. Therefore, all three are shown as Future Local Streets.

Land Use Code Amendments

Review of the existing Land Use Development Code revealed the need to revise several sections to achieve the desired results and be consistent with the proposed Transportation System Plan, current Oregon Administrative Rules and the Amity Public Works Design Standards (APWDS).

1. Transportation Planning Rule

The code revisions recommended to comply with the TPR (660-012) and access management (OAR 734-51) are outlined in Table 1. Exact language is not always discussed and will be worked out by the Amity Planning Commission and Amity City Council during a Joint Workshop. The intent of this section is to provide a synopsis of the requirement and proposed solution to obtain an overall concurrence from the Technical and Project Advisory Committees.

2. Proposed Code Additions

The evaluation of the existing land use code for compliance with the TSP and the TPR revealed the need to provide new code sections to bring the code into full compliance. The recommended codes to be added are included in Appendix A.

3. Code Conflict Amendments

The code revisions recommended to eliminate existing conflicts between the Comprehensive plan, Development Code and Design Standards are outlined in Table 2. These include discussions on street standards which are being influenced more and more by other factors including the Americans with Disabilities Act (ADA) and Stormwater Management Requirements.

4. Street Standards

Street standards are continuously evolving due to other influences such as ADA and storm water management requirements. We are proposing to remove all street standards from the Amity municipal Code (AMC) and refer to the Amity Public Works Design Standards (APWDS) for current street standard requirements. The recommended revised street standards are included in Appendix C.

Next Steps

The code amendments identified above and general policy determined shall govern the final code amendments and policy changes to be discussed at a joint City Council and Planning Commission workshop prior to adoption.

Table 1

	Code/Section	Requirement	Action	Proposal
	Transportation Planning Rule (TPR), OAR 660-012			
1	**660-012-0035 (3)(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	Amend code to explicitly require bicycle parking as part of new development.	ADD LANGUAGE TO EACH APPLICABLE SECTION REFERING TO AMC 2.203.11
2	**660-012-0045 (1)**	(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), consistent with the provisions of 660-012-0065; and (D) Changes in the frequency of transit, rail and airport services.	Amend the code to allow transportation improvements (as defined in 660-012-0045 (1)) in all zones, provided that the proposed improvements implement the transportation system plan and/or can be shown to be consistent with adopted policy.	THIS LANGUAGE CAN SIMPLY BE CUT AND PASTED TO THE EXISTING PERMITTED USES IN ALL ZONES.
3	**660-012-0045 (3)(b)**	Require that on-site facilities be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, and other types of development	Amend code to require provision of pedestrian and bicycle facilities within the development types listed in this OAR section.	ADD LANGUAGE TO EACH APPLICABLE SECTION
4	**660-012-0045 (3)(b)(B)**	Bikeways shall be required along arterials and major collectors. Sidewalks shall be required along arterials, collectors and most local streets in urban areas.	Amend the design standards and city code to require bikeways on collectors and higher classifications, and require sidewalks on streets.	SEE APPENEDIX A - STREET STANDARDS AND REVISE THE APWDS.

	Code/Section	Requirement	Action	Proposal
5	**660-012-0045 (2)(a)**	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, including access standards	Amend the code to include access management standards. Other provisions of this section are not applicable.	SEE PROPOSED SECTION 2.211 BELOW
6	**660-012-0045 (3)(c)**	Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;	Ensure that subdivision/development code includes explicit requirements for accommodating bicycles and pedestrians.	SEE APPENEDIX A - STREET STANDARDS AND REVISE THE APWDS.
7	**660-012-0045 (3)(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.	Ensure the subdivision/development code addresses accessways and pedestrian circulation generally.	SEE PROPOSED SECTION 2.211 BELOW
8	**660-012-0045 (1)(b)**	Many 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.	Amend the code to explicitly allow transportation facilities consistent with the TSP in all zones; add definition of “transportation facilities” that is consistent with the TPR.	SEE ITEM 2 ABOVE AND USE THAT LANGUAGE IN ALL ZONES. ADD DEFINITON "Transportation Facilities" means any physical facility that moves or assist in the movement of people or goods including facilities identified in OAR 660-012-0020 but excluding electricity, sewage and water systems. “
8	**660-012-0045 (2)(a)**	Access control measures	Code should establish access control measures for development review and subdivisions, 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	SEE PROPOSED SECTION 2.211 BELOW

			limiting development on rural lands to rural uses and densities (also see OAR 734-051 below).	
10	**660-012-0045 (2)(b)**	Standards to protect future operation of roads, transitways and major transit corridors.	TIA or TIS requirements should ensure that the jurisdiction is provided with adequate information with which to determine the impacts of land use decisions on the transportation system. Requirements should include: • Applicability/thresholds (such as access onto an ODOT facility, number of trips, etc.) • Submittal requirements • Approval criteria. • Ability to condition approval to require needed transportation improvements.	SEE PROPOSED SECTION 2.212 BELOW
11	**660-012-0045 (2)(g)**	Regulations assuring amendments to land use designations, densities, design standards are consistent with the function, capacities, and levels of service of facilities designated in the TSP.	Criteria for plan/zone change approval and text amendments should require compliance with statewide planning goals, etc. including a reference to TPR Section –0060. for example, "X. LAND USE DISTRICT MAP AND TEXT AMENDMENTS. F.	**SECTION 3.110.03(G) *Transportation Planning Rule Compliance*. When a development application includes a proposed comprehensive plan amendment or land use district change, the proposal shall be reviewed to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012-0060 (the Transportation Planning Rule – TPR) and the Traffic Impact Study provisions.**
	Access Management, OAR 734-051			
1	**734-051 (entire section)**	This section of OAR details access management standards for state facilities, including procedures for allowing new public and private connections to state highways.	Amity has two state highways – OR 99W and OR 153. The code should be amended to make explicit reference to this OAR section and note that state standards apply for any new private or public connections to either highway .	SEE PROPOSED SECTION 2.211 BELOW

Table 2

Section	Action	Proposal
2.202 Street Standards	Consistency with other code changes.	Add code references as needed.
2.202.03 (E) General Provisions (Existing Streets)	Consistency with other code changes.	Add code language referring to proposed street standards for existing streets.
2.202.03 (I) General Provisions (Grades and Curves)	Consistency with other codes.	Verify and/or modify language to conform with other standards.
2.202.03 (K) General Provisions (Clear Vision Areas)	Consistency with other codes.	Verify and/or modify language to conform with other code changes.
2.202.04 General Right-of-way and Improvement widths.	Eliminate conflict between APWDS, ADA and AMC.	Remove from AMC and reference the current APWDS.
2.202.05 – Modification of Right-of-way and Improvement width.	Amend due to changes in AMC 2.202.04	
2.202.06 Private Streets	Consistency with other codes.	Modify for compliance with Acess and circulation requirements, APWDS, ADA and other applicable codes.
2.202.07 Access Easements	Consistency with other codes.	Modify for compliance with APWDS, ADA and other applicable codes.
2.203 Off-street Parking and loading	Consistency with access and circulation requirements	Add call referencing new code.
2.203.11 Bicycle Parking	Consistency with access and circulation requirements	
2.208 Development Standards for Land Divisions	Consistency with other code changes.	Verify code references and standards with other sections.
2.209.08 Vision Clearance	Consistency with access and circulation requirements	Verify and/or modify language to conform with other code changes.
2.304 Manufactured Home Parks	Consistency with other code changes.	Verify/Remove design standards dictated by other codes/rules.

Other Sample Code Changes

New language that is proposed to be added is underlined and proposed deletions are ~~strikethrough~~.

1. Amity Development Code X.XXX

The proposed streets, roads, sidewalks, bicycle lanes, pathways, utilities, and surface water management facilities are laid out so as to conform or transition to the plats of subdivisions and maps of major partitions already approved for adjoining property as to width, general direction and in all other respects. All proposed public improvements and dedications are identified on the preliminary plat.

On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle accessways within new subdivisions, multi-family, commercial and industrial developments.

2. Amity Development Code 1.200.02 Definitions

Accessways: a walkway that provides pedestrian and or bicycle passage either between streets or from a street to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and additional land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses. Accessways through parking lots are generally physically separated from adjacent vehicle parking or parallel vehicle traffic by curbs or similar devices and include landscaping, trees and lighting. Where accessways cross driveways, they are generally raised, paved or marked in a manner which provides convenient access for pedestrians.

3. Amity Development Code 2.208.05(H) Pedestrian Facilities and Bicycle Ways

Sidewalks shall be installed along both sides of each public street and in any pedestrian or bicycle accessways within the land division as well as along all frontages to existing streets. Sidewalks and paths shall be extended as required to connect to other sidewalk systems. The City may defer on-site pedestrian and bicycle accessway ~~sidewalk~~ construction until dwellings or structures fronting the sidewalk are constructed. Any required off-site sidewalks, sidewalks fronting public property, or sidewalks adjacent to existing structures shall not be deferred.

Appendix A1 - Access Management

Suggested addition to the City of Amity code regarding access management.

2.211 ACCESS MANAGEMENT

2.211.01 Purpose

The purpose of this chapter is to ensure that developments provide safe and efficient access and circulation for pedestrians and vehicles. The Code provides standards for vehicular, bicycle and pedestrian access and circulation.

2.211.02 Applicability

This chapter shall apply to all public streets within the city and to all properties that abut these streets.

2.211.03 Access permit required.

Access to a public street requires an Access Permit (a Type I permit) in accordance with the following procedures:

A. Permits for access to City streets shall be subject to review and approval by the City Engineer based on the standards contained in this Chapter, the Amity Street Standards, the Transportation System Plan, and/or the Uniform Fire Code as applicable. An access permit may be in the form of a letter to the applicant, attached to a land use decision notice, or included as part of the development review/building permit approval.

B. Permits for access to State highways shall be subject to review and approval by the Oregon Department of Transportation (ODOT) and by the City. Except when ODOT has delegated this responsibility to the City, In that case, the City shall determine whether access is granted based on its adopted standards.

C. Permits for access to County roads shall be subject to review and approval by Yamhill County and the city, except where the County has delegated this responsibility to the City, in which case the City shall determine whether access is granted based on adopted City standards.

2.211.04 Conditions of approval.

The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording reciprocal access easements (i.e., for shared driveways), installation of traffic control devices or traffic safety devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street, excepting for single-family or duplex residential uses. The City is authorized to require greater requirements for access in accordance with the adopted city

standards for permits issued by any jurisdiction within the city limits.

2.211.05 Access Spacing Standards. **NEED LANGUAGE "UNLESS OTHERWISE UNABLE" THERE SIMPLY MAY NOT BE ROOM TO DEVELOP AT THESE NUMBERS.**

Access spacing is divided into two categories: Public Street Intersections and Private Access Driveways. Tables X and X include standards for both categories.

Table X

Public Street Intersection Spacing Standards

Functional Classification	Public Intersection Spacing
Arterial	100 feet
Collector	100 feet
Local Street (includes streets designated as Commercial Streets)	50 feet

Table X

Private Access Driveway Spacing Standards

Functional Classification	Driveway Spacing
Arterial	40 feet
Collector	20 feet
Local Street (includes streets designated as Commercial Streets)	10 feet

2.211.06 Vehicular Access and Circulation

The intent of this section is to manage vehicle access to development through a connected street system, while preserving the flow of traffic in terms of safety, roadway capacity, and efficiency. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the city's transportation system plan. Major roadways including highways, arterials, and collectors, serve as the primary system for moving people and goods. Access management is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function. This section attempts to balance the right of reasonable access to private property with the right of the citizens of the city and the state of Oregon to safe and efficient travel. It also requires all developments to construct planned streets (arterials and collectors) and to extend local streets.

To achieve this policy intent, state and local roadways have been categorized in the comprehensive plan by function and classified for access purposes based upon their level of importance and function. Regulations have been applied to these roadways for the purpose of reducing traffic accidents, personal injury, and property damage attributable to access systems, and to thereby improve the safety and operation of the roadway network. This will protect the substantial public investment in the existing transportation system and reduce the need for expensive remedial measures. These regulations also further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road

and access systems and discouraging the unplanned subdivision of land.

A. Traffic Study Requirements. The city or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See also AMC 3.112, Transportation improvements.)
B. Access Options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (a minimum of 10 feet per lane is required). These methods are "options" to the developer/subdivider, unless one method is specifically required by Division 2 (i.e., under Special Standards for Certain Uses).
    1. Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.
    2. Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.
    3. Option 3. Access is from a public street adjacent to the development parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (C) of this section.
    4. Subdivisions Fronting Onto an Arterial Street. New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).
    5. Double-Frontage Lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. Except for corner lots, the creation of new double-frontage lots shall be prohibited in the residential district, unless topographic or physical constraints require the formation of such lots. When double-frontage lots are permitted in the residential district, a landscape buffer with trees and/or shrubs and ground cover not less than 10 feet wide shall be provided between the backyard fence/wall and the sidewalk or street; maintenance shall be assured by the owner (i.e., through homeowner's association, etc.).
    6. Important Cross-References to Other Code Sections. Other sections may require buildings placed at or near the front property line and driveways and parking areas to be oriented to the side or rear yard. The city may require the dedication of public right-of-way and construction of a street (e.g., frontage road, alley or other street) when the development impact is proportionate to the need for such a street and the street is identified by the comprehensive plan or an adopted local streets plan.
C. Access Spacing. Driveway accesses shall be separated from street intersections in accordance with the following standards and procedures:

1. Local Streets. A minimum of 35 feet separation as measured from the sides of the driveway to a parallel street right-of-way shall be required, except as provided in subsection (C)(3) of this section.
2. Arterial and Collector Streets. Access spacing on collector and arterial streets and at controlled intersections (i.e., with four-way stop sign or traffic signal) shall be determined based on the policies and standards contained in the city's transportation system plan or Manual for Uniform Traffic Control Devices.
3. Special Provisions for All Streets. Direct street access may be restricted for some land uses, in conformance with the provisions of Division 2, Land Use Districts. For example, access consolidation, shared access, and/or access separation greater than that specified by subsections (C)(1) and (C)(2) of this section, may be required by the city, county or ODOT for the purpose of protecting the function, safety and operation of the street for all users. (See subsection (E) of this section.) Where no other alternatives exist, the permitting agency may allow construction of an access connection along the property line farthest from an intersection. In such cases, directional connections (i.e., right in/out, right in only, or right out only) may be required.

