

2015 Clatsop County Transportation System Plan: Volume I



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Acknowledgements



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Volume I Contents

The Context.....	1
The Challenge	2
The Transportation System Plan	4
The Process.....	7
The Public Review Process.....	7
TSP Website	8
The Vision	9
Transportation Vision Statement	9
Realizing the Vision	10
TSP Goals.....	10
The Trends.....	11
Clatsop County in 2035.....	11
Funding Gap	15
The Investments.....	17
Constrained and Aspirational Projects	18
Prioritizing Investments	19
The Financially Constrained Transportation Plan.....	20
The Aspirational Transportation Plan	21
The Standards	31
Functional Classification	31
Street Design	32
Spacing Standards	36
Traffic Calming	37
Mobility Targets.....	38
Traffic Impact Analysis	39
Freight Routes	40
Evacuation Routes	40
Transportation System Management	43
Shared-Use Paths	44
Street Crossings	44
The Outcome	45
The Improved Transportation System	45
To the Planning Horizon and Beyond	46

Volume 2 Contents



Volume 2 of the Clatsop County Transportation System Plan includes all background memoranda, meeting summaries, and technical data that were the basis for its development.

Memo 1: Public and Stakeholder Involvement Strategy	Section A
Memo 2: Plan Review Summary.....	Section B
Memo 3: Regulatory Review	Section C
Memo 4: Goals, Objectives, and Criteria.....	Section D
Memo 5: Existing Transportation Conditions.....	Section E
Memo 6: Future Traffic Forecast	Section F
Memo 7: Future Transportation Conditions and Needs	Section G
Memo 8: Transportation Solutions Identification Process.....	Section H
Memo 9: Funding Assumptions	Section I
Memo 10: Transportation Standards.....	Section J
Memo 11: Transportation System Solutions	Section K
Memo 12: Transportation System Recommendations.....	Section L
Memo 13: Alternative Mobility Targets	Section M
Memo 14: Implementing Regulations and Policy Amendments...	Section N
Meeting Summaries	Section O
County Bridge Inventory	Section P
Federal Roadway Functional Classifications	Section Q

Figures and Tables

The Context.....	1
Figure 1: Clatsop County.....	1
The Process.....	7
Figure 2: The TSP Process	7
Figure 3: Public Review Process	8
The Vision	9
Figure 4: Transportation Solutions Identification Process	9
Figure 5: Reflecting the Vision in the Plan.....	10
The Trends.....	11
Figure 6: 2035 Summer Motor Vehicle Operations (P.M. Peak) and Corridor Health	14
Figure 7: Funding Gap for County Aspirational Projects.....	15
The Investments.....	17
Table 1: Financially Constrained and Aspirational Project List	22
Figure 8: Planned Walking, Biking, and Transit Investments	29
Figure 9: Planned Driving Investments	30
The Standards	31
Figure 10: Street System	33
Figure 11a: Minor Arterial Street.....	34
Figure 11b: Major Collector Street	34
Figure 11c: Minor Collector Street	34
Figure 11d: Local Street	35
Figure 11e: Resource Route on Minor Arterial or Major Collector	35
Table 2: Spacing Standards	36
Figure 12: Truck Routes	41
Figure 13: Emergency Response.....	42
Figure 14: Typical Cross-Section for Shared-Use Paths.....	44
The Outcome	45

Bordered by the Columbia River and Pacific Ocean, Clatsop County is home to the historic waterfront town of Astoria and beach towns such as Seaside and Cannon Beach, popular destinations within a two-hour drive of the Portland metropolitan area. Clatsop County relies heavily on the visitors drawn to its beaches, hiking and camping, fairgrounds, and more.

Astoria, on the site of Fort Astoria founded in 1811, is one of Oregon’s oldest cities. Seaside is Oregon’s oldest ocean resort community and home to Seaside Aquarium, one of the oldest on the West Coast. Fort Stevens was the only U.S. continental military installation attacked during World War II. From the Astoria-Megler bridge at Astoria to the Lewis and Clark bridge between Rainier, Oregon, and Longview, Washington, the Westport Ferry to Puget Island is the only other crossing of the Columbia River for approximately 60 miles.

Clatsop County’s economy is largely driven by tourism and industry (including timber and fishing). The Port of Astoria was created to support trade and now also serves cruise lines that connect to Canada, Seattle, San Francisco, San Diego, and other west coast cities.



Figure 1: Clatsop County

The Challenge

Clatsop County faces the challenge of accommodating population and employment growth while maintaining acceptable service levels on its transportation network. The transportation system must support people passing through, residents, and thousands of tourists who visit in the summer and holiday weekends. With limited funding for transportation improvements and challenges in the built and natural environment, the county must balance its investments to ensure it can develop and maintain the transportation system to adequately serve the county and everyone who travels in it.

Addressing Diversified Transportation Needs in a County with Different Locational Settings

Part of the challenge is how to address the diversified needs of residents throughout the county. The county contains incorporated cities, including Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton; rural communities, including Arch Cape, Miles Crossing, Jeffers Gardens, Jewell, Knappa, Svensen, and Westport; and rural areas. This transportation system plan (TSP) describes these three areas and how it will serve their residents as:

- **Urban areas** of the county typically have more pedestrian activity and are often on a transit route. A variety of travel choices are emphasized—such as pedestrian, bicycle, and transit—to complement development along the street.
- **Rural communities** are often within areas of concentrated development in less urban parts of the county. Accommodating the needs of people who walk and bicycle in the rural context is emphasized in these areas.
- **Rural areas** are generally surrounded by sporadic development. Motor vehicle circulation, while still allowing for safe walking and bicycling, is emphasized in these areas.



Engaging Seniors, Non-English Speakers, and Low-Income Populations

As part of the outreach to engage citizens and stakeholders in developing the TSP, the county made special efforts to involve seniors, minority and low-income groups (For more information on the public involvement plan for the TSP, see Volume 2, Section A).

According to the 2012 U.S. Census, nearly eight percent of Clatsop County residents are of Hispanic or Latino origin. In addition, over 14 percent of residents within Clatsop County are below the poverty line.

To engage the county's Hispanic or Latino community, written materials and translation service were made available in Spanish upon request. The county also posted project advertisements in locations where Hispanic or Latino community members were likely to see them.

Clatsop County also posted project advertisements in locations where representatives or members of Native American tribes in the region were likely to see them. This includes the Confederated Tribes of the Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of Warm Springs, Clatsop-Nehalem Confederated Tribes, and the Chinook Indian Nation.

To engage anyone who cannot drive and senior citizens, public open house events were held at locations accessible via transit, walking, or biking when feasible.

Downloadable materials were provided on the project website. Hard copies of project documents were available upon request for anyone without Internet access.



Establishing a Resilient Transportation System

Resilience refers to the transportation system’s ability to continue functioning in variable and unexpected conditions (without catastrophic failure). Since the future is unpredictable, it is necessary to plan for a wide range of possible conditions, including some that may be unlikely but that could result in significant impact if not anticipated. Of particular concern to the Pacific Northwest coast is the risk from an offshore earthquake and resulting tsunami.