D. Number of Access Points. For single-family dwellings, one street access point is permitted per lot, when alley access cannot otherwise be provided. Two access points may be permitted for duplex or multifamily housing (i.e., no more than one access per street), subject to the access spacing standards in subsection (C) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (E) of this section, in order to maintain the required access spacing and minimize the number of access points.

E. Shared Driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

1. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
2. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval (Chapter X.XXX AMC) or as a condition of site development approval (Chapter X.XXX AMC).
3. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.

F. Street Connectivity and Formation of Blocks Required. In order to promote efficient vehicular

and pedestrian circulation throughout the city, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, bicycle or pedestrian pathways, in accordance with the following standards:

1. Block Length and Perimeter. The maximum block length and perimeter shall not exceed:
   a. Six hundred feet length and 1,600 feet perimeter in the residential districts;
   b. Four hundred feet length and 1,200 feet perimeter in the commercial districts, except as provided by AMC X.XXX, Block layout and building orientation;
   c. Not applicable to the industrial districts.
2. Street Standards. Public and private streets shall also conform to APWDS, Transportation improvements, AMC 2.211.06, Pedestrian access and circulation, and applicable Americans with Disabilities Act (ADA) design standards.
3. Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of AMC 2.211.06(D). Pathways shall be located to minimize out-of-direction travel by pedestrians and may be designed to accommodate bicycles.

G. Driveway Openings. Driveway openings or curb cuts shall be the minimum width necessary to provide the required number of vehicle travel lanes (10 feet for each travel lane). The following standards (i.e., as measured where the front property line meets the sidewalk or right-of-way) are required to provide adequate site access, minimize surface water runoff, and avoid conflicts between vehicles and pedestrians:

1. Single-family and duplex dwellings uses shall have a minimum driveway width of 10 feet and a maximum width of 24 feet.
2. Multiple-family uses with between three and seven dwelling units shall have a minimum driveway width of 20 feet and a maximum width of 24 feet.
3. Multiple-family uses with more than seven dwelling units, and off-street parking areas with 16 or more parking spaces, shall have a minimum driveway width of 24 feet and a maximum width of 30 feet. These dimensions may be increased if the city determines that more than two lanes are required based on the number of trips generated or the need for turning lanes.
4. Access widths for all other uses shall be based on 10 feet of width for every travel lane, except that driveways providing direct access to parking spaces shall conform to the parking area standards in Chapter 2.203 AMC.
5. Driveway Aprons. Driveway aprons (when required) shall be constructed of concrete and shall be installed between the street right-of-way and the private drive. Driveway aprons shall conform to ADA standards for sidewalks and pathways, which require a continuous route of travel in compliance with the APWDS.

H. Fire Access and Parking Area Turnarounds. A fire equipment access drive that conforms to the local requirements shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turnaround areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. For requirements related to cul-de-sacs, please refer to APWDS.

I. Vertical Clearances. Driveways, private streets, aisles, turnaround areas and ramps shall have

a minimum vertical clearance of 13 feet, six inches for their entire length and width.

J. Vision Clearance. No signs, structures or vegetation in excess of three feet in height shall be placed in "vision clearance areas." The minimum vision clearance area may be increased by the city engineer upon finding that more sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.).

K. Construction. The following development and maintenance standards shall apply to all driveways and private streets:
   1. Driveways, parking areas, aisles, and turnarounds may be paved with asphalt, concrete or comparable surfacing, or a durable nonpaving material may be used to reduce surface water runoff and protect water quality. Nonpaving surfaces shall be subject to review and approval by the city engineer.
   2. When a paved surface is used, all driveways, excluding single-family and duplex residential, parking areas, aisles and turnarounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with city standards.
   3. When driveway approaches or aprons are required to connect driveways within the public right-of-way, they shall be paved. (See also subsection (G) of this section.)

2.211.07 Pedestrian Access and Circulation

The intent of this section is to ensure safe, direct and convenient pedestrian circulation, all developments, except single-family detached housing (i.e., on individual lots with direct access to public streets), shall provide a continuous pedestrian and/or multi-use pathway system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in subsections (A)(1) through (A)(4) of this section:

A. Continuous Pathways. The pathway system shall extend throughout the development site and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions within this Code.

B. Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:
   1. Reasonably Direct. A route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.
   2. Safe and Convenient. Bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.
   3. For commercial, industrial, mixed-use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.
   4. For residential buildings the "primary entrance" is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the

"primary entrance" may be a lobby, courtyard or breezeway which serves as a common entrance for more than one dwelling.

C. Connections within Development. For all developments subject to site design review, pathways shall connect all building entrances to one another. In addition, pathways shall connect all parking areas, storage areas, recreational facilities and common areas, and adjacent developments to the site, as applicable.

D. Street Connectivity. Pathways (for pedestrians and bicycles) shall be provided at or near mid-block where the block length exceeds the length required by this Code. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all of the following criteria:
   1. Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than 10 feet wide and located within a public right-of-way or easement that allows access for emergency vehicles;
   2. If the streets within the subdivision or neighborhood are lighted, the pathways shall also be lighted;
   3. Stairs or switchback paths using a narrower right-of-way/easement may be required in lieu of a multi-use pathway where grades are steep;
   4. The city may require landscaping within the pathway easement/right-of-way for screening and the privacy of adjoining properties; and
   5. The hearings body or planning official may determine, based upon facts in the record, that a pathway is unnecessary given the proximity of other pathways or access route. The pathway may prove impracticable due to: physical or topographic conditions on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this title prohibit the pathway connection.

E. Design and Construction. Pathways shall conform to all of the standards in subsections (E)(1) through (E)(5) of this section:
   1. Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised six inches and curbed, or separated from the driveway/street by a five-foot minimum strip with bollards, a landscape berm, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.
   2. Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of five feet from all residential living areas on the ground floor, except at building entrances. Separation is measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of this Code. No pathway/building separation is required for commercial, industrial, public, or institutional uses.
   3. Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping. An example of contrasting paving material is the use of a concrete crosswalk through an asphalt driveway. If painted striping is used, it shall consist of thermoplastic striping or similar type of durable application. 4. Pathway Surface.

4. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least six feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 10 feet wide.
5. Accessible Routes. Pathways shall comply with the Americans with Disabilities Act, which requires accessible routes of travel.
6. Bicycle Parking shall be provided and constructed in accordance with Section 2.203.

Appendix A2 - Traffic Studies

Suggested addition to the City of Amity code regarding Traffic Studies.

3.112 TRAFFIC STUDIES

3.112.01 Purpose

The purpose of this section is to assist in determining which road authorities participate in land use decisions, and to implement the State's Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Study must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study and who is qualified to prepare the study.

3.112.02 Traffic Impact Study Required

The City or other road authority with jurisdiction may require a Traffic impact Study (TIS) as part of the application for development, a change in use, or a change in access. A TIS may be required when a land use application involves one or more of the following actions:

1. A change in zoning or a plan amendment designation.
2. Any proposed development or land use action that a road authority states may have operational or safety concerns along its facility(ies).
3. An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more.
4. An increase in peak hour volume of a particular movement to and from the State Highway by twenty (20) percent or more.
5. An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day.
6. The location of the access driveway does not meet minimum sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State Highway creating a safety hazard.
7. A change in internal traffic patterns that may cause safety problems, such as back up onto a street or greater potential for traffic accidents.

3.112.03 Traffic Impact Study Preparation

A Traffic Impact Study shall be prepared by an Oregon licensed professional engineer in accordance with the requirements of the road authority. If the road authority requiring the study is the Oregon Department of Transportation (ODOT), the study shall conform to ODOT's regulations.

3.112.04 Transportation Related Development and Traffic Impacts

All transportation related development (including off-street parking and loading) must take into account the impacts of such development upon the transportation system, including the street grid, access, access management, circulation, and transportation improvements. Accordingly, a variety of land use actions (such as subdivisions, partitions, planned developments, conditional uses etc.) may require studies and mitigation of traffic impacts. The City Engineer may determine additional requirements for such studies and mitigation measures. The following provisions and definitions will guide such studies:

A. **Traffic Impact Analysis (TIA):** A traffic impact analysis may involve, at a minimum, any or all of the following depending on the nature of a development and its relationship to the transportation system.
   1. An analysis of the effect of traffic generated by a development on the capacity, operations, and safety of the public street and/or highway system.
   2. An analytical and informational document prepared by a licensed professional traffic engineer or civil engineer in connection with a specific proposed land use application that forcasts, describes, and suggests mitigation measures or ways of off-setting the traffic effects of the propose new activities within a geographic area
   3. Astudy or analysis of how any use, plan or development will affect traffic ina surrounding area.
   4. A study that assesses the impacts of a proposed development on the existing and future multi-modal transportation network, and includes recommended mitigation measures for the anticipated impacts, and an analysis of the adequacy of the developments planned access points.
B. **Traffic Impact Mitigation Measure:** Any measure or improvement taken by or required of the developer in order to lessen, abate, or reduce the traffic impact of the development on the public street and/or highway system.
C. **Traffic Impact Study:** An analysis of the effects of a proposed development on the transportation system, and of traffic impacts on neighboring properties.
D. **Traffic Impact:** A proposed developments effects on the transportation system, as represented by increased vehicle trips on the public street system, an increase in congestion, worsening of the level of service, or reductions in safety and efficiency.
E. **Traffic Model:** A mathematical representation of traffic movement within an area or region based on observed relationships between the kind and intensity of development in specific areas.
F. **Traffic Study:** A limited analysis of the operational aspects and traffic safety issues of a particular development area, including but not limited to on-site traffic circulation and access design and operation.

3.112.05 Traffic Counts

Unless otherwise specified by the City Engineer, the number used for traffic counts for all traffic studies and analyses shall be based on the number of persons determined by the Fire Marshal as maximum occupancy for the facilty(ies) in question.

Appendix B1 –City of Amity Comprehensive Plan

Amendments made as part of the adoption of the City's 2014 TSP

Bold and underlined text indicates proposed additional or revised text.
~~Text with strikethrough~~ indicates text proposed for deletion

TRANSPORTATION

Amity suffers from traffic problems typical of communities which have major highways passing through the core commercial areas. These problems include speeding, on-street parking and pedestrian hazards. Through agency coordination and local improvement programs, the City's goal is to improve present traffic conditions.

Providing varying modes of transportation are also important in meeting the total needs of the community. Diversified transportation will provide greater convenience and lower costs to citizens.

FINDINGS

The condition of Amity's streets is generally adequate for the existing traffic load, although most streets are in need of paving. Improvements in the street conditions will be necessary to accommodate substantial increases in traffic.

The City of Amity, the State Highway Division and Yamhill County are responsible for the maintenance of streets in the planning area, curbs and sidewalks exist on very few of the City's streets.

~~There are no plans for road improvements on State roads within the planning area for at least the next 6 years.~~

~~Traffic volumes have increased by between 5 and 29 percent on monitored roads over the 5 year period from 1972 to 1977.~~

The most serious traffic hazards exist along Highway 99W (Trade Street) and the Bellevue-Hopewell Highway (Fifth and Nursery Streets), primarily due to traffic volumes and on-street parking.

The ~~Southern~~ **Union** Pacific Railroad owns **the rail facilities in Amity**, **Portland & Western** maintains and operates rail freight service in Amity on tracks running through the western portion of the City.~~; the nearest available air service is in the City of McMinnville.~~

For regularly scheduled commercial flights citizens generally travel to the Portland ~~General~~ International Airport.

~~Yamco Transit and Greyhound Lines~~ **Yamhill County Transit** provide the City of Amity with a level of public transportation.

Walking and biking are attractive transportation modes despite the lack of adequate facilities.

Side streets serve as the primary routes for **pedestrians and** bicyclists.

~~A portion of the County's share of State gas monies is available to the City for the construction and maintenance of bicycle paths.~~

GOAL STATEMENT

To provide a safe, convenient, aesthetic, and economic transportation system through a variety of transportation means.

POLICIES

The City shall coordinate with Yamhill County and the Oregon Department of Transportation with regard to City actions and needs which may affect traffic on County and State roads within the Urban Growth Boundary.

Transportation improvements shall be used to guide urban development and be designed to serve anticipated future needs.

Transportation facility design shall be done in a manner **consistent with city design standard and the Transportation System Plan (TSP), and** which will minimize adverse effects on the existing land uses and natural features.