Enabling residents to move freely and easily away from adverse conditions or toward areas of greater safety can be an important strategy for increasing resilience. For example, after an earthquake, residents must be able to quickly evacuate from tsunami inundation areas. Resources must be brought in to help with recovery efforts. Having redundant transportation routes increases the likelihood of maintaining system connectivity during and after such an event and is therefore an important part of Clatsop County’s overall resilience.

The Transportation System Plan

The citizens of Clatsop County are acutely aware of the county’s transportation challenges and the need to work toward developing a more resilient transportation system through 2035 in the most efficient manner possible. This TSP has been developed to explain the county’s transportation system opportunities and constraints. It will help the county invest its limited resources to address the transportation issues identified in this plan in a more strategic and efficient manner than if piecemeal actions are taken.

What is the TSP?

The TSP is a complete evaluation of the current transportation system that identifies projects, services, and strategies that are important for managing the Clatsop County transportation system over the next 20 years. The TSP also provides a foundation to evaluate and determine what improvements could or should be required when land development occurs. Plan elements can be



01 THE CONTEXT



implemented by the county, local agencies (e.g., Astoria, Warrenton, Seaside), private developers, and state or federal agencies. The projects, services, and strategies recommended in the TSP have been developed by analyzing both past improvement ideas (see TSP Volume 2, Section B for a summary of past improvement ideas) and those that were identified through the current TSP analysis process.

This plan is primarily intended to serve areas of the county outside of the urban growth boundaries of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton. These cities have their own TSPs; however, the county plan does apply to any streets under the county's jurisdiction within these cities.

A TSP is required by the State of Oregon as an element of a county's comprehensive plan that shows how the county complies with Statewide Planning Goal 12, the transportation goal (see TSP Volume 2, Section B and C for more detail). The purpose of the TSP is to balance the needs of walking, bicycling, driving, transit, and freight within an equitable and efficient transportation system and to make recommendations that are consistent and coordinated with local agency and state projects, services, and plans.

The TSP is also a tool for identifying community values as they relate to the transportation system and investing the available funds in a way that best protects what makes Clatsop County a great place to call home, do business, and visit.

Finally, a TSP is a means to identify and advocate for the projects and services that the county would like to implement but cannot reasonably expect to afford during the 20-year planning horizon, based on current and forecasted revenues.



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02 THE PROCESS

The creation of the Clatsop County TSP was a collaborative process among various public agencies, key stakeholders, and the community. Throughout this process, the project team conducted committee meetings and open house workshops to consider multiple points of view, obtain fresh ideas and perspectives, and encourage further participation from the community.

The county hosted six Project Advisory Committee meetings, held meetings with its Planning Commission and Board of Commissioners, and conversed informally with members of the community at eight public open house events. These events were especially important to give residents an opportunity to learn about the project and express their thoughts on how the transportation system might be improved. (For a summary of the meetings, see Volume 2, Section O.)

The Public Review Process

The development of the TSP involved gathering information and ideas from residents, business owners, visitors, and other stakeholders in Clatsop County. The process (shown in Figure 2) was broken into five stages. Each stage was supported by a series of technical memoranda, which presented specific topic areas and key findings ranging from existing transportation conditions to funding assumptions and recommended transportation solutions. Each memorandum was posted to the project website (as shown in Figure 3), so members of the community could give feedback and keep up to date with the project.

A Project Advisory Committee, comprising agency (local and state) technical staff, local residents, and business representatives, was also formed. This committee reviewed and commented on each memorandum and met with the project team at key stages during the project. This committee also helped the project team reach



Figure 2: The TSP Process

agreement on the project issues and alternatives that were ultimately presented to the Planning Commission and Board of Commissioners.

In addition, the project team hosted open houses at multiple locations throughout the county as a forum to inform the public about the status of the project and to gather comments. The project team also held work sessions with the Planning Commission and Board of Commissioners.

Based on the feedback received, the project team revised the draft memoranda and the documents were reposted to the TSP website. These revised memoranda were used to create the Draft TSP.

Subsequent public hearings with the Planning Commission and Board of Commissioners on the Draft TSP ultimately led to the adoption of the 2015 Clatsop County Transportation System Plan.

TSP Website

Throughout the project, a website was maintained where all project news, documents and meeting notices were posted. The website also featured a comment map, where residents could tell the project team what they thought about the transportation system in the county. This feature submitted these comments and questions directly to the project team throughout the process.



Figure 3: Public Review Process

Clatsop County understands that transportation funding is limited and recognizes the importance of being fiscally responsible in its approach to enhancing the transportation system. Therefore, the county’s approach to developing this TSP placed more value on investments in smaller, cost-effective solutions for the transportation system. The approach identifies transportation improvements to accommodate future travel demand by following a four-step process that considers solutions from top to bottom (as shown in Figure 4) until a viable one is identified. This process is similar to the one followed by the Oregon Department of Transportation (ODOT) and is based on Oregon Highway Plan (OHP) Policy 1G.

This process allowed the county to maximize use of available funds, minimize impacts to the natural and built environments, and balance investments across all modes of travel. (See Volume 2, Section H for more information.)

Transportation Vision Statement

The following vision statement was developed by the project team and provides direction for the future of the transportation system in Clatsop County.

All transportation modes flow smoothly and safely to and throughout the county, meeting the needs of residents, businesses, visitors, and people of all physical and financial conditions. Existing transportation assets are protected and complemented with multi-modal improvements. Evacuations and emergency response preceding and following natural disasters are managed effectively.



Figure 4: Transportation Solutions Identification Process



Figure 5: Reflecting the Vision in the Plan

Realizing the Vision

Clatsop County developed eight transportation goals and associated objectives to provide more specific direction. Because the transportation solutions recommended through the TSP must be consistent with these goals and objectives, the county prepared measurable evaluation criteria to screen and prioritize these solutions (Figure 5). (See Volume 2, Section D for more information.)

Based on the evaluation scores, each transportation solution was assigned a time frame for the expected investment need. Projects with higher evaluation scores are expected to contribute more toward achieving the transportation goals of Clatsop County and were assigned shorter time frames for implementation, with the understanding that only a few projects can be implemented considering current funding constraints.

TSP Goals

These eight transportation goals were used to prioritize transportation solutions.

- **Goal 1:** Provide for efficient motor vehicle travel to and through the county.
- **Goal 2:** Increase the convenience and availability of pedestrian and bicycle modes.
- **Goal 3:** Provide transit service and amenities that encourage a higher level of ridership.
- **Goal 4:** Provide an equitable, balanced and connected multi-modal transportation system.
- **Goal 5:** Enhance the health and safety of residents.
- **Goal 6:** Foster a sustainable transportation system.
- **Goal 7:** Ensure that the transportation system supports a prosperous and competitive economy.
- **Goal 8:** Coordinate with local and state agencies and transportation plans.

Before determining what investments were needed for the transportation system, the county reviewed the current travel conditions and forecasted future growth and travel trends through 2035. For this assessment it was assumed that only the transportation projects with committed funding would be built and that no further investments would be made to the transportation system. (See Volume 2, Section G for more information.)