~~Alternative modes of transportation that will be energy conserving and will provide maximum efficiency and utilization of existing facilities shall be promoted.~~

The city shall adopt a street functional classification system consisting of ~~A~~**a**rterials, collectors, and ~~minor~~ **local** streets ~~within the planning area shall be designated~~ to assist in prioritizing street development and maintenance.

All possible sources of funding for street improvements shall be investigated and the City shall ~~upgrade City streets~~ **make transportation improvements** as funds become available.

~~Transportation improvements which address t~~ The special needs of ~~the~~ low-income, **disabled** ~~the handicapped~~ and senior citizens shall be ~~promoted~~ **considered when making improvements to the transportation system**.

The City shall coordinate with the **Union Pacific Railroad and Portland & Western Railroad** ~~Southern Pacific Railroad for any future need to expand rail service in Amity as well as~~ to ensure maximum safety at all street and railway intersections.

The City shall ~~continue to~~ support **and encourage use of** ~~the existing~~ public transit ~~system and to encourage its continuance~~ **and coordinate with Yamhill County Transit Area (YCTA) on service changes or bus route modifications**.

The city shall coordinate with Yamhill County in the development of a countywide bicycle plan.

The City shall investigate funding sources for projects which would promote bicycle and pedestrian transportation in the Urban Growth Boundary.

~~Hazardous traffic conditions shall be examined in detail and recommendations for improvements shall be made through a systematic capital improvement plan.~~

The City shall promote a multi-modal transportation system that adequately considers the needs of drivers, pedestrians, cyclists, and public transit riders.

The City shall take advantage of opportunities to improve the public transit system as they arise.

The City shall coordinate with the Oregon Department of Transportation on improvements to state highways within the City to ensure the needs of freight are adequately considered.

The City shall strive to create a transportation system that is safe for all users. Addressing existing or newly discovered safety issues is a top priority for the City.

New public streets shall be located based on the proposed alignments in the Transportation System Plan. New public streets shall be designed according to relevant municipal code and adopted street standards.

When upgrading or reconstructing existing City streets, the relevant planned project, if any, in the Transportation System Plan or Capital Improvement Program shall be considered in the design of the project.

Appendix B2 –City of Amity Land Use Development Code

Amendments made as part of the adoption of the City's 2014 TSP

Bold and underlined text indicates proposed additional or revised text.
~~Text with strikethrough~~ indicates text proposed for deletion

CHAPTER 1 - GENERAL ORDINANCE PROVISIONS

Section 1.200 Definitions

1.200.02 Definitions

[…]

Accessways: a walkway that provides pedestrian and or bicycle passage either between streets or from a street to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and additional land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses. Accessways through parking lots are generally physically separated from adjacent vehicle parking or parallel vehicle traffic by curbs or similar devices and include landscaping, trees and lighting. Where accessways cross driveways, they are generally raised, paved or marked in a manner which provides convenient access for pedestrians.

[…]

Amity Design Standards (ADS): A separate document detailing specific design requirements apllicable to all development within the City of Amity, also known as the Amity Public Works Design Standards (APWDS).

[…]

Transportation Facilities: Any physical facility that moves or assist in the movement of people or goods including facilities identified in OAR 660-012-0020 but excluding electricity, sewage and water systems.

CHAPTER 2 – ZONING AND DEVELOPMENT STANDARDS

Section 2.101 Low Density Residential (R-1)

2.101.02 Permitted Uses

[…]

F. 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:

1. **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;**
2. **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;**
3. **Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and**
4. **Changes in the frequency of transit, rail and airport services**

2.101.05 Development Standards

[…]

H. **Driveways.** Driveways shall be **located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.** ~~separated from an intersection by at least 30 feet or one-half the lot frontage, whichever is greater.~~

I. No more than one (1) main building shall be located on a lot or parcel.

J. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.

K. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.102 Medium Density Residential (R-2)

2.102.02 Permitted Uses

[…]

G. 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:

1. **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;**
2. **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;**
3. **Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and**
4. **Changes in the frequency of transit, rail and airport services**

2.102.05 Development Standards

[…]

H. **Driveways.** Driveways shall be **located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.** ~~separated from an intersection by at least 30 feet or one-half the lot frontage, whichever is greater.~~

I. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.

Section 2.103 High Density Residential (R-3)

2.103.02 Permitted Uses

[…]

I. 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:

1. **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;**
2. **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;**

3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
4. Changes in the frequency of transit, rail and airport services

2.103.05 Development Standards

[…]

I. Driveways. Driveways shall be located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.
J. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.
K. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.104 Central Business District (CBD)

2.104.02 Permitted Uses

[…]

M. 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:
   1. 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;
   2. 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;
   3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
   4. Changes in the frequency of transit, rail and airport services

2.104.06 Development Standards

[…]

F. Driveways. Driveways shall be located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.
G. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.
H. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.105 General Commercial Zone (G-C)

2.105.02 Permitted Uses

[…]

S. 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:
   1. 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;

2. 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;
3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
4. Changes in the frequency of transit, rail and airport services

2.105.06 Development Standards

[…]

F. Driveways. Driveways shall be located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.

G. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.

H. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.106 Light Industrial (L-I)

2.106.02 Permitted Uses

[…]

D. 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:

1. 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;
2. 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;
3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
4. Changes in the frequency of transit, rail and airport services

2.106.07 Development Standards

[…]

G. Driveways. Driveways shall be located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.

H. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.

I. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.107 Public (P)

2.107.02 Permitted Uses

[…]

F. 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:

1. 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;
2. 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;
3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
4. Changes in the frequency of transit, rail and airport services

2.107.06 Development Standards

[…]

E. Driveways. Driveways shall be located in accordance with the most current version of the Amity Design Standards and outside of the clear vision area.

F. Bicycle Facilities. Bicycle facilities shall be provided as specified in Section 2.203.11.

G. Access Management. All development shall be in compliance with the Access Management provisions of Section 2.211.

Section 2.108 Agricultural Holding Zone (A-H)

2.108.02 Permitted Uses

[…]

D. 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:

1. 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;
2. 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;
3. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and
4. Changes in the frequency of transit, rail and airport services

Section 2.112 Downtown Development District (DD)

2.112.01 Purpose

The Downtown Design District (DD) is intended to provide development standards that emphasize the traditional downtown appearance of the City of Amity. While incorporating historical ornament and detail into new construction is encouraged, these standards relate to the requirements affecting, adjacent to and within the public right-of-ways. The purpose of these standards is to:

A. Further define the improvements required to fulfill the goals of the City Council.

B. Define activities that interfere with the utilization of the public right-of-ways for pedestrians.

C. Further define the development requirements as they relate to the public right-of-way, pedestrian, bicycle and parking requirements.

This Downtown Design District shall be applied to all zoning districts within the design district boundaries. The proposed standards comply with both the current ADAAG and the proposed public right-of-ways accessibility guideline (PROAG).

2.112.02 Applicability

The downtown design district shall apply to the area defined as the following: Trade Street from the north city limits to the south city limits; 5th Street from the west city limits to Trade Street; Nursery Avenue from Trade Street to the east city limits; The area west of Trade Street bounded by 1st Street, Stanley Street and 6th Street, all inclusive; And the area east of Trade Street bounded by 3rd Street (inclusive), Getchell Avenue and Church Avenue as detailed in the map with the Downtown Design Standards (DDS).

The uses, procedures and standards contained the DD and DDS apply in addition to the development standards of the underlying zone. Where there is a conflict between the uses standards of this section and those of the base zone, the uses and standards of this section shall prevail.

2.112.03 Development

All development proposals, allowed as a permitted use or conditional use within any zone which is also within the DD zone, shall be reviewed for compliance with the requirements of the most current version of the City of Amity Downtown Development District and Downtown Development Standards. Approval or denial of the proposed development shall be consistent with the underlying zone and the Downtown Development District requirements.

Section 2.200 General Development Standards

2.201.03 Application of Public Facility Standards

[…]
C-2. Street Improvements for Single-Family Dwellings: New Single-family dwellings which require a street extension must provide **full** street improvements to city street standards. **All Single-family dwellings shall provide sidewalk improvements.**
C-3. Street Improvements for Commercial or Industrial Expansion: lots fronting on County roads must obtain access permits from the Yamhill County Public Works Department. The City will require improvement to full city standards when the use meets any of the following criteria:

a. The expanded use generates an average of ~~100+~~ **20+** trips per day as documented in the Trip Generation Manual of the Institute of Transportation Engineers or other qualified source; or

b. The expanded use includes at least weekly shipping and delivery trips by vehicles over 20,000 pounds gross vehicle weight.

c. The subject use expands by at least 25%

2.201.04 Design Standards

The design of all improvement within existing and proposed rights-of-way and easements, all improvements to be maintained by the City, and all improvements for which City approval is required, shall comply with the requirements of the most recently adopted ~~City of~~ Amity, ~~Public Works~~ Design Standards.

Section 2.202 Street Standards

2.202.03 General Provisions

The following provisions shall apply to the dedication, construction, improvement, or other development of all public streets in the City, and are intended to provide a general overview of typical minimum design standards. All streets shall be designed in conformance with the specific requirements of the most recently adopted ~~City of~~ Amity, ~~Public Works~~ Design Standards.

The standard sections contained in the ~~City of~~ Amity, ~~Public Works~~ Design Standards are minimum requirements only and shall not be construed as prohibiting the City Engineer from requiring thicker sections or **allowing** engineer designed pavement sections in lieu of standard sections where conditions warrant.

[…]

E. Existing Streets

   3. Improvements to existing streets shall be in compliance with the most current street standards for redevelopment of existing streets. The standard widths specified are minimum requirements and shall not be construed as prohibiting the City Engineer from requiring wider sections when warranted.

F. New Streets: Where new streets are created by a subdivision or partition, full street improvements shall be required. **The widths specified within the most current street standards for new construction, by functional classification, shall be required. The standard widths specified are minimum requirements and shall not be construed as prohibiting the City Engineer from requiring wider sections when warranted.**

G. Cul-de-sacs: Cul-de-sacs shall have maximum lengths of ~~400~~ **500** feet and serve no more than ~~18~~ **19** dwelling units. All cul-de-sacs shall terminate with circular turnarounds. **Where required by the review authority, a pedestrian accessway shall connect the cul-de-sac to another street. The maximum length of a cul-de-sac may be extended to 750 feet and serve no more than 30 dwelling units when all of the following criteria are met:**

   1. **The development contains or is adjacent to a marginal access street.**
   2. **Unusual topographic conditions limit the ability of providing an additional access.**

H. Street Names: Street names and numbers shall conform to the established pattern in the City and shall be subject to the approval of the City Council. Street names shall be required for all new publicly dedicated streets and **all** private streets **regardless of ownership pattern**.

I. Grades and Curves: Grades shall not exceed 6 percent on arterials, 10 percent on collectors, or 12 percent on any other public or private street. To provide for adequate drainage, all streets shall have a minimum slope of ~~0.5~~ **0.25** percent **in accordance with the Amity Design Standards**. Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on minor arterials, or 100 feet on other streets, and shall be to an even **one (1) foot** ~~ten (10) feet~~. On arterials there shall be a tangent of not less than 100 feet between reversed curves. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept steeper grades and sharper curves.

J. Marginal Access Streets: If a development abuts or contains an existing or proposed arterial street or railroad right-of-way, the City may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or such

other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.

K. Clear Vision Areas: Clear vision areas shall be maintained on corner lots at the intersection of all public streets**,** ~~and~~ at the intersection of a public street with a private street **and as otherwise** ~~as~~ outlined in Section 2.209.08.

L. **Access Management: All development shall also be in compliance with the Access Management provisions of Section 2.211.**

2.202.04 General Right-of-way and Improvement Widths

~~The following standards are general criteria for public streets, bikeways and sidewalks within the City. These standards shall be the minimum requirements for all streets,~~ **General right-of-way widths and street improvements shall be in accordance with the Amity Design Standards for streets, bikeways and sidewalks within the City of Amity. These standards shall be the minimum requirements,** except where modifications are permitted under subsection 2.202.05. **Bikeways shall be required on all arterial and collector street functional classifications. Sidewalks shall be required on all street classifications.**

~~Street classification~~	~~ROW Width~~	~~Curb to Curb width~~	~~Bikeway Width~~	~~Sidewalks Width~~
~~**Arterials**~~	~~80 feet~~	~~Varies~~	~~5 feet ea. Side~~	~~5 feet~~
~~**Collector**~~	~~60 feet~~	~~36 feet~~	~~5 feet ea Side~~	~~5 feet~~
~~**Local, 1000 feet or less**~~	~~50 feet~~	~~34 feet~~	~~N/R~~	~~5 feet~~
~~**Alley**~~	~~15 feet~~	~~12 feet~~	~~N/R~~	~~N/R~~
~~**Cul-de-sac bulb**~~	~~45 foot radius~~	~~40 foot radius~~	~~N/R~~	~~5 feet~~

2.202.05 Modification of Right-of-Way and Improvement Width

The City, pursuant to the review procedures of Section 3.203, may allow modification to the ~~public~~ street standards ~~of Subsection 2.202.04~~, when both of the following criteria res satisfied:

A. The modification is necessary to provide design flexibility in instances where:
   1. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or
   2. Parcel shape or configuration precludes accessing a proposed development with a street which meets the full standards of **the Amity Design Standards** ~~Section 2.202.04~~; or
   3. A modification is necessary to preserve trees or other natural features determined by the City to be significant to the aesthetic character of the area; or
   4. A Planned Unit Development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.

B. Modifications of the **street** standards ~~of Section 2.202.04~~ shall only be approved if **approved by the City Engineer and** the City finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.

2.202.06 Private Streets

Streets and other right-of-ways serving a **partition,** planned unit development **or other development** that are not dedicated for public use shall comply with the following:

A. Private streets shall only be allowed where the applicable criteria of section 2.208.03(C) are satisfied. Private streets shall have a minimum easement width **in accordance with the Amity Design Standards** ~~of 25 feet~~ and minimum paved, curbed width of 20 feet.
B. Unless otherwise specified in the ~~City of~~ Amity~~, Public Works~~ Design Standards, all private streets serving more than two dwelling units shall be constructed to the same pavement section specifications required for public streets. Provisions for the maintenance of the street shall be provide in the form of a maintenance agreement, homeowners association, or other instrument acceptable to the City Attorney.
C. A turn-around shall be required for any private street which has only one outlet and which is in excess of ~~200~~ **150** feet long or which serves more than two residences. Turn-arounds for private streets shall be either a circular turn-around with a minimum paved radius of 35 feet, or a "tee" or "hammerhead", turnaround with a minimum paved dimension across the "tee" of 70 feet and a 20 foot width with ~~appropriate~~ **28 foot** radius at the corners.
D. Private streets shall also comply with all of Section 2.211 Access Management.
E. Private streets shall be entirely contained within a separate tract or parcel.

Any grant of a private street or land functioning as an easement shall not be accepted by the City and dedicated for public use except upon approval of the City Council and upon meeting the specifications of Section 2.202.02 ~~and~~ **through** 2.202.04.

2.202.07 Access Easements

A private access easement created as the result of an approved partitioning shall conform to the following:

A. Partition access easements shall only be allowed where the applicable criteria of Section 2.208.03(C) are satisfied. The easements shall comply with the following standards:
    1. Minimum width: ~~20~~ **25** feet
    2. Minimum paved or curb to curb width: ~~18~~ **20** feet
    3. Maximum length: ~~250~~ **150** feet
    4. No more than ~~3~~ **2** dwelling units shall have sole access to the easement.
B. Unless otherwise specified in the ~~City of~~ Amity, ~~Public Works~~ Design Standards, all private streets serving more than two dwelling units shall be constructed to the same pavement section specifications required for public streets. Provision for the maintenance of the ~~street~~ **Access Easement** shall be provided in the form of a maintenance agreement, homeowners association, or other instrument acceptable to the City Attorney
C. A turn-around shall be required for any access easement which has only one outlet and which is in excess of ~~200~~ **150** feet long or which serves more than two residences. Turn-arounds shall be either a circular turn-around with a minimum paved radius of 35 feet, or a "tee" or hammerhead" turn-around with a minimum paved dimension across the "tee" of 70 feet and a 20 foot width with ~~appropriate~~ **28 foot** radius at the corners.
D. All private access easements serving more than two (2) residences shall be **designed as a private street in accordance with Section 2.202.06** ~~designated as fire lanes and signed for no parking~~.

Section 2.203 Off-Street Parking and Loading
~~(Commercial, Industrial and Multi-Family Uses Only)~~

2.203.06 Residential Driveways

All residential driveways shall be paved concrete and **shall be in accordance with Section 2.211.** ~~have a minimum ten (10) foot approach width at the curb line. The maximum single use residential driveway approach width shall be eighteen (18) feet.~~

2.203.08 Parking and Loading Area Requirements

[…]

L. Access Management. All parking and loading facilities shall be in compliance with the Access Management provisions of Section 2.211.

2.203.11 Bicycle Parking

[…]

C. **Access Management. All bicycle parking facilities shall be in compliance with the Access Management provisions of Section 2.211.**

Section 2.208 Development Standards for Land Divisions

2.208.03 Standards for lots or Parcels

[…]

D. Flag lots: If a flag lot is permitted, **they shall comply with** the following standards**:** ~~shall be~~

1. The access strip shall not be less than 20 feet wide. The access strip shall be improved with a minimum 12 foot wide paved driveway which meet**s** applicable City standards. If said access strip is over ~~200~~ **150** feet in length, the driveway shall terminate in a turn-around capable of accommodating emergency y fire vehicles.
2. […]

2.208.04 Standards for Blocks

[…]

B. Sizes: Blocks shall be **in accordance with Section 2.211** ~~1,000 feet in length between street lines~~, except blocks adjacent to **marginal access** ~~arterial~~ streets, or unless the previous adjacent development pattern or topographical conditions justify a variation. ~~The recommended minimum distance between intersections on arterial streets is 1,800 feet.~~ **The maximum block length shall be 1,200 feet.**

2.208.05 Improvement Requirements

[…]

B. Project Streets: All public or private streets within the land division shall be constructed as required by the provisions of Section 2.202 **and 2.211**. Private driveways serving flag lots or private streets shall be surfaced as per the requirements ~~of this ordinance~~**of the Amity Design Standards**.

[…]

H. Pedestrian Facilities and Bicycle Ways: Sidewalks shall be installed along both sides of each public street and in any pedestrian or bicycle **access**ways within the land division as well as along all frontages to existing streets. **Sidewalks and bikeways shall conform to the requirements for Pedestrian Accees and Circulation within Section 2.211.07.** Sidewalks **and paths** shall be extended as required to connect to other sidewalk systems. The City may defer **on-site pedestrian and bicycle accessway** ~~sidewalk~~ construction until the dwellings or structures fronting the sidewalk are constructed. Any required off-site sidewalks, sidewalks fronting public property, or sidewalks adjacent to existing structures shall not be differed.

I. Design Standards. Pedestrian/ bicycle access ways shall meet the following design standards:
   1. ~~Minimum dedicated width: 10 feet~~ **Shall meet the minimum requirements of Section 2.211.07**
   2. ~~Minimum improved width: 5 feet~~**Shall meet the requirements within the Amity Design Standards.**
   3. Vision Clearance: A clear line of visions for the entire length of the accessway shall be required
   4. Pedestrian scale lighting fixtures shall be provided along walkway and lighted to a level where the system can be used at night
   5. The accessway shall be designed to prohibit vehicle traffic**, but accommodate maintenance vehicle traffic as required**.

2.209.08 Vision Clearance

[…]

The following measurements shall establish the clear vision areas:

Type of Intersection	Measured Along Each Lot Line or Drive Edge*
Controlled Intersection [stop sign or signal]	~~15~~ **20** feet
Uncontrolled Intersection	40 feet
Commercial and Industrial District driveways	~~20~~ **30** feet
Residential District Driveways	10 feet
Alley	15 feet

*When there is an intersection of two or more streets **or driveways** of different **types** ~~right-of-way width~~, the distance to be measured along the lot lines shall be the distance specified for each type of street **or dirveway**.

2.211 ACCESS MANAGEMENT

2.211.01 Purpose

The purpose of this chapter is to ensure that developments provide safe and efficient access and circulation for pedestrians and vehicles. The Code provides standards for vehicular, bicycle and pedestrian access and circulation.

2.211.02 Applicability

This chapter shall apply to all public streets within the city and to all properties that abut these streets.

2.211.03 Access permit required.

Access to a public street requires an Access Permit (a Type I permit) in accordance with the following procedures:

A. Permits for access to City streets shall be subject to review and approval by the City Engineer based on the standards contained in this Chapter, the Amity Street Standards, the Transportation System Plan, and/or the Uniform Fire Code as applicable. An access permit may be in the form of a letter to the applicant, attached to a land use decision notice, or included as part of the development review/building permit approval.

B. Permits for access to State highways shall be subject to review and approval by the Oregon Department of Transportation (ODOT) and by the City. Except when ODOT has delegated this responsibility to the City, In that case, the City shall determine whether access is granted based on its adopted standards.

C. Permits for access to County roads shall be subject to review and approval by Yamhill County and the city, except where the County has delegated this responsibility to the City, in which case the City shall determine whether access is granted based on adopted City standards.

2.211.04 Conditions of approval.

The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording reciprocal access easements (i.e., for shared driveways), installation of traffic control devices or traffic safety devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street, excepting for single-family or duplex residential uses. The City is authorized to require greater requirements for access in accordance with the adopted city standards for permits issued by any jurisdiction within the city limits.

The proposed streets, roads, sidewalks, bicycle lanes, pathways, utilities, and surface water management facilities are laid out so as to conform or transition to the plats of subdivisions and maps of major partitions already approved for adjoining property as to width, general direction and in all other respects. All proposed public improvements and dedications are identified on the preliminary plat.

On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle accessways within new subdivisions, planned unit developments, mobile home parks, multi-family, commercial and industrial developments.

2.211.05 Access Spacing Standards.

A. Access spacing is divided into two categories: Street Intersections and Private Access Driveways. Tables 1 and 2 include minimum standards for both categories.

Table 1

Public and Private Street Intersection Spacing Standards

Functional Classification	Public Intersection Spacing
Arterial	100 feet
Collector	100 feet
Local Street (includes streets designated as Commercial Streets)	50 feet

Table 2

Private Access Driveway Spacing Standards

Functional Classification	Driveway Spacing
Arterial	40 feet
Collector	20 feet
Local Street (includes streets designated as Commercial Streets)	10 feet

B. For street intersections with different functional classifications, use the larger requirement.
C. Private Access driveway spacing standards are the requirements for adjacent driveways. See Amity Design Standards for additional requirements.
D. The City Engineer, with approval of the roadway authority, may adjust the access spacing standards as necessary to address project or location specific issues such as topographic conditions, property configurations, or preservation of significant natural features. In such cases, the City Engineer or roadway authority may require additional mitigation to ensure adequate traffic operation and safety.

2.211.06 Vehicular Access and Circulation

The intent of this section is to manage vehicle access to development through a connected street system, while preserving the flow of traffic in terms of safety, roadway capacity, and efficiency. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the city's transportation system plan. Major roadways including highways, arterials, and collectors, serve as the primary system for moving people and goods. Access management is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function. This section attempts to balance the right of reasonable access to private property with the right of the citizens of the city and the state of Oregon to safe and efficient travel. It also requires all developments to construct planned streets (arterials and collectors) and to extend local streets.

To achieve this policy intent, state and local roadways have been categorized in the comprehensive plan by function and classified for access purposes based upon their level of importance and function. Regulations have been applied to these roadways for the purpose of reducing traffic accidents, personal injury, and property damage attributable to access systems, and to thereby improve the safety and operation of the roadway network. This will protect the substantial public investment in the existing transportation system and reduce the need for expensive remedial measures. These regulations also further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.

A. Traffic Study Requirements. The city or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See also AMC 3.112, Traffic Studies.)
B. Access Options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (a minimum of 10 feet per lane is required). These methods are "options" to the developer/subdivider, unless one method is specifically required by Division 2 (i.e., under Special Standards for Certain Uses).

1. **Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.**
2. **Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.**
3. **Option 3. Access is from a public street adjacent to the development parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (C) of this section.**
4. **Subdivisions Fronting Onto an Arterial Street. New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).**
5. **Double-Frontage Lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. Except for corner lots, the creation of new double-frontage lots shall be prohibited in the residential district, unless topographic or physical constraints require the formation of such lots. When double-frontage lots are permitted in the residential district, a landscape buffer with trees and/or shrubs and ground cover not less than 10 feet wide shall be provided between the backyard fence/wall and the sidewalk or street; maintenance shall be assured by the owner (i.e., through homeowner's association, etc.).**
6. **Important Cross-References to Other Code Sections. Other sections may require buildings placed at or near the front property line and driveways and parking areas to be oriented to the side or rear yard. The city may require the dedication of public right-of-way and construction of a street (e.g., frontage road, alley or other street) when the development impact is proportionate to the need for such a street and the street is identified by the comprehensive plan or an adopted local streets plan.**

C. Access Spacing. Driveway accesses shall be separated from street intersections in accordance with the following standards and procedures:

1. **Local Streets. A minimum of 35 feet separation as measured from the sides of the driveway to a parallel street right-of-way shall be required, except as provided in subsection (C)(3) of this section.**
2. **Arterial and Collector Streets. Access spacing on collector and arterial streets and at controlled intersections (i.e., with four-way stop sign or traffic signal) shall be determined based on the policies and standards contained in the city's transportation system plan or Manual for Uniform Traffic Control Devices.**
3. **Special Provisions for All Streets. Direct street access may be restricted for some land uses, in conformance with the provisions of Division 2, Land Use Districts. For example, access consolidation, shared access, and/or access separation greater than that specified by subsections (C)(1) and (C)(2) of this section, may be required by the city, county or ODOT for the purpose of protecting the function, safety and operation of the street for all users. (See subsection (E) of this section.) Where no other alternatives exist, the permitting agency may allow construction of an access connection along the property line farthest from an intersection. In such cases, directional**

connections (i.e., right in/out, right in only, or right out only) may be required.

D. Number of Access Points. For single-family dwellings, one street access point is permitted per lot, when alley access cannot otherwise be provided. Two access points may be permitted for duplex or multifamily housing (i.e., no more than one access per street), subject to the access spacing standards in subsection (C) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (E) of this section, in order to maintain the required access spacing and minimize the number of access points.

E. Shared Driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

1. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
2. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval (Chapter 2.208 AMC) or as a condition of site development approval (Chapter 3.104 AMC).
3. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.