Clatsop County in 2035

Aging Population

The age of the population will play a key role in determining modes of transportation for Clatsop County residents. The youngest and oldest residents usually make more trips by walking, biking, and public transportation than do other residents. Today, school-age children and residents over 65 make up about 40 percent of the population in the county. By 2035, this number is expected to increase nearly 10 percent, accounting for half of all county residents. The most notable expected change is the number of residents over the age of 65, which is forecasted to increase from 17 percent to 27 percent by 2035. This means more residents in the county may become dependent on public transportation and the associated walking and biking facilities on either end of the trip (e.g., sidewalks that connect a bus stop to the neighborhood).

Population and Employment Growth

Today, Clatsop County is home to 37,250 residents and businesses supporting more than 17,000 jobs. Between now and 2035, projected employment growth will increase about one percent a year, outpacing the half-percent-per-year rate of household growth over the same period. By 2035, Clatsop County will have about 40,500 residents and about 22,000 jobs, a nine percent and 30 percent increase, respectively, from 2013. With more people and more jobs in Clatsop County, and more tourism activity on the coast, the transportation network will face increasing demand.

Projects with committed funding included:

- **Ensign Lane Extension, Phase II:** This project was recently completed. It extended Ensign Lane from SE 19th Street to US 101 Business. A new “T” intersection was created at US 101 Business/ Ensign Lane.
- **US 101 and Sunset Beach Road Intersection:** A “J” turn will be installed just to the south of the intersection. The project will allow eastbound drivers on Sunset Beach Road destined for northbound US 101 to make a right onto southbound US 101, and then make a U-turn to northbound US 101.

More Travel and Tourism

During the summer evening peak hour, key highways such as US 101 and US 30 in Clatsop County will be expected to accommodate hundreds more motor vehicle trips due to more jobs, residents, tourists, and through travel. Today, the Clatsop County road network is generally able to handle the summer evening peak hour trips; however, by the end of 2035, motor vehicle trips are likely to increase over 45 percent at intersections along portions of US 101, US 101 Business, US 30, and several streets in Warrenton.

The county used 2035 motor vehicle volumes for summer conditions to determine areas on the baseline roadway network that will be congested and may require future investments to accommodate forecasted growth. The 2035 baseline motor vehicle volumes for study intersections (see TSP Volume 2, Section F and G) are anticipated to be highest along US 101, which connects the surrounding region to the employment areas and tourist destinations in Astoria, Warrenton, and Seaside. Other roadways expected to experience significant traffic increases are US 101 Business, US 30, and US 26. Each of these roadways connects the Portland metropolitan region or major residential and/or employment areas in the county to US 101.



More Congestion

An increase in motor vehicle travel leads to an increase in congestion. Evening peak hour motor vehicle trips beginning or ending in Clatsop County are expected to increase significantly through 2035. Through trips—trips that neither begin nor end in Clatsop County—are also expected to increase through 2035 and are generally representative of the overall increase in tourism activity and growth in Oregon. By 2035, approximately 13 miles of roadways in the county (all are along US 101 or US 30) are expected to approach mobility targets (i.e., be within 20 percent of the mobility target) during peak periods of the year. (See page 38 for more information on mobility targets.) Figure 6 shows that most locations of future peak period congestion are expected to be along US 101 between Seaside and Warrenton, especially at intersections along this segment during the peak summer months (typically July through September); however, these roadways would likely be uncongested on an average weekday or during non-summer months.

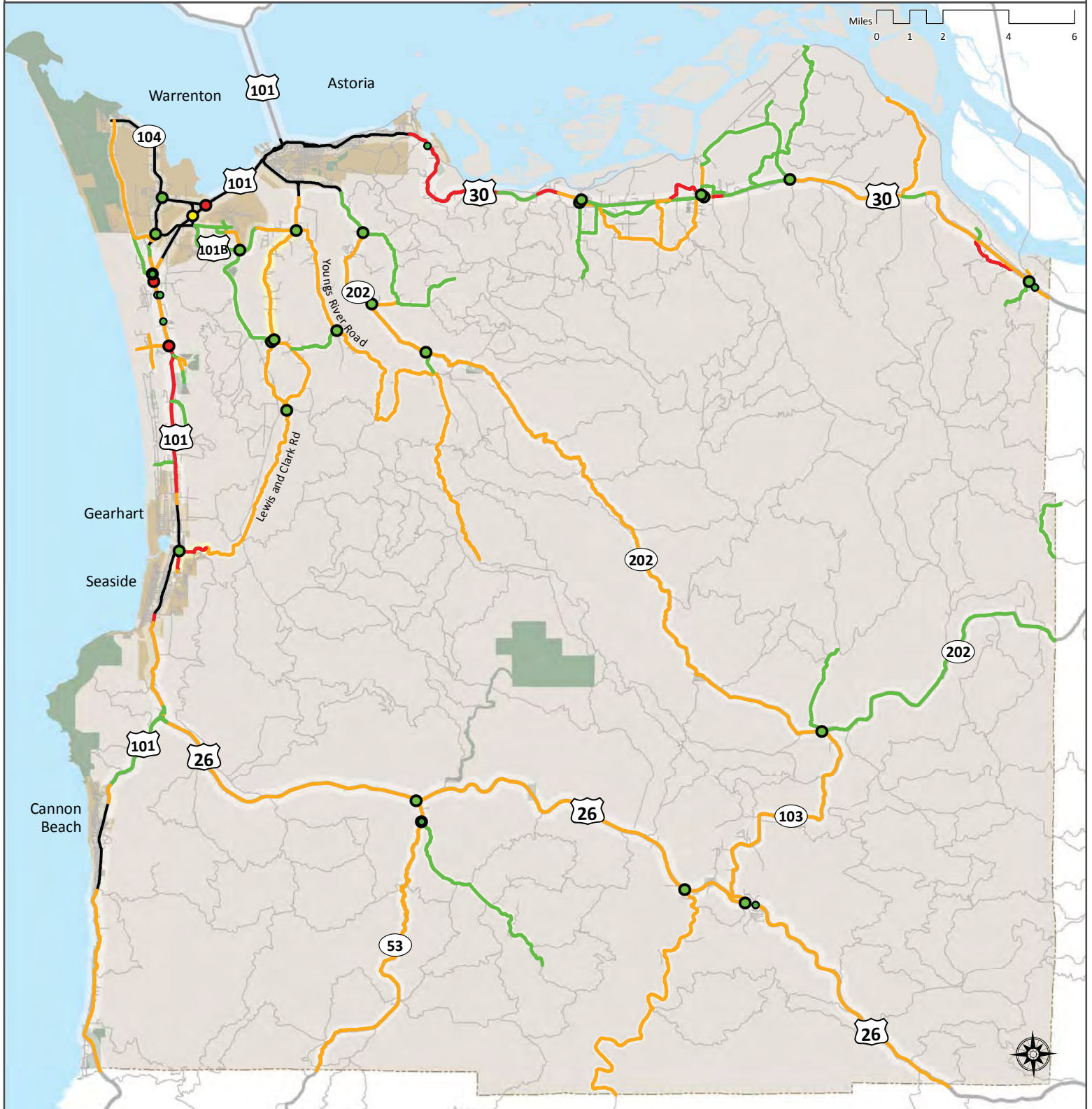
Declining Corridor Health


An increase in congestion along roadways is expected to lead to a decline in the “health” of these corridors. Corridor health is a concept based on measuring the performance of the roadway in four evaluation categories—traffic operations, safety, road geometry, and access spacing—which align with the goals of the TSP. The measurements are combined to provide a picture of the ability of the corridor to operate successfully—or its overall health. Following guidance from the Project Advisory Committee, scores from the corridor health analysis were weighted by placing more value on traffic operations and safety and less on geometrics and access spacing. (For more information on the Corridor Health Tool, see TSP Volume 2, Section E and G.)

Figure 6 shows the 2035 corridor health scores using a “good, fair, poor” scoring system. Nearly 10.5 miles of state highways and 4.5 miles of county roadways are expected to have “poor” corridor health scores overall by 2035. This is an increase of about six miles over five street segments from existing 2013 conditions. Overall, 13 street segments totaling more than 12 miles are expected to have overall corridor health scores decline a category (i.e., from “good” to “fair”) from existing 2013 conditions by 2035.



Figure 6 - 2035 Summer Motor Vehicle Operation Conditions (P.M. Peak) & Corridor Health



Legend		Corridor Health Score	Peak Seasonal Intersections Operations	Corridor Health Weighting
	City			Safety: 35%
	Park			Traffic Operations: 35%
	Clatsop County			Geometrics: 15%
	Water			Access Spacing: 15%

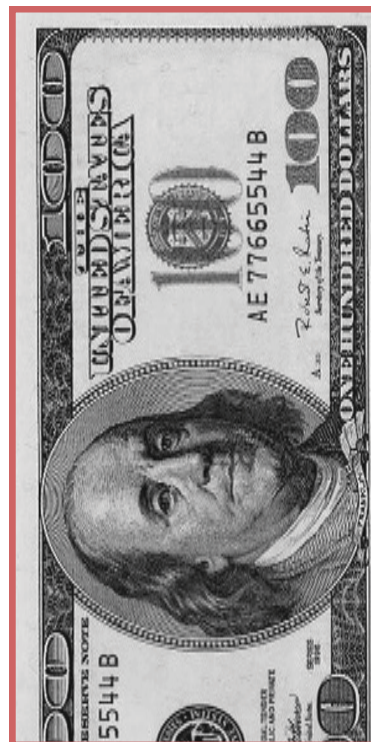
Funding Gap

The total cost of the aspirational transportation system projects is greater than funding available from Clatsop County and its partner agencies' sources. With nearly all of the current revenue streams being used for maintenance of the transportation system, and with these costs continuing to rise through 2035, the county is expected to have limited funds for transportation improvements. Unless additional revenue streams are developed, Clatsop County expects to have approximately \$4 million to spend on the 34 transportation improvements for which it would be the primary source of funding over the next 20 years. However, it would take nearly \$63 million to construct all 34 projects, meaning nearly \$59 million in needed projects will not be funded. As shown in Figure 7, only \$6 of every \$100 worth of planned expenses, for which the county is responsible, are expected to be funded.

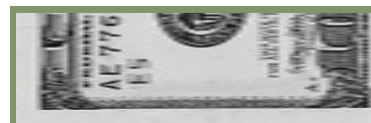
The county has also identified nearly \$104 million in projects (spread out over 42 projects) along state highways. ODOT has determined that it is reasonable to assume that \$8 million to \$10 million in state discretionary funds will be available to fund new projects in Clatsop County over the next 20 years. This means that nearly \$94 million in projects on the state system are not expected to be funded within the Clatsop County TSP planning horizon.

The county has also identified five projects estimated at nearly \$20 million that would be jointly funded by the state, county, and local agencies, including Astoria, Warrenton, and Seaside and six projects estimated at \$135,000 that Sunset Empire Transportation District would provide the primary source of funding. The county supports these projects, although full implementation (beyond project pre-design) is not anticipated for most of them. (For more information on the funding assumptions utilized for the TSP, see Volume 2, Section I.)

About \$6 out of every \$100 of the county responsible aspirational project expenses is expected to be funded



\$94
Unfunded



\$6 Funded

Figure 7: Funding Gap for County Aspirational Projects

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With an estimated \$187 million of transportation system projects that would have Clatsop County and ODOT support, the county must make decisions to determine which of these projects are “reasonably likely” to be funded between 2015 and 2035. (As previously stated, the county is expected to have approximately \$4 million to cover the \$63 million in project costs for which it will be the primary funding source over the next 20 years. In addition, ODOT has determined that the county can reasonably assume that \$8 million to \$10 million from state and federal funding sources may be available to address some of the \$104 million of recommended projects along state highways over the next 20 years.)

Although none of these funding projections are assured, they establish the funding constraints for the Clatsop County TSP. Projects that cannot be funded are, by default, aspirational. While they address a legitimate problem and have local and/or state support, they are not expected to be funded during the 20-year planning horizon. This is not to say that priorities might not change in a way that moves a project from the constrained list to the aspirational list and vice versa. It also does not preclude the possibility that some aspirational projects may be implemented within the 20-year planning horizon if additional funding beyond the current constrained threshold is secured



Constrained and Aspirational Projects

Constrained projects are improvements that the county and ODOT believe are reasonably likely to be funded during the 20-year planning horizon based on the constrained funding threshold established through their funding analysis. Aspirational projects include all identified projects for improving Clatsop County’s transportation system that are supported by the county and ODOT, regardless of their primary funding source or priority, but are not reasonably likely to be funded during the 20-year planning horizon. The full list of constrained and aspirational projects is shown in Table 1 on page 22. (See Volume 2, Section K and L for more information on the development of the TSP project list.)

Overall, Clatsop County identified 87 transportation solutions, totaling an estimated \$187 million in investments. Taking a multi-modal, network-wide approach to identifying transportation system solutions, these projects fall within one of four categories:

- **Driving projects** to improve connectivity, safety, and mobility throughout the county. Clatsop County identified 38 projects to improve driving conditions that would cost an estimated \$102.5 million to complete.
- **Walking and Biking projects** to provide seamless connections throughout the county. Clatsop County identified 37 walking and biking projects that would cost an estimated \$82.5 million to complete. Note there are a number of walking projects that are combined with biking projects and vice-versa, particularly shoulder widening or shared-use path projects.

It should also be noted that there are several walking and biking projects identified that are shown at a larger scale and have an associated cost well beyond the current financial constraint threshold. However, these walking and biking projects have a minimal impact on, and can largely be accomplished in, the existing right-of-way. In addition, these projects are scalable; for example, a project identified in this TSP to address a longer



segment, could be implemented or combined in smaller phases with a related maintenance activity like a pavement rehabilitation project.

- **Transit projects** to enhance the quality and convenience for passengers. A total of six transit projects were identified that would cost an estimated \$135,000.
- **Other projects** to further study various multi-modal and safety issues. A total of six projects were identified that would cost an estimated \$2 million.