F. Street Connectivity and Formation of Blocks Required. In order to promote efficient vehicular and pedestrian circulation throughout the city, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, bicycle or pedestrian pathways, in accordance with the following standards:

1. Block Length and Perimeter. The maximum block length and perimeter shall not exceed:
   a. Six hundred feet length and 1,600 feet perimeter in the residential districts;
   b. Four hundred feet length and 1,200 feet perimeter in the commercial districts, except as provided by AMC 2.208, Block layout and building orientation;
   c. Not applicable to the industrial districts.
2. Street Standards. Public and private streets shall also conform to ADS, Transportation improvements, AMC 2.211.06, Pedestrian access and circulation, and applicable Americans with Disabilities Act (ADA) design standards.
3. Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of AMC 2.211.06(D). Pathways shall be located to minimize out-of-direction travel by pedestrians and may be designed to accommodate bicycles.

G. Driveway Openings. Driveway openings or curb cuts shall be the minimum width necessary to provide the required number of vehicle travel lanes (10 feet for each travel lane). The following standards (i.e.,

as measured where the front property line meets the sidewalk or right-of-way) are required to provide adequate site access, minimize surface water runoff, and avoid conflicts between vehicles and pedestrians:

1. Single-family and duplex dwellings uses shall have a minimum driveway width of 10 feet and a maximum width of 24 feet.
2. Multiple-family uses with between three and seven dwelling units shall have a minimum driveway width of 20 feet and a maximum width of 24 feet.
3. Multiple-family uses with more than seven dwelling units, and off-street parking areas with 16 or more parking spaces, shall have a minimum driveway width of 24 feet and a maximum width of 30 feet. These dimensions may be increased if the city determines that more than two lanes are required based on the number of trips generated or the need for turning lanes.
4. Access widths for all other uses shall be based on 10 feet of width for every travel lane, except that driveways providing direct access to parking spaces shall conform to the parking area standards in Chapter 2.203 AMC.
5. Driveway Aprons. Driveway aprons (when required) shall be constructed of concrete and shall be installed between the street right-of-way and the private drive. Driveway aprons shall conform to ADA standards for sidewalks and pathways, which require a continuous route of travel in compliance with the ADS.

H. Fire Access and Parking Area Turnarounds. A fire equipment access drive that conforms to the local requirements shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turnaround areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. For requirements related to cul-de-sacs, please refer to ADS.

I. Vertical Clearances. Driveways, private streets, aisles, turnaround areas and ramps shall have a minimum vertical clearance of 13 feet, six inches for their entire length and width.

J. Vision Clearance. No signs, structures or vegetation in excess of three feet in height shall be placed in "vision clearance areas." The minimum vision clearance area may be increased by the city engineer upon finding that more sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.).

K. Construction. The following development and maintenance standards shall apply to all driveways and private streets:

1. Driveways, parking areas, aisles, and turnarounds may be paved with asphalt, concrete or comparable surfacing, or a durable nonpaving material may be used to reduce surface water runoff and protect water quality. Nonpaving surfaces shall be subject to review and approval by the city engineer.
2. When a paved surface is used, all driveways, excluding single-family and duplex residential, parking areas, aisles and turnarounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with city standards.
3. When driveway approaches or aprons are required to connect driveways within the public right-of-way, they shall be paved. (See also subsection (G) of this section.)

2.211.07 Pedestrian Access and Circulation

The intent of this section is to ensure safe, direct and convenient pedestrian circulation, all developments, except single-family detached housing (i.e., on individual lots with direct access to public streets), shall provide a continuous pedestrian and/or multi-use pathway system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in subsections (A)(1) through (A)(4) of this section:

A. Continuous Pathways. The pathway system shall extend throughout the development site and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions within this Code.

B. Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:

1. **Reasonably Direct. A route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.**
2. **Safe and Convenient. Bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.**
3. **For commercial, industrial, mixed-use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.**
4. **For residential buildings the "primary entrance" is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the "primary entrance" may be a lobby, courtyard or breezeway which serves as a common entrance for more than one dwelling.**

C. Connections within Development. For all developments subject to site design review, pathways shall connect all building entrances to one another. In addition, pathways shall connect all parking areas, storage areas, recreational facilities and common areas, and adjacent developments to the site, as applicable.

D. Street Connectivity. Pathways (for pedestrians and bicycles) shall be provided at or near mid-block where the block length exceeds the length required by this Code. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all of the following criteria:

1. **Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than 10 feet wide and located within a public right-of-way or easement that allows access for emergency vehicles;**
2. **If the streets within the subdivision or neighborhood are lighted, the pathways shall also be lighted;**
3. **Stairs or switchback paths using a narrower right-of-way/easement may be required in lieu of a multi-use pathway where grades are steep;**
4. **The city may require landscaping within the pathway easement/right-of-way for screening and the privacy of adjoining properties; and**
5. **The hearings body or planning official may determine, based upon facts in the record, that a pathway is unnecessary given the proximity of other pathways or access route. The pathway may prove impracticable due to: physical or topographic conditions on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this title prohibit the pathway connection.**

E. Design and Construction. Pathways shall conform to all of the standards in subsections (E)(1) through (E)(6) of this section:

1. **Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised six inches and curbed, or separated from the driveway/street by a five-foot minimum strip with bollards, a landscape berm, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.**
2. **Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of five feet from all residential living areas on the ground floor, except at building entrances. Separation is measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of this Code. No pathway/building separation is required for commercial, industrial, public, or institutional uses.**
3. **Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping. An example of contrasting paving material is the use of a concrete crosswalk through an asphalt driveway. If painted striping is used, it shall consist of thermoplastic striping or similar type of durable application. 4. Pathway Surface.**
4. **Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least six feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 10 feet wide.**
5. **Accessible Routes. Pathways shall comply with the Americans with Disabilities Act, which requires accessible routes of travel.**
6. **Bicycle Parking shall be provided and constructed in accordance with Section 2.203.**

Section 2.302 Planned Unit Development (P.U.D.)

2.302.05 Development Requirements

[…]

H. **Access Management:** ~~Circulation:~~

1. Streets within the PUD shall comply with the applicable standards of Section 2.202.
2. **All elements within the PUD development shall be in compliance with the Access Management provisions of Section 2.211.** ~~Roads and pedestrian and bikeway paths shall be an integrated system designed to provide efficient and safe circulation to all users.~~ Developments should be designed to minimize the length of roadway.
3. Pedestrian/bikeways shall be clearly signed and have adequate crossing facilities where warranted.

J. Off-Street Parking: Off- street parking requirements shall be as specified in Section 2.203. Parking may be provided on each lot or in clustered parking areas. Additional off-street parking for guests and recreational vehicles may be required by the City if warranted by reduced lot sizes, type of street, and/or traffic volumes. **Bicycle facilities shall be provided as specified in Section 2.203.11.**

Section 2.304 Manufactured Home Parks

2.304.02 General Standards

[…]

Y. Access Management:

1. **Streets within the Manufactured Home Park shall comply with the applicable standards of Section 2.202.**
2. **All elements within the development shall be in compliance with the Access Management provisions of Section 2.211. Developments should be designed to minimize the length of roadway.**
3. **Pedestrian/bikeways shall be clearly signed and have adequate crossing facilities where warranted.**

Z. Off-Street Parking: Off- street parking requirements shall be as specified in Section 2.203. Parking may be provided on each lot or in clustered parking areas. Additional off-street parking for guests and recreational vehicles may be required by the City if warranted by reduced lot sizes, type of street, and/or traffic volumes. Bicycle facilities shall be provided as specified in Section 2.203.11.

Section 3.104 Site Design Review

3.104.06 Evaluation of Site Plan

The Review of a site Plan shall be based upon the consideration of the following:

A. Conformance with the General Development Standards contained in this Ordinance including"

1. Streets
2. Off-street parking
3. Public facilities, including storm drainage and utility lines
4. Signs
5. Site and landscape design
6. **Access management**

Section 3.110 Zone Change

3.110.03 Criteria for Approval

[…]

G. Transportation Planning Rule Compliance. When a development application includes a proposed comprehensive plan amendment or land use district change, the proposal shall be reviewed to determine whether it significantly affects a transportation facility in accordance with Oregon Administrative Rule (OAR) 660-012-0060 (the Transportaion Planning Rule – TPR) and the Traffic Impact Study provisions.

3.112 TRAFFIC STUDIES

3.112.01 Purpose

The purpose of this section is to assist in determining which road authorities participate in land use decisions, and to implement the State's Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Study must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study and who is qualified to prepare the study.

3.112.02 Traffic Impact Study Required

The City or other road authority with jurisdiction may require a Traffic impact Study (TIS) as part of the application for development, a change in use, or a change in access. A TIS may be required when a land use application involves one or more of the following actions:

1. **A change in zoning or a plan amendment designation.**
2. **Any proposed development or land use action that a road authority states may have operational or safety concerns along its facility(ies).**
3. **An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more.**
4. **An increase in peak hour volume of a particular movement to and from the State Highway by twenty (20) percent or more.**
5. **An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day.**
6. **The location of the access driveway does not meet minimum sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State Highway creating a safety hazard.**
7. **A change in internal traffic patterns that may cause safety problems, such as back up onto a street or greater potential for traffic accidents.**

3.112.03 Traffic Impact Study Preparation

A Traffic Impact Study shall be prepared by an Oregon licensed professional engineer in accordance with the requirements of the road authority. If the road authority requiring the study is the Oregon Department of Transportation (ODOT), the study shall conform to ODOT's regulations.

3.112.04 Transportation Related Development and Traffic Impacts

All transportation related development (including off-street parking and loading) must take into account the impacts of such development upon the transportation system, including the street grid, access, access management, circulation, and transportation improvements. Accordingly, a variety of land use actions (such as subdivisions, partitions, planned developments, conditional uses etc.) may require studies and mitigation of traffic impacts. The City Engineer may determine additional requirements for such studies and mitigation measures. The following provisions and definitions will guide such studies:

A. **Traffic Impact Analysis (TIA): A traffic impact analysis may involve, at a minimum, any or all of the following depending on the nature of a development and its relationship to the transportation system.**
   1. **An analysis of the effect of traffic generated by a development on the capacity, operations, and safety of the public street and/or highway system.**
   2. **An analytical and informational document prepared by a licensed professional traffic engineer or civil engineer in connection with a specific proposed land use application that forcasts, describes, and suggests mitigation measures or ways of off-setting the traffic effects of the propose new activities within a geographic area**
   3. **Astudy or analysis of how any use, plan or development will affect traffic ina surrounding area.**
   4. **A study that assesses the impacts of a proposed development on the existing and future multi-modal transportation network, and includes recommended mitigation measures for the anticipated impacts, and an analysis of the adequacy of the developments planned access points.**

B. Traffic Impact Mitigation Measure: Any measure or improvement taken by or required of the developer in order to lessen, abate, or reduce the traffic impact of the development on the public street and/or highway system.

C. Traffic Impact Study: An analysis of the effects of a proposed development on the transportation system, and of traffic impacts on neighboring properties.

D. Traffic Impact: A proposed developments effects on the transportation system, as represented by increased vehicle trips on the public street system, an increase in congestion, worsening of the level of service, or reductions in safety and efficiency.

E. Traffic Model: A mathematical representation of traffic movement within an area or region based on observed relationships between the kind and intensity of development in specific areas.

F. Traffic Study: A limited analysis of the operational aspects and traffic safety issues of a particular development area, including but not limited to on-site traffic circulation and access design and operation.

3.112.05 Traffic Counts

Unless otherwise specified by the City Engineer, the number used for traffic counts for all traffic studies and analyses shall be based on the number of persons determined by the Fire Marshal as maximum occupancy for the facilty(ies) in question.

Appendix C – Street Standards

The City of Amity's street standards were most recently updated in 2004. The street standards provide design elements for different types of streets within the City. The standards specify right-of-way width and minimum paved width for new streets, maximum grades, curb radii, and other details.

This memo reviews and suggests changes to the City's standards for new streets. The City is interested in narrower streets that still meet their intended functions. Narrower streets cost less, produce a more walkable environment, and reduce stormwater impacts. Most of the streets in Amity are local streets and any new streets constructed in the City are also likely to be local streets. This memo does not review nor does it suggest changes to arterial streets or Commercial/Industrial streets; it is unlikely that new streets of these types will be built within the next 25 years.

Current standards

The City has two standards for local streets, based on the number of homes served by the street and one standard for Collector streets. The current standards are presented in Table 1. The sections following Table 1 describe suggested changes to the street standards.

Table 1
Existing Local and Collector Street standards (APWDS)

Street functional classification	Min. ROW (ft)	Min. paved width (ft)	Design speed (mph)	Design capacity	Sidewalks req.?	Landscape buffer req.?	Bikeway req.?
Local (serving < 20 dwellings)	50	28	25	1,200	Yes – 5' min., both sides	No	No
Local (serving > 20 dwellings)	60	34	30	7,000	Yes – 5' min., both sides	No	No
Collector	66	44	35	10,000	Yes – 7' min., both sides	No	No

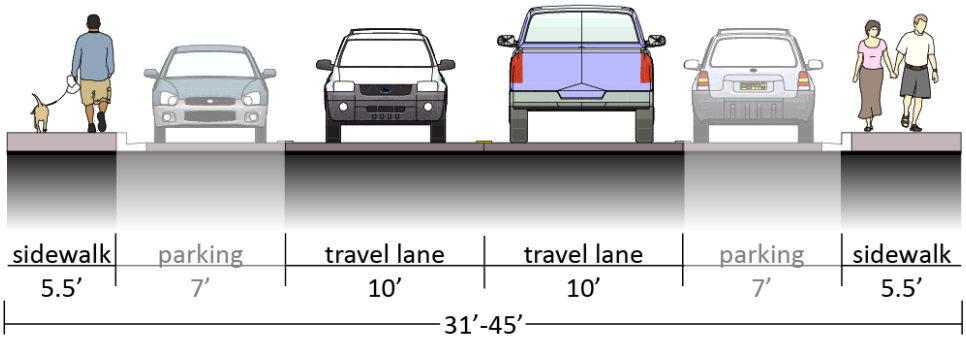
Suggested revisions

The following section details suggested revisions to the standards in Table 1.