Prioritizing Investments

Unless the county expands its funding sources, most of the aspirational transportation system projects identified are not reasonably likely to be funded through 2035. For this reason, the transportation solutions were split into two categories. Those reasonably expected to be funded by 2035 were listed as a financially constrained transportation project, while those that are not expected to be funded by 2035 were listed as an aspirational transportation project.

Each aspirational project was scored based on the evaluation criteria described in Section D of TSP Volume 2. The scores were totaled for each project and used to solicit feedback from the Project Management Team and Project Advisory Committee. The input eventually led to a hybrid package of transportation investments that focused on improving safety along streets and establishing a more resilient transportation system to be included in the Financially Constrained Plan.



Funding for Pre-Design:

The Project Advisory Committee advised the project team to use a strategy that funded some projects through pre-design, rather than full construction, to more effectively utilize the limited funding and help prepare the county to compete for additional funding sources should the opportunity arise.

The Financially Constrained Transportation Plan

Projects in the Financially Constrained Transportation Plan are transportation solutions that are off state highways, are reasonably expected to be funded by 2035, and have the highest priority for implementation. They represent about \$4 million worth of investments, spread over 11 projects, and the county would be the primary source of funding. Of these investments, nearly \$3 million has been allocated to fund five projects through pre-design only, meaning additional funding would be needed for full design and construction. The financially constrained projects are shown in Table 1 and in Figures 8 and 9.

Transportation solutions for these financially constrained projects were recommended for different priority/time horizons:

- **Short-term:** projects recommended for implementation in within one to five years.
- **Medium-term:** projects recommended for implementation in within five to 10 years.
- **Long-term:** projects likely to be implemented within 10 to 20 years from the adoption of this plan. These projects are important for the development of the county transportation network but are unlikely to be funded in the next 10 years (but they will be funded within 20 years).

ODOT Projects on State Highways

In addition to the projects included in the financially constrained transportation plan that would primarily be funded by the county, ODOT has projected that the county could receive up to \$10 million from various state and/or federal sources over the next 20 years. Based on current needs, Table 1 and Figures 8 and 9 show a reasonable estimate of how the county would use the state funds. While part of the financially constrained plan, the seven projects

shown in the constrained list are merely illustrative of a group of projects that could be funded. Because ODOT supports all of the projects listed in the constrained and aspirational plans, strict adherence to priority implementation of the projects currently shown on the constrained list is not required by ODOT. This list may be modified and adapted within the limits of the financial constraint threshold, as it currently exists or as it may evolve, to advance any supported project on state highways in response to any opportunity or issue that may arise during the planning horizon

The Aspirational Transportation Plan

The projects and actions described in the Financially Constrained Transportation Plan will help improve the transportation system in Clatsop County. If the county can implement a majority of these projects, nearly two decades from now its residents will enjoy a safer, more balanced multi-modal transportation network.

The projects in the Aspirational Transportation Plan are transportation solutions that are not reasonably likely to be funded by 2035 based on current financial constraints. Each identified project is supported by the county and/or ODOT and is important to the transportation system. Some projects will require public sector funding and resources beyond what is available in the time frame of this TSP. Others are contingent upon joint funding from other local agencies. The aspirational projects represent nearly \$173 million in investments beyond those included in the Financially Constrained Transportation Plan. These projects are also shown in Table 1 and in Figures 8 and 9.

Transportation solutions in the Aspirational Transportation Project Plan were recommended for different priority/time horizons:

- **Long-term Phase 2:** Projects with the highest priority for implementation beyond the projects included in the Financially Constrained Transportation Plan, should additional funding become available.



- **Long-term Phase 3:** Projects with the next highest priority for implementation beyond the projects included on the Financially Constrained Transportation Plan, should additional funding become available.
- **Long-term Phase 4:** The last phase of projects to be implemented, should additional funding become available.

Table I: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
B01	Old US Highway 30 (Taylorville Rd.) near Wauna and Westport - Stripe fog lines and center lines, expand shoulders as needed.	Aspirational-Long Term Ph3	\$1,500,000	County
B02	Ziak-Gnat Creek Rd. between US 30 and Knappa Dock Rd. - Improve shoulders to Major Collector standards.	Aspirational-Long Term Ph3	\$5,800,000	County
B03	Knappa Dock Rd. - Improve shoulders to Major Collector standards and include bike symbols in shoulders at intersections.	Aspirational-Long Term Ph4	\$1,400,000	County
B04	Hillcrest Loop Rd. between US 30 (M.P. 82.01) and Old US Highway 30 - Improve shoulders to Major Collector standards and include bike symbols in shoulders at intersections.	Aspirational-Long Term Ph3	\$4,500,000	County
B05	Old US Highway 30, between US 30 intersection (M.P. 82.01) and Svensen Market Rd. - Improve shoulders to Major or Minor Collector standards (as appropriate).	Aspirational-Long Term Ph3	\$3,650,000	County
B06	Simonson Loop Rd. between Svensen Market Rd. and Old US Highway 30 - Improve shoulders to Major Collector standards, including striping shoulders and include bike symbols in shoulders at intersections.	Aspirational-Long Term Ph4	\$1,650,000	County
B07	US 30 / Svensen Market Rd. intersection - Improve bike shoulder striping through the intersection, placing the through bike movement to the left of the dedicated right turn lanes.	Aspirational-Long Term Ph4	\$150,000	State
B08	US 30 / John Day River Rd. intersection - Improve bike shoulder striping through the intersection, placing the through bike movement to the left of the dedicated right turn lane.	Aspirational-Long Term Ph3	\$75,000	State
B09	Youngs River Rd. between Lewis and Clark Rd. and Tucker Creek Ln. - Improve paved shoulders to county standard for major collectors.	Aspirational-Long Term Ph3	\$3,350,000	County
B10	Youngs River Rd. between Tucker Creek Ln. and OR 202 - Improve paved shoulders to county standard for major collectors.	Aspirational-Long Term Ph3	\$6,800,000	County
B11	Lewis and Clark Rd. between Kee Ln. and Logan Rd. (north intersection) - Improve paved shoulders to county standard for minor arterials/major collectors (as appropriate), including rumble strips and bike symbols. Avoid installing rumble strips adjacent to residential areas and provide gaps for bicyclists.	Aspirational-Long Term Ph2	\$1,000,000	County
B12	Logan Rd. between Lewis and Clark Rd. intersections - Improve paved shoulders to county standard for minor arterials, including rumble strips and bike symbols. Avoid installing rumble strips adjacent to residential areas and provide gaps for bicyclists.	Aspirational-Long Term Ph2	\$2,050,000	County
B13	Lewis and Clark Rd. between Logan Rd. (south intersection) and Seaside city limits. - Improve paved shoulders to county standard for minor arterials, including rumble strips and bike symbols. Avoid installing rumble strips adjacent to residential areas and provide gaps for bicyclists.	Aspirational-Long Term Ph2	\$6,250,000	County

05 THE INVESTMENTS



Table I Continued: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
B14	US 101/Sunset Beach Rd. - Improve bike shoulder striping through the intersection, placing the through bike movement to the left of the dedicated right turn lane.	Financially Constrained-Long Term	\$100,000	State
B15	Lewis Rd., along entire County facility in Sunset Beach. - Improve shoulders to Minor Collector standards. Install a speed warning system that activates when a motorist approaches at a high speed.	Aspirational-Long Term Ph2	\$500,000	County
B16	Dellmoor Loop, along entire County facility from US 101 to US 101. - Improve shoulders to Minor Collector standards, including striping shoulders.	Aspirational-Long Term Ph3	\$1,600,000	County
B17	US 101/Highland Ln. - Improve bike shoulder striping through the intersection, placing the through bike movement to the left of the dedicated right turn lane.	Aspirational-Long Term Ph3	\$150,000	State
B18	West side of US 101 through the US 26 interchange. - Off-highway shared-use path for bypassing the US 101/US 26 interchange in the southbound direction. Beginning at M.P. 24.9, follows the local road, then continues as a new path until merging back onto the US 101 shoulder, around M.P. 25.7.	Aspirational-Long Term Ph2	\$1,100,000	County
B19	US 26 at all locations where paved shoulder width is less than four feet. - Improve paved shoulders to a minimum of four feet width.	Aspirational-Long Term Ph2	\$5,250,000	State
B20	OR 202 and Maple Road - Improve shoulders to ODOT standards and stripe.	Aspirational-Long Term Ph2	\$7,400,000	State
B21	OR 202 between Walluski Loop (north) and Youngs River Rd. - Improve shoulders to ODOT standards and stripe.	Aspirational-Long Term Ph2	\$2,650,000	State
B22	Walluski Loop - Improve shoulders to Major Collector standards and stripe.	Aspirational-Long Term Ph4	\$5,350,000	County
B23	New Young's Bay Bridge - Install additional bike detection for cyclists traveling along the bridge.	Financially Constrained-Long Term	\$500,000	State
B24	Astoria Megler Bridge - Install additional bike detection for cyclists traveling along the bridge.	Aspirational-Long Term Ph2	\$500,000	State
B25	Bike facility intersections throughout the county. - Provide bike wayfinding signage at key junctions throughout the county to help bicyclists navigate bike routes and access major destinations.	Aspirational-Long Term Ph3	\$25,000	County
B26	Major destinations throughout the county. - Directly provide or encourage bike parking at major destinations throughout the county.	Aspirational-Long Term Ph3	\$50,000	County
B27	Lewis and Clark Rd. and US 101 - Change Coast Bike Trail designation from Lewis and Clark Rd. to US 101.	Aspirational-Long Term Ph3	\$5,000	County
D01	US 30/Old Mill Town Rd. and US30/Westport Ferry Rd. - Realign intersections to reduce skew, improve illumination at intersections, and improve pedestrian crossings.	Financially Constrained-Medium Term	\$2,000,000	State

Table I Continued: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
D02	Connects US 30/Old US Highway 30 to Westport Ferry Rd. - New collector to connect US 30 with the interstate ferry in Westport. Includes bike/ped facilities, left turn lanes off US 30 in both directions, and a right turn lane from US 30 westbound. Requires a new rail crossing and would close or make emergency-only the existing at-grade crossing.	Aspirational-Long Term Ph2	\$3,000,000	County
D03	US 30 / Old US Highway 30-Hillcrest Loop Road intersection in Knappa - Reduce the paved width of the Old US Highway 30 approach. Improve pedestrian crossing on the east leg of the intersection.	Financially Constrained-Short Term	\$200,000	State
D04	US 30 between Old US Highway 30 (east of Abbot Rd) in Knappa and Astoria City Limits - Add rumble strips to highway shoulders and centerline in do-not-pass zones.	Aspirational-Long Term Ph4	\$55,000	State
D05	US 30, between Fern Hill Rd. and John Day River Bridge - Add an eastbound climbing lane on US 30.	Aspirational-Long Term Ph4	\$13,500,000	State
D06	Between OR 202 south of Astoria and US 30, east of Astoria - Project to study the feasibility of creating 2-lane county road to provide an alternate route between OR 202 and US 30.	Financially Constrained-Medium Term	\$200,000	County
D07	US 30/Liberty Ln. - Realign intersection and provide a southbound left turn pocket on US 30.	Aspirational-Long Term Ph4	\$400,000	State
D08	Irving Ave., between the existing east terminus and Nimitz Dr. - Extension of Irving Ave. to connect with Nimitz Dr. Implement in coordination with Astoria as project includes portions inside and outside the Astoria Urban Growth Boundary.	Financially Constrained-Short Term	\$7,000,000	County/Astoria
D09	OR 202, just east of Williamsport Rd. - Raise the pavement just east of Williamsport Rd. (around the curve) to reduce recurring flooding.	Aspirational-Long Term Ph3	\$9,000,000	State
D10	OR 202 from M.P. 4.63 to M.P. 6.44 - Add rumble strips to highway shoulders and to centerline in do-not-pass zones.	Aspirational-Long Term Ph4	\$100,000	State
D11	Warrenton-Astoria Hwy. (US 101B)/Lewis and Clark Rd./Youngs River Rd. intersection - Construct a roundabout at the intersection, with enhanced navigational signage on the approaches. This roundabout includes a southbound right-turn bypass lane, similar to the existing geometry, that allows US 101B southbound traffic to pass through the intersection unimpeded.	Financially Constrained-Short Term	\$5,600,000	State
D12	Warrenton-Astoria Hwy. (US 101B) between Lewis and Clark River Bridge and Old Youngs Bay Bridge - Improve cross section to three lanes with one 12' travel lane in each direction, a 14' center left turn lane, two 6' sidewalks, and two 6' bike lanes.	Aspirational-Long Term Ph4	\$10,000,000	State
D13	Warrenton-Astoria Hwy. (US 101B)/Fort Clatsop Rd. - Addition of westbound right turn deceleration lane on Warrenton-Astoria Hwy. (US 101B) and southbound left turn lane on SE Airport Ln.	Aspirational-Long Term Ph4	\$350,000	State
D14	Extends the north-south alignment of 19th St. south to meet with Dolphin Rd. near Rainbows End Ln. - Extend 19th St. to create an alternative route to US 101. Implemented in coordination with Warrenton.	Financially Constrained-Short Term	\$4,600,000	County/Warrenton
D15	US 101/Fort Stevens Highway (OR 104) - Advance intersection warning signing on US 101.	Aspirational-Long Term Ph4	\$75,000	State
D16	US 101 / Fort Stevens Highway (OR 104) - Add eastbound right turn lane to Fort Stevens Highway (OR 104).	Aspirational-Long Term Ph4	\$450,000	State