Different standards for new development and redevelopment are proposed. Redevelopment of existing city streets is complicated by existing development and narrows rights-of-way. As such, the redevelopment standard is a narrow street cross-section with optional parking. New development occurring in greenfield areas would be required to construct to a "full" street section, including parking and bike lanes at discretion of the City Engineer.

#1 - Standard for redevelopment of existing streets

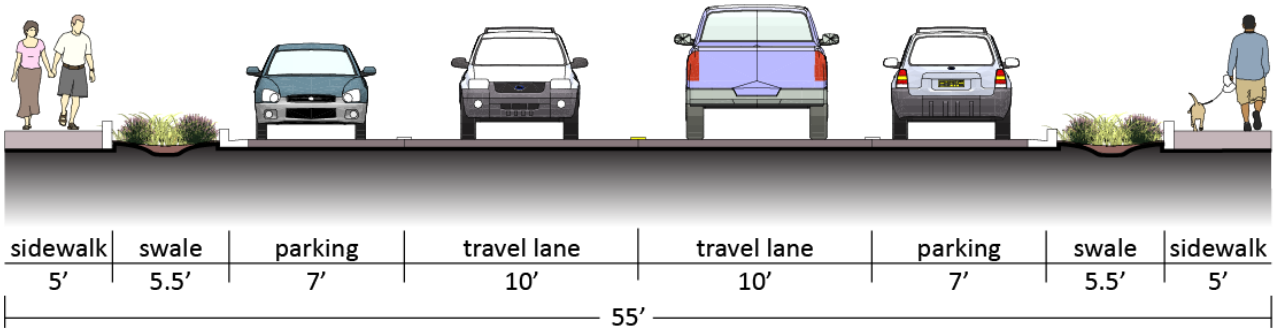
This proposed cross-section is intended for application during re-development of existing streets in Amity, many of which have narrow rights-of-way. Parking could be allowed at the discretion of the City Engineer, but may not be required during construction of frontage improvements.



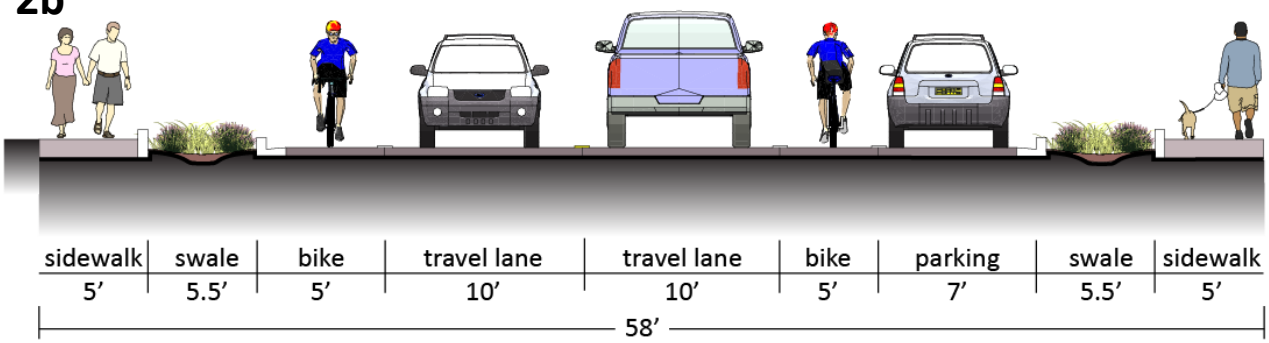
#2a and #2b – New development

These proposed cross-sections are intended for application in new development (greenfield development). Landscape buffers shown may alternately be developed as drainage swales at the discretion of the City Engineer. We suggest requiring these buffers (current standards do not) as they provide effective buffering between pedestrians and travel lanes, and improve the pedestrian experience. Bike lanes may also be required (per section 2b below). Bike lanes may be most beneficial if the new street connects to an existing or planned section of the city' bicycle network. It is important to note that requiring bike lanes would result in elimination of one lane of on-street parking.

2a

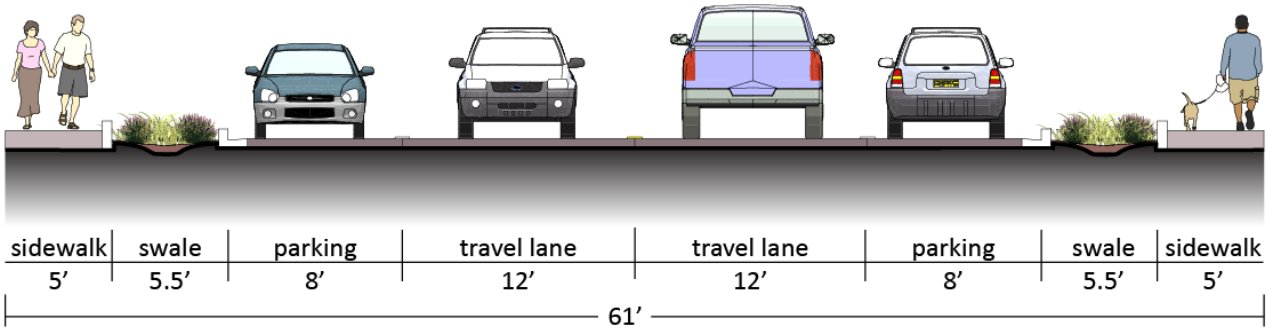


2b



#3 – Commercial collector

This suggested cross-section proposes slightly less paved-width than existing standards. Additionally, as above, landscape buffers or drainage swells are proposed to separate sidewalks from the roadway. Landscape buffers shown may alternately be developed as drainage swales at the discretion of the City Engineer.



Application

The following text suggests how these revised standards could be applied in Amity:

There are three situations that apply when developing or re-developing local streets: (1) a property redevelops on an existing street that has planned improvements as part of the City's capital improvement plan (CIP), (2) property redevelops on an existing street where there are no planned improvements, and (3) a property owner constructs new streets as part of new development. In the first case, the City would require that property owners construct frontage improvements that match the planned improvement in the CIP. In the second case (where there are no planned improvements), the property owner would be required to construct frontage improvements per cross-section #1 above. In the third case (new development), the property owner would construct improvements per cross-section #2a or #2b above.

Cross-section #3 applies when constructing or reconstructing commercial collectors.

Potential street width reduction

Street width could potentially be reduced in some locations if on-street parking was disallowed on all or portions of some streets. The City could consider a minimum and/or maximum number of on-street parking stalls on new streets such that the new roadway width may be reduced. An example application for consideration is as follows:

> "Local streets serving fewer than 20 dwellings shall provide a maximum number of on-street parking stalls equal to 25% of the number of dwellings served by the street. One on-street parking stall is assumed to be 22 feet in length."

The diagram below further illustrates this concept:

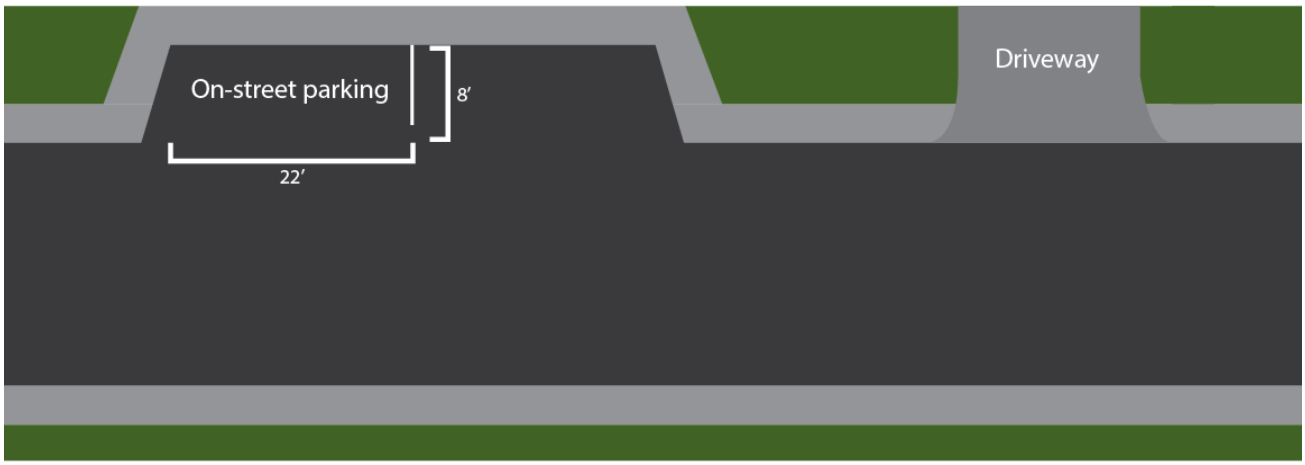


Table 2 summarizes proposed modifications for local and collector streets.

Table 2

Street functional classification	Min. ROW (ft)	Min. paved width (ft)	Design speed (mph)	Design capacity	Sidewalks req.?	Landscape buffer req.?	Bikeway req.?
Cul-de-sac bulb	45 – 58 foot radius	35 foot radius w/o parking, 48 foot radius w/ parking	N/A	200	Yes – 5' min	No	No
Local (serving < 20 dwellings)	40	24 w/o parking, 28 w/ parking	25	600	Yes – 5' min., both sides	No	No
Local (serving > 20 dwellings)	50	28-34	25	2,000	Yes – 5' min., both sides	Yes	No
Collector/Arterial – Transition Section	60 - 66	38 w/o bike lanes, 44 w/ bike lanes	30	3,000	Yes – 6' min., both sides 8' Commercial	Yes	Yes
Collector/Arterial – freight route	70 - 78	42 w/o parking, 58 w/ parking	30	3,000	Yes – 10' min., both sides	No	Yes

Appendix G

Public Involvement and PAC/TAC Meetings

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Project Advisory Committee Meeting Minutes

PAC Meeting #1 (10/15/13)
PAC Meeting #2 (4/10/14)
PAC Meeting #3 (5/27/14)
PAC Meeting #4 (10/22/14) – *minutes are forthcoming*

Technical Advisory Committee Meeting Minutes

TAC Meeting #1 (1/8/14)
TAC Meeting #2 Minutes (4/10/14)
TAC Meeting #3 (5/27/14)
TAC Meeting #4 (10/22/14) – *minutes are forthcoming*

Public Outreach

Community Meeting #1 Summary
Community Meeting #2 Summary
Community Meeting #2 Posters
TSP Project Website

Project Advisory Committee (PAC) Meeting #1 Minutes

Date: Tuesday, October 15, 2013

Time: 3:30 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Committee Members	
Members Present:	Danielle Ludwig, Amity Elementary School Dave Lund, Amity Middle School Eve Silverman, Amity Planning Commission / Amity Downtown Improvement Group Rudy van Soolen, Amity City Council
Members Absent:	Bruce Hubbard, Amity Fire District Ryan Jones, Amity Planning Commission / Amity School Board
Staff Present:	Charles Eaton, PE, City of Amity Terra Lingley, CH2M Hill Naomi Zwerdling, ODOT Jennifer Elkins, City of Amity Jackie Loos, City of Amity Larry Layton, City of Amity

Welcome and Introduction

Lingley welcomed the group, each person present introduced themselves and the organization they represent. Eaton explained the meeting's purpose was to inform the members of the function of the committee. He stated the two school representatives are a critical part of the process and the development of safe routes for children. The plan will consider all parts of transportation including bus, rail, etc. The committee will identify areas in need and the plan will consider those.

Transportation System Plan (TSP) Introduction and Overview

Eaton said the city has never had a TSP, which would include a plan for pedestrians and bicycles. Lingley explained a TSP is the transportation part of the city's comprehensive plan. The TSP will guide the city when grant-seeking and appropriating transportation funds. First the committee will identify the needs and gaps in Amity, Eaton explained, focusing specifically on pedestrians and bicycles but will consider all modes of transportation. Lingley stated Eaton is the main contact for the project for the city. Zwerdling is the ODOT representative and will mostly be guiding the project administratively.

She noted that the city will also hold two public meetings, along with adoption hearings at the very end of the project. The plan will look 20 years into the future to allow for growth and how transportation needs may change in that period. She said the planning commission and council will also be involved and have the opportunity to make decisions about the project.

Committee Operations

Lingley explained the meeting guidelines. She said they will remain mostly informal but noted that once a decision has been made, the group will not go back to that topic.

Plan and Policy Review

Lingley discussed the city's aging previous plans and the goals and objectives of the comprehensive plan.

Evaluation Framework

The committee reviewed the maps for corrections to street names and markings. There was one change to remove a crosswalk from the map (second from left on Rice Lane) and to add a crosswalk on Nursery Avenue at Getchell Avenue. The group decided that the map will be emailed to the city to work on correcting street names and "street" versus "avenue."