05 THE INVESTMENTS



Table I Continued: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
D17	US 101 / Patriot Way - Install signs informing of possible convoys and/or congestion at Patriot Way. Signs could be free standing approximately 500 feet north and south of the intersection, or co-mounted on Camp Rilea guide signs. Optionally includes active flashing yellow lights controlled at Camp Rilea.	Aspirational-Long Term Ph4	\$75,000	State
D18	US 101 / Patriot Way - Create a two-stage left turn movement for traffic exiting Camp Rilea using a raised channelized turn median. This long-term solution is dependent on growth in highway traffic volumes and activity at Camp Rilea.	Aspirational-Long Term Ph4	\$200,000	State
D19	US 101/Turley Lane-Glenwood Village Rd. - Combine Turley Lane and Glenwood Village Lane into a single access to US 101. Add southbound left turn lane to US 101.	Financially Constrained-Short Term	Funded	State
D20	US 101/ Sunset Beach Rd. - Add J-turn on US 101 south of the intersection to facilitate movements from Sunset Beach Rd. to US 101 northbound.	Financially Constrained-Short Term	Funded	State
D21	Patriot Way to Sunset Beach Road - Widen to include a center median and standard shoulders.	Aspirational-Long Term Ph2	\$10,000,000	State
D22	US 101 at Cullaby Lake Curves - Improve the Cullaby Lake curves to address safety concerns.	Aspirational-Long Term Ph3	\$1,600,000	State
D23	US 101/ West Lake Road-Dellmoor Loop - Add left-turn lanes on US 101 and a second approach lane on West Lake Road and Dellmoor Loop.	Aspirational-Long Term Ph3	\$1,000,000	State
D24	US 101/ Surf Pines Lane - Add a southbound right-turn lane on US 101.	Aspirational-Long Term Ph3	\$100,000	State
D25	Lewis and Clark Rd. / Fort Clatsop Rd. and Lewis and Clark Rd. / Logan Rd. - Replace yield signs on the approaches from the bridge with stop signs.	Aspirational-Long Term Ph4	\$5,000	County
D26	Lewis and Clark Rd. / Logan Rd. - Improve sight distances at the intersection by modifying the alignment of Lewis and Clark Rd. to meet Logan Rd. further to the east. Low-impact project should work within environmental constraints.	Aspirational-Long Term Ph4	\$1,950,000	County
D27	Lewis and Clark Rd. at curves near Crown Camp Rd. intersection. - Add enhanced sign and marking improvements on curves.	Aspirational-Long Term Ph4	\$5,000	County
D28	Lewis and Clark Rd. / N. Wahanna Rd. / Crown Camp Rd. - Realign to "T" the intersection of Wahanna Rd. and Lewis and Clark Rd. Add stop control to all three legs of the intersection. Design to accommodate logging and other large trucks that regularly make the left from Lewis and Clark Rd. to N Wahanna Rd.	Aspirational-Long Term Ph2	\$800,000	County
D29	Extend Wahanna Rd. to Beerman Creek Rd. - Provides alternative route to US 101 for residents. Implemented in coordination with Seaside. The connection to Beerman Creek Road should be east of the bridge.	Aspirational-Long Term Ph2	\$4,750,000	County/Seaside
D30	US 101, south of Seaside (MP 22.6 to 23.17) - Partially reconstruct US 101 to eliminate the uneven pavement conditions. The lanes and shoulders will also be widened, and stormwater treatment installed.	Aspirational-Long Term Ph2	\$4,000,000	State
D31	US 101 Southbound at US 26 Eastbound - Extend the turn lane to US 26 from southbound US 101.	Aspirational-Long Term Ph2	\$550,000	State

Table I Continued: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
D32	US 101 from the south end of Cannon Beach to the north end of Arch Cape. - Add rumble strips to highway shoulders and to centerline in do-not-pass zones. Avoid installing adjacent to residential areas and include gaps for bicyclist use.	Aspirational-Long Term Ph4	\$65,000	State
D33	US 26, between M.P. 5.0 and 6.0 - Construct passing lanes.	Aspirational-Long Term Ph4	\$10,650,000	State
D34	OR 53/Hamlet Rd. - Stripe the Hamlet Rd. intersection approach.	Aspirational-Long Term Ph4	\$5,000	County
D35	US 26 throughout the County, as the opportunity arises - Add rumble strips to highway shoulders and to centerline in do-not-pass zones. Avoid installing adjacent to residential areas and include gaps for bicyclist use.	Aspirational-Long Term Ph4	\$200,000	State
D36	US 26 westbound, between M.P. 20.4 and 21.6 - Construct climbing lane.	Aspirational-	\$9,500,000	State
D37	US 26 / Christmas Tree Rd., just east of OR 103 - Consolidate access points at highway adjacent businesses and add a left turn lane for access from US 26.	Aspirational-Long Term Ph4	\$500,000	State
D38	OR 103, between US 26 and M.P. 3.00 - Add rumble strips to highway shoulders and to centerline in do-not-pass zones. Avoid installing adjacent to residential areas and include gaps for bicyclist use. Improve and stripe shoulders as necessary for rumble strip installation.	Aspirational-Long Term Ph4	\$150,000	State
T01	Near the planned County park adjacent to the ferry landing, at the former GP industrial site. - New transit stop in Westport as detailed in the Westport Corridor and Community Plan.	Aspirational-Long Term Ph4	\$20,000	SETD
T02	Arch Cape - exact location to be determined in consultation with SETD. - New transit stop including amenities such as route and schedule information, seating, shelters with concrete landing pads, and trash cans.	Aspirational-Long Term Ph2	\$20,000	SETD
T03	Transit stops throughout the county. - Improve transit stops with amenities such as route and schedule information, seating, shelters with concrete landing pads, and trash cans. Priority locations should be developed in consultation with SETD considering locations with high demonstrated or potential ridership, near major destinations, and at transfer and NW Connector locations.	Aspirational-Long Term Ph3	\$50,000	SETD
T04	US 101 and US 30 - Coordinate with Sunset Empire Transit District to reduce transit headways. Consider establishing a frequent service line designation, if appropriate.	Aspirational-Long Term Ph4	\$10,000	SETD
T05	US 101 and US 30 - Coordinate with Sunset Empire Transit District to extend transit service hours. Match transit hours with Clatsop Community College hours, where possible.	Aspirational-Long Term Ph4	\$10,000	SETD
T06	Transit Stops throughout the county - Together with SETD, implement an automatic vehicle location (AVL) system that provides real-time transit arrival times to riders. Provide this information to customers at transit stops.	Aspirational-Long Term Ph4	\$25,000	SETD
W01	US 30, between Old US 30 and Old Mill Town Rd. - Construct sidewalks and landscaping, add bike facilities. Implement parking management and speed reduction measures.	Aspirational-Long Term Ph2	\$1,050,000	State
W02	OR 202 between Astoria UGB and Clatsop County Fairgrounds - Add shared-use path following road alignment.	Aspirational-Long Term Ph4	\$2,300,000	State/County