Transportation Values

Members listed areas of town where the transportation system works well: new area around middle school, new Rice Lane sidewalks, new pavement, and street lamps in the downtown, railroad crossings, and downtown improvements.

Members listed areas of town where the transportation system does not work well: lighting, sidewalks, routes through town off of Trade Street, Trade Street bike lanes, undergrounding of utilities, speed limit in residential areas, Nursery Avenue, transition from Trade Street to Rice Lane and Rice Lane to school.

Future Meetings and Next Steps

The committee discussed opportune times to meet in the future. Lingley said a business owner committee member is still being sought. Lingley said we will try to avoid Monday, Wednesday, and Friday and will keep the time at 3:30pm.

Adjourn

Project Advisory Committee (PAC) Meeting #2 Minutes

Date: Thursday, April 10th, 2014

Time: 3:30 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Committee Members	
Members Present:	Danielle Ludwig, Amity Elementary School Dave Lund, Amity Middle School Rudy van Soolen, Amity City Council
Members Absent:	Bruce Hubbard, Amity Fire District Ryan Jones, Amity Planning Commission / Amity School Board Eve Silverman, Amity Planning Commission / Amity Downtown Improvement Group
Staff Present:	Charles Eaton, PE, City of Amity Larry Layton, City of Amity Jennifer Elkins, City of Amity Matt Johnson, City of Amity Public Works Ryan Farncomb, CH2M Hill Naomi Zwerdling, ODOT Sumi Malik, CH2M Hill

Welcome and Introduction

Farncomb welcomed the committee members and gave a brief update on the project. Members introduced themselves.

Transportation System Plan (TSP) Update

Farncomb said, since last meeting, they have conducted a plan and policy review and an existing and future needs report. He said that they developed a list of proposed projects to address those needs and this committee will help refine the list. During the research phase, they found that the city lacks wheelchair ramps, the city streets are not aligned, and there is not sufficient pedestrian access between the schools.

Farncomb stated that this project, the city's first TSP, is currently on schedule. Before the next meeting in June, there will be another community outreach event.

Review Technical Memo #2

Farncomb introduced Tech Memo #2, which outlines projects to address traffic flow issues as well as their projected costs.

1. First, Farncomb discussed adding a traffic signal on Trade Street at Nursery Avenue and 6th Street. He noted that the idea is to allow traffic from the side streets to enter the main street but added that the light would cause a significant delay on Trade Street, which is also Highway 99W. Layton asked for clarification on why that would be. Farncomb said there are not enough vehicles turning onto Trade Street to justify the delay and back up on the highway. Van Soolen asked how it would differ from the proposed pedestrian light at Rice Lane and the highway. While Farncomb could not specifically address the concern since the study was not done with the pedestrian light in mind, Eaton theorized that the failure likely occurs during the peak traffic hours and the pedestrian crossing at Rice Lane will be utilized mostly during non-peak traffic periods.

2. Next, Farncomb mentioned modifying Nursery Avenue at Oak Avenue to include a median for pedestrian refuge, prohibiting left hand turns onto Oak Avenue from Nursery. Eaton asked what triggered this option. Farncomb answered that it is to address the pedestrian safety between schools. Eaton stated more discussion would need to occur with the school district since the bus route crosses straight across on Oak Avenue. Discussion involved moving the pedestrian refuge to Getchell Avenue if pedestrian movement would occur there. Farncomb acknowledged more weighing of the pro's and con's will need to be done on this project.

3. The third project on the list was to add a left turn pocket at Rice Lane and Trade Street. The committee discussed the bus routes. Ludwig noted that after dropping students off in the morning, the buses turn right from Rice Lane. Elkins stated that is when the buses enter into the southbound lane while attempting to turn into the northbound lane.

4. Farncomb introduced project number four, new street connections, which included three parts: A.) bicycle and pedestrian access from Rosedell Avenue to Rice Lane, B.) bicycle and pedestrian connection from 3rd Avenue to Nursery Avenue east of the high school, and C.) vehicular connection for an emergency service route to Goucher Avenue to and from Jellison Avenue. Farncomb acknowledged certain obstacles with project four, such as wetland issues and obtaining right-of-way or land acquisition.

5. The fifth project mentioned by Farncomb was to replace the bridge on 5th Street.

6. Farncomb said that, while there was not a traffic issue, it was discussed at citizen outreach events to realign the offset side streets, which resulted in the sixth proposed

project. Eaton mentioned if there is not a traffic issue present, perhaps it should not be included.

7. The seventh project proposal was to install a park-n-ride, although Farncomb was not sure of the demand. Eaton strongly advised that Farncomb get a definitive approval from Yamhill County Transit prior to including this project in the TSP.

Alternatives Evaluation & Recommended Alternatives

Farncomb asked for feedback on the proposed alternative routes. Eaton suggested looking into 4th Street as a priority instead of 5th Street. Johnson informed Farncomb that traffic tends to travel between the high school and elementary school via Jellison Avenue as opposed to Oak Avenue. Farncomb and Eaton discussed the redundant paths from Trade Street to Oak Avenue. Farncomb said they will consider Third Avenue instead of Sherman Avenue.

Future Meetings and Next Steps

Farncomb said the committee will have future opportunities to continue refining these projects. He said the next meeting will be in June.

Adjourn

Project Advisory Committee (PAC) Meeting #3 Minutes

Date: Tuesday, May 27, 2014

Time: 2:00 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Members Present:

Ryan Farncomb, CH2M Hill
Dan Fricke, ODOT Senior Region 2 Planner
Sumi Malik, CH2M Hill
Naomi Zwerdling, ODOT Project Manager
Steve Ruyle, Amity Planning Commission

Members Not Attending:

Jean Palmateer, ODOT Regional Transit Coordinator
Angela Lazarean, Willamette Valley Regional Representative
Christina McDaniel-Wilson, PE, ODOT Senior Transport Analyst
Dorothy Upton, ODOT Region 2 Traffic Engineer
Christopher Cummings, ODOT Interim Freight Planning Program Manager
Bill Gille, Yamhill County Engineer
Rodger Gutierrez, ODOT Pedestrian/Bicycle Facility Specialist
Michael "Swede" Hays, ODOT Railroad Compliance Specialist
Eliseo Lemus Magana, PE, ODOT Region 2 Designer
Karin Johnson, Amity Planning Commission
Tanya Saunders, YCAP
Michael Morales, ODOT Region 2 Senior Environmental PM
Matt Johnson, PW Superintendent, City of Amity

Staff Present:

Charles Eaton, PE, City of Amity
Jackie Loos, City of Amity

WELCOME AND INTRODUCTION: Each person present introduced themselves and the organization they represent. Farncomb thanked everyone for coming.

TRANSPORTATION SYSTEM PLAN (TSP) UPDATE: Farncomb updated every one of the project's process. He also went over what was included in the handout. Farncomb stated that the committee would discuss street standards changes that may be recommended. Farncomb asked if there were any questions before proceeding. There were none.

REVIEW TECHNICAL MEMO #2: Farncomb stated that the project was in "recommended alternative and determining funding sources" stage. Farncomb went over the schedule, stating that the committee would meet again at the end of June or early July to discuss the feedback from the community workshop and then once again to discuss recommended code changes. He stated that the goal was to get the whole process completed by October 2014.

TECHNICAL MEMO #3: Farncomb explained the technical aspect of each project. He also talked about other design options and project prioritization. He stated that the signal and median addition discussed last meeting was eliminated. Farncomb described each project and their priority level, estimated cost, jurisdiction, and the potential funding partners/sources. The committee also discussed key factors of each project to determine what is likely needed for the project to proceed. The committee also discussed possible Urban Growth Boundry (UGB) access.

TECHNICAL MEMO #4: Farncomb and the committee then discussed the different funding options. The committee talked about other funding sources, such as the park SDC's and the school district. Farncomb hoped that the committee would be able to review street standards; however, there was not enough time in this meeting. Therefore, street standards will be addressed at a later TAC meeting.

FUTURE MEETINGS & NEXT STEPS: Farncomb went over the next steps, which include a community workshop in June. He also stated that at the next TAC meeting, after all the recommended revisions, there should be a list of projects that will end up in the TSP. Farncomb also mentioned that the committee would be discussing code amendments at the next TAC meeting.

ADJOURN

Farncomb thanked everyone for attending and asked that any comments or suggestions be emailed to Charles Eaton. Meeting adjourned at 3:30 p.m.

Project Advisory Committee (PAC) Meeting #4 Minutes

Technical Advisory Committee (TAC) Meeting #1 Minutes

Date: Wednesday, January 8, 2014

Time: 2:30 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Committee Members	
Members Present:	Ryan Farncomb, CH2M Hill Karin Johnson, Amity Planning Commission Terra Lingley, CH2M Hill Naomi Zwerdling, ODOT Project Manager Michael Morales, ODOT Region 2 Senior Environmental PM Lori Lewis, First Student
Members Absent:	Dorothy Upton, ODOT Region 2 Traffic Engineer Christopher Cummings, ODOT Interim Freight Planning Program Manager Dan Fricke, ODOT Senior Region 2 Planner Bill Gille, Yamhill County Engineer Rodger Gutierrez, ODOT Pedestrian/Bicycle Facility Specialist Michael "Swede" Hays, ODOT Railroad Compliance Specialist Eliseo Lemus Magana, PE, ODOT Region 2 Designer Christina McDaniel-Wilson, PE, ODOT Senior Transport Analyst Angela Lazarean, Willamette Valley Regional Representative Jean Palmateer, ODOT Regional Transit Coordinator Steve Ruyle, Amity Planning Commission
Staff Present:	Charles Eaton, PE, City of Amity Matt Johnson, City of Amity Public Works Jackie Loos, City of Amity

Welcome and Introduction

Lingley welcomed the group; each person present introduced themselves and the organization they represent. Lingley explained the meeting's purpose was to inform the members of the function of the committee and to review the existing and future conditions technical memo #1.

Transportation System Plan (TSP) Introduction and Overview

Lingley described what the TSP was and the role of the TAC, along with ODOT, City, PAC, and consultants. She stated that the TSP is a resource for the community and the city. This plan will help with funding, future transportation needs and how to meet those needs with limited resources. It will also provide transportation guidance for the City for the next 20 years. She stated that the TSP will focus on transportation needs; specifically on plans for bicycles and pedestrians; roads, public transportation, air, rail, water, and pipelines. She talked about who was involved in this process, which includes Amity, ODOT, DLCD, and the Amity community. Lingley explained the planning process, beginning with an inventory, forecast future needs, develop and evaluate alternatives, determine funding, write draft TSP, brief community, hold an adoption hearing and adopt plan. During the adoption process, there will be additional opportunity for public to comment. She then talked about the schedule and key milestones.

Review Technical Memo #1

Ryan Farncomb went over the Existing and Future Conditions. He talked about land use, such as the recent UGB additions, Right of Way issues, and road connectivity. He talked about possible solutions, such as identifying future road connections, providing multi-modal crossings, and completing networks to provide alternatives.

Farncomb went over the bike system and bicycle levels of stress (BLOS). The committee discussed the BLOS methodology provided by ODOT and what the level of stress measures on City roads. Lingley stated that the main focus of the TSP will be on bicyclists and pedestrians, along with safe routes to school. Farncomb discussed the existing pedestrian system, such as sidewalks and safe pedestrian connections. Gaps in sidewalks, lack of sidewalks, barriers on sidewalks, and upgrading crossings were also discussed, along with ADA accessibility, which is a top priority for the City.

Lingley talked about safety conditions and the crash study and discussed the Amity TSP Study Location Descriptions (Table 4, page 17) and the shared jurisdictions between Amity and ODOT.

Evaluation Framework

Lingley talked about plans and policies and staying consistent when writing the TSP. She also talked about findings, such as updating the city's Comprehensive Plan. She stated that framework will help create a list of tasks to address priority project needs, such as safety, environmental impacts, transportation needs of all the citizens, system upgrades & preservation, multi-modal system, funding & finance, connectivity, and emergency response time.

Transportation Issues to Address

Members listed areas of town that do not work well: Bus drivers turning off Rice Lane onto Hwy 99W struggle to find adequate gaps in traffic. Eaton stated that the city will have a pedestrian activated signal at that location soon. Eaton stated that his main issue is having an ADA connectivity transition plan. Karin Johnson stated that she sees issues with the Rice Lane and Church Avenue intersections during school hours. Morales asked about consolidating 5th & 6th Streets for a signal and creating 4 legged intersections. Eaton stated that is problematic due to the cemetery at the end of 6th Street. Matthew Johnson stated that his main issue is road surface repair. The members discussed sidewalks, along with handicap ramps on the sidewalks. Eaton addressed drainage and lighting issues. Lewis addressed children walking over railroad crossing. Eaton discussed the Park Plan Path and adding it to the TSP. Matthew Johnson also addressed the parking in downtown area.

Future Meetings & Next Steps

The committee discussed the next steps, which include a community workshop to verify conditions and brainstorm solutions with the community. Lingley stated that the list of projects will be discussed at the next TAC meeting.

Adjourn

Lingley thanked everyone for attending and asked that any comments or suggestions be emailed to Charles Eaton, Jackie Loos, or herself. Meeting adjourned at 4:00 p.m.

Technical Advisory Committee (TAC) Meeting #2 Minutes

Technical Advisory Committee (TAC) Meeting #3 Minutes

Technical Advisory Committee (TAC) Meeting #4 Minutes

Community Meeting #1 – Summary

Date: Wednesday, February 5th, 2014

Time: 4:00 – 6:00 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Committee Members		
Citizens attending:	Larry Layton	Carolyn Miller
	Rudolf van Soolen	Eve Silverman
	William Daley	Mary Frances Jackson
	Russell Blunt	
Staff Present:	Charles Eaton, PE, City of Amity	
	Terra Lingley, CH2M Hill	
	Ryan Farncomb, CH2M Hill	
	Naomi Zwerdling, ODOT	

The purpose of this meeting was to solicit feedback from the community on the existing transportation conditions in Amity and ensure all existing problems have been identified. The project team advertized the meeting on the city website on the city's readerboard, and at City Hall. Attendees wrote comments on maps and comments forms provided at the event.

The following section summarizes the comment received.

Road system

- Left turns are difficult to make *from* OR 99 onto OR 153 and other side streets due to heavy traffic volumes. The striped center median is not a turn lane and does not allow enough room for left-turning cars to move out of the way of through traffic.
- Left turns *onto* OR 99W from side streets are difficult during morning and afternoon rush hours.
- New bulb-outs (curb extensions) on OR 99 make turns more difficult.
- Street connectivity is an issue – more connections needed in the southeast and northeast areas of town.
- A number of streets identified as "public" are actually private.
- There are two culverts in town – one on Goucher south OR 153 and one on OR 153 near the east city limits.

Bicycle & pedestrian system

- The state department of transportation prefers the pedestrian crossing on OR 153 at Getchell Avenue, but anecdotally, pedestrians are actually using the unimproved crossing at Oak Avenue.
- Intersection improvements at Rice Lane and OR 99 are much needed. This intersection will be improved this summer.

Other comments

- There is a need for an emergency evacuation plan, as well as more redundancy in the street network. Amity is vulnerable during an emergency because of the bridges and culverts on OR 99 and OR 153.

Community Meeting #2 – Summary

Date: Wednesday, June 18th, 2014

Time: 4:00 – 6:00 PM

Location: Amity City Hall, 109 Maddox Avenue, Amity, Oregon

Committee Members	
Citizens attending:	None.
Staff Present:	Charles Eaton, PE, City of Amity Ryan Farncomb, CH2M Hill Sumi Malik, CH2M Hill Eduardo Montejo, CH2M Hill Naomi Zwerdling, ODOT

There were no attendees from the community. Community members who could not attend this meeting in person could provide their comments via an online survey instead.

Community Meeting #2 Poster (English)

Help plan the future of transportation in Amity!

Amity is planning for the City's transportation future. The City is working on a long-range Transportation System Plan (TSP) that will look at ways to improve connections for everyone traveling in or through the City by foot, public transit, bike, car, or freight. Come learn about proposed projects and tell the City what you think.

Come to the community workshop!

Wednesday, June 18, 2014

Children welcome!

4:00 to 6:00 pm, drop by anytime

Amity City Hall (109 Maddox Avenue)

Special accommodations will be provided upon request. Please call (503) 835-3711 by June 9th.

Venga a un taller de trabajo para compartir sus ideas del proyecto. Servicios de traducción estarán disponibles. ¡Niños son bienvenidos! Por favor llame al (503) 835-3711 para pedir servicios de traducción antes del 9 de junio.

Learn more at www.ci.amity.or.us

Community Meeting #2 Poster (Spanish)

¡Ayude planear el futuro del transporte en Amity!

Amity está planeando el futuro de transporte de la Cuidad. La Ciudad está trabajando en un Plan a largo plazo para el Sistemas de Transporte (TSP) que verá maneras de mejorar las conexiones para todos los que viajen a través de la Cuidad a pie, a tránsito, en bicicleta, coche, ó carga. Venga a conocer acerca de los proyectos propuestos y dígale a la Ciudad lo que piensa.

¡Venga al taller de trabajo de la comunidad!

Miércoles 18 de junio, 2014
¡Niños son bienvenidos!
De 4:00 a 6:00 pm. Llegue cuando sea.
Amity City Hall (109 Maddox Avenue)

Espacios especiales están disponibles al solicitarlos. Por favor llame al (503) 835-3711 antes del 9 de junio.

Más información en la página de web www.ci.amity.or.us

Online Survey Summary

June 6th, 2014

Prepared for: Chuck Eaton, PE, City of Amity
Copy to: Naomi Zwerdling, ODOT

Prepared by:
Dawn Parker, CH2M HILL
Ryan Farncomb, CH2M HILL

An online survey was developed to solicit feedback from the public on the transportation alternatives being considered for the Amity TSP. The survey was open from the middle of April to the second week of May 2014. The survey was advertised on the city's electronic readerboard sign and on the main page of the city's website. The survey was also available in paper form at City Hall. In total, five response were received. The following sections review the comments received.

Street and Transit Projects

Are there other projects that should be considered? Which projects are most important? Which are least important? Do you have any comments or concerns about these projects?

Responses

Add a Signal at OR 99W/Trade Street and OR 153/Nursery Avenue

- I think this is a good idea.
- Please consider placing a light on 99A. Look at the back up is caused in Dundee.
- What will a light do to the main intersection at 99W and 5th street? Will this cause a lot of congestion when coming from 5th and trying to turn onto 99W?

Modify Oak Avenue to Right-in/Right-out on OR 153/Nursery Avenue

- I'm neutral on this.

Add a Left turn Pocket on Rice Lane

- This is a good idea.
- A turn pocket on to Rice would help traffic flow.

New Street Connections

- I don't think any of these are needed

  Rosedell Avenue to Rice Lane Connection

- Major issue: This is a flood zone.
- This is a FEMA flood zone and building a road on the edge of the cotton tree field will increase the flooding on Wolfe Ave. The road would require a bridge to cross a large drainage ditch.

3rd Avenue to OR 153/Nursery Avenue Connection

- I don't think any of this is needed.
- Major issue: This is a flood zone.
- This is located in a wetland area. Both the school district and the fire department tried to purchase and build in that area and were denied.
- This is the location at the end of 3rd Street and is in the sewage treatment plant. It would be extremely expensive to secure the ponds, chemicals and equipment so close to an active roadway. That part of the road has been the site of sewage spills in the past and it would have to cross a drainage/water shed ditch as well.
- This doesn't seem to be important at this time.

Additional Goucher Connection (3 options)

- No specific comments were received.

OR 153/5th Street Bridge Retrofit/Replacement

- This project is probably needed at some point.
- This project should be the city's number one transportation concern. It is in need of widening and repair.

Consider Realigning Offset Intersection on OR 99W/Trade Street

- No specific comments were received

Potential Park and Ride

- A parking lot for people would be nice, but where would we find the money to fund that? This town is small enough to walk just about everywhere.

Pedestrian and Cycling Improvements

Please think about these questions as you review the projects in the link above: Are there other projects that should be considered? Which projects are most important? Which are least important? Do you have any comments or concerns about these projects?

Responses

- Looks okay
- Sidewalks are a project that really need to be addressed, but bike paths, I don't think so.

- The choice of working on sidewalks and bike lanes is the best idea. There has been a need for sidewalks throughout the city. It is such a great community to walk. It is the responsibility of the city to put in sidewalks. The right-a-ways are there, use them.
- I don't think bike paths are important on any side streets (like Oak)

Other Comments

Do you have any other comments? Is there anything else you want to tell us?

Responses

- I would like to comment more on these projects, however I just learned about this project and am heading out of town.
- We need more business to come to town so we need to think about what would make them want to come to our town.
- I really do think the city should work on reclaiming road run off on all streets not just the few downtowns. The ditch system you see throughout is not only a lost water resource to the city but also allows damage to property.
- Pipes can be placed and sidewalks on top, parking can them happen in the right-a-way instead of in the road.
- I am very disappointed in the road conditions in the downtown area. The contractor did not compact the area correctly or it was engineered incorrectly and it is now settling. This is something that should be addressed and fixed.
- The intersection near the bank and post office seems really narrow. Why does it have to be so narrow when turning off of 99W?
- Barney Alley gets a lot more traffic than you would think. A pave job would be much appreciated.
- I think a light at nursery would be a great asset.
- The city needs to fix existing roads.
- Adding the correct drainage for road water run off as several roads in the city allow runoff on to private property.
- Look into TDML laws.

Survey Data

How did you hear about this open house?

Responses

- Word of mouth (2)
- City of Amity Facebook page
- News Article

- Just happened to visit the website

Race/Ethnicity?

Responses

- Caucasian (not of Hispanic origin) (3)

Language Spoken at Home?

Responses

- English (3)

What year were you born?

Responses

- 1954
- 1960

TSP Public Website:

http://www.ci.amity.or.us/TransportationSystemPlan/tabid/6729/language/en-US/Default.aspx

10/28/2014 City of Amity > Transportation System Plan

- Home
- Welcome to Amity
- Administration
- Building
- City Park
- City Projects
- Committees
- Community Organizations
- Council
- Economic Opportunity Analysis
- Emergency Operations Plan
- Engineer
- Frequently Asked Questions
- Historic Preservation
- Library
- Municipal Court
- Newsletter
- Ordinances & Resolutions
- Planning
- Police
- Public Notices
- Public Works
- Transportation System Plan
- Water/Sewer

Transportation System Plan

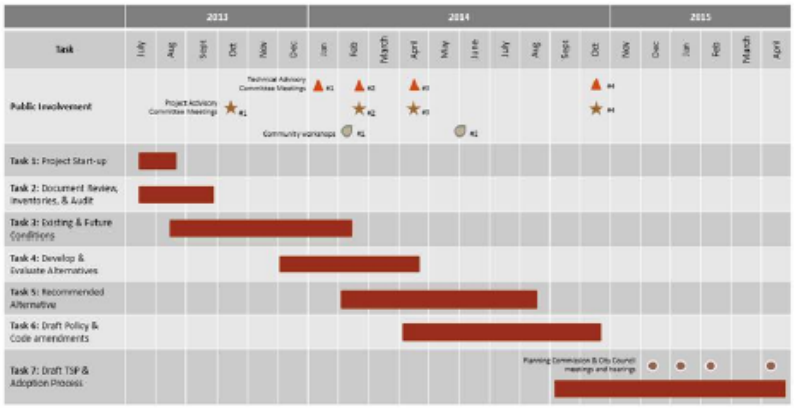
WELCOME!

The City of Amity is starting a planning process to look at how the transportation system is currently used and how it should change over the next 20 years for residents, businesses, and visitors. The City of Amity will create a transportation system plan (TSP) that will outline projects that the community would like to see built over the next 20 years for bikes, pedestrians, cars, and other transportation modes.

The TSP is being prepared in coordination with the Oregon Department of Transportation. It will also look into local, regional, and state policies, plans, and rules, including the Oregon Highway Plan and the region's transportation system plan.

Your involvement in this project is very important! Scroll down to read the project and meeting materials, as well as who is involved and the project schedule.

Amity Transportation System Plan: Updated Schedule 10/1014



Click of here for larger or printable version

PROJECT MATERIALS

- Audit, Plan, Policy Review and Evaluation Framework Memo (PDF, 741KB) - November 4, 2013
- Bike and Pedestrian Map (PDF, 718KB) – November 4, 2013
- Land Use Inventory Map (PDF, 561KB) – November 4, 2013
- Road Inventory Map (PDF, 696KB) – November 4,2013
- Existing Conditions FINAL (PDF, 5,841KB)
- Alterntaives FINAL (PDF, 3,413KB)

MEETING MATERIALS

The meeting materials for this project are listed below, with the oldest material at the top. Interested public members are welcome to attend these meetings and the meeting notes will be added to this website.

http://www.ci.amity.or.us/TransportationSystemPlan/tabid/6729/language/en-US/Default.aspx 1/3

Project Advisory Committee (PAC)

The Project Advisory Committee (PAC) is in charge of reviewing materials and making suggestions to the project team and local decision makers. The PAC will meet regularly throughout the project.

Click here for a list of the PAC members

- **The next PAC meeting is planned for January 2014. More information will be added later.**
- October 15, 2013 meeting notes
- April 10, 2014 Agenda
  - Technical Memo #2: Alternatives Evaluation
  - Meeting Notes
- May 27, 2014 Agenda
  - Street Standards v4
  - Technical Memo #3
  - Technical Memo #4
- October 22, 2014 Agenda
  - Technical Memo #3
  - Technical Memo #4
  - Technical Memo: Draft Policy/Code Amendment

Technical Advisory Committee (TAC)

The Technical Advisory Committee (TAC) is in charge of advising the project team on technical subjects and only meets a few times throughout the project.

Click here for a list of the TAC members

- January 8, 2014 Agenda
  - TSP Existing Conditions
  - January 8, 2014 meeting notes
- April 10, 2014 Agenda
  - Technical Memo #2: Alternatives Evaluation
  - Meeting Notes
- May 27, 2014 Agenda
  - Street Standards v4
  - Technical Memo #3
  - Technical Memo #4
- October 22, 2014 Agenda
  - Technical Memo #3
  - Technical Memo #4
  - Technical Memo: Draft Policy/Code Amendment

ATTENTION

- **Community Workshop- June 18th from 4-6 pm.** Click to see flyer
- Overall Map
- Projects 1 - 4
- Projects 5 - 10
- Projects 11 - 16
- Amity Technical Memo: Funding
- Amity Technical Memo: Recommended

► Conecte con la forma de commentario (espanol)

Take Survey

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