05 THE INVESTMENTS



Table I Continued: Financially Constrained and Aspirational Project List

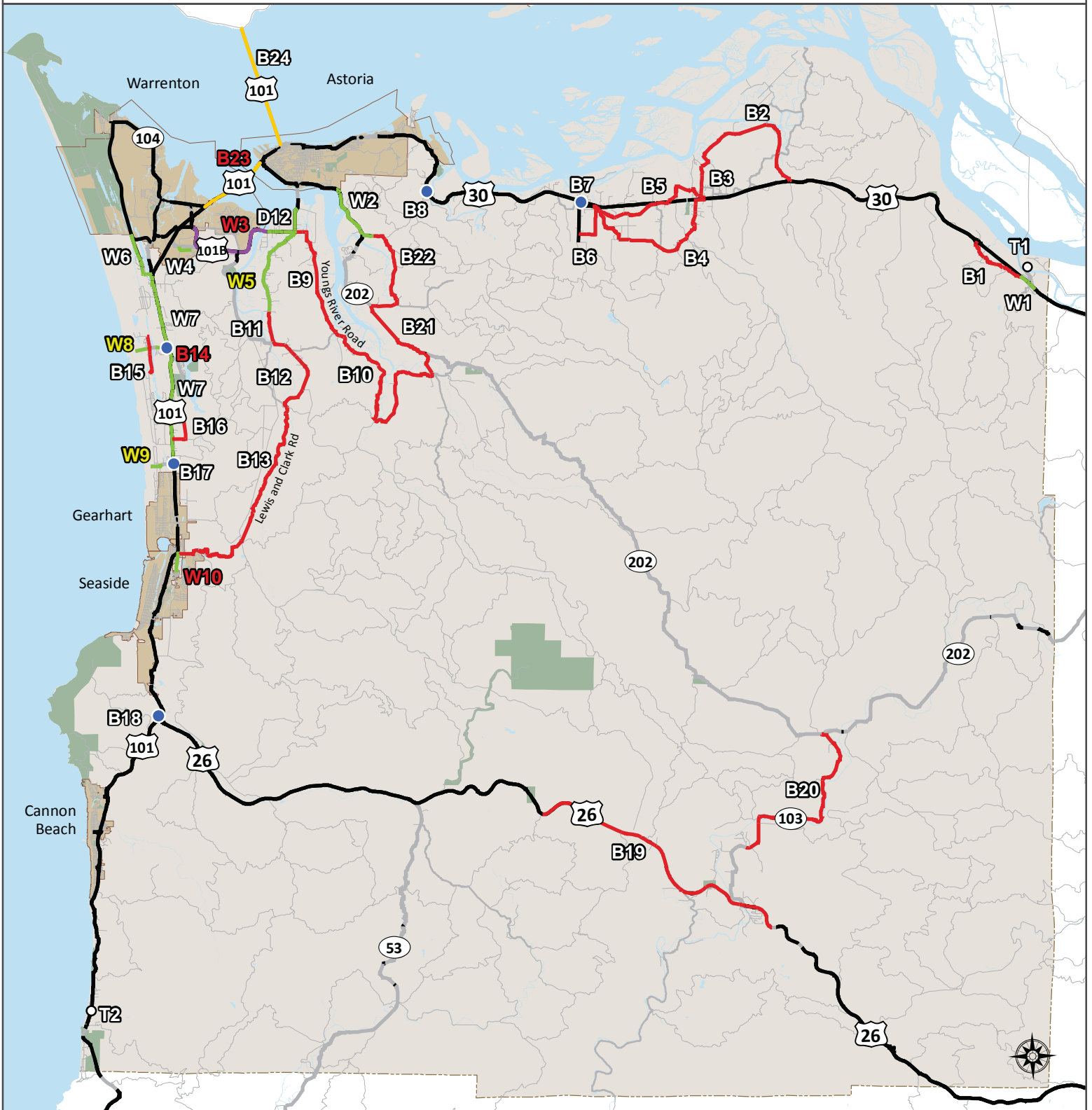
Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
W03	Warrenton to Miles Crossing. - Study for an off-highway shared-use path. Study will determine potential alignments, width, security, wayfinding details, construction materials, costs, and funding sources.	Financially Constrained-Short Term	\$150,000	County
W04	SE 19th St from SE Ensign Ln to Animal Shelter Near SE Willow Dr. - Extends shared-use path to connect with SE Ensign Ln. The animal shelter is a popular destination to walk to that is just off the pedestrian network.	Aspirational-Long Term Ph2	\$1,250,000	County/Warrenton
W05	Lewis and Clark Rd. between Warrenton-Astoria Hwy. (US 101B) and Kee Ln. - Add shared-use path following road alignment.	Financially Constrained-Medium Term	\$2,750,000	County
W06	Ridge Rd. between Delaura Beach Ln. and the Fort to Sea Trail - Add an additional three feet of gravel pathway along the west shoulder. Add a pedestrian pathway following the right-of-way of Columbia Beach Lane, Highway 104 and US 101, connecting to the Fort to Sea Trail just south of Camp Rilea.	Aspirational-Long Term Ph3	\$2,500,000	County
W07	Patriot Way to Surf Pines Road - Widen narrow shoulders along the corridor.	Aspirational-Long Term Ph2	\$3,000,000	State
W08	Sunset Beach Rd. between US 101 and the coast - Pedestrian improvements following road alignment.	Financially Constrained-Short Term	\$3,350,000	County
W09	Highland Ln., along entire county facility between US 101 and the coast. - Pedestrian improvements following road alignment.	Financially Constrained-Medium Term	\$700,000	County
W10	Wahanna Rd. from Lewis and Clark Rd. south to the end of county facility. - Change road cross section to include a multi-modal path on the west side and two 10 ft. travel lanes, as detailed in the Seaside TSP.	Financially Constrained-Medium Term	\$2,250,000	State/County/Seaside
X01	Arch Cape, Miles Crossing-Jeffers Garden, Knappa-Svensen, and Westport - Review and identify strategies for managing speed and other safety issues in the Arch Cape, Miles Crossing-Jeffers Garden, Knappa-Svensen, and Westport communities.	Financially Constrained-Short Term	\$200,000	County
X02	Between Knappa and Westport - Feasibility study to restore rail service to Tongue Point, including track improvements.	Aspirational-Long Term Ph4	\$100,000	State
X03	Countywide - Study to determine seismic stability of all county bridges. This study prepares the county to pursue funding for bridge improvements.	Financially Constrained-Short Term	\$100,000	County
X04	Countywide - Develop an evacuation route facilities plan to identify and address evacuation route planning and development needs during and after a seismic or tsunami event. This planning effort will identify additional needed evacuation routes, identify system standards, identify needed improvements to the evacuation system, and develop the policies necessary to implement the plan.	Financially Constrained-Short Term	\$150,000	County

Table I Continued: Financially Constrained and Aspirational Project List

Project #	Project Description	Project Priority	Estimated Cost	Primary Funding Source*
X05	Countywide - Maintain shoulders and other walking and biking infrastructure in the County, including purchasing new street sweepers equipment.	Aspirational-Long Term Ph3	\$300,000	County
X06	US 101 south of Seaside near Circle Creek Campground (MP 23.16) - Phase 2 of a project to alleviate flooding on US 101 by removing man-made berms in strategic locations to allow floodwater to flow into lower-lying areas. This will also help restore a wetland on adjacent property. Phase 1 was initiated in 2013. Phase 2 includes constructing a new berm on the west side of US 101 (flooding occurs from west to east).	Aspirational-Long Term Ph2	\$1,000,000	State

* Primary funding source is based on the agency who has jurisdiction over an existing facility, or who is expected to construct a new facility.

Figure 8 - Planned Walking, Biking, and Transit Investments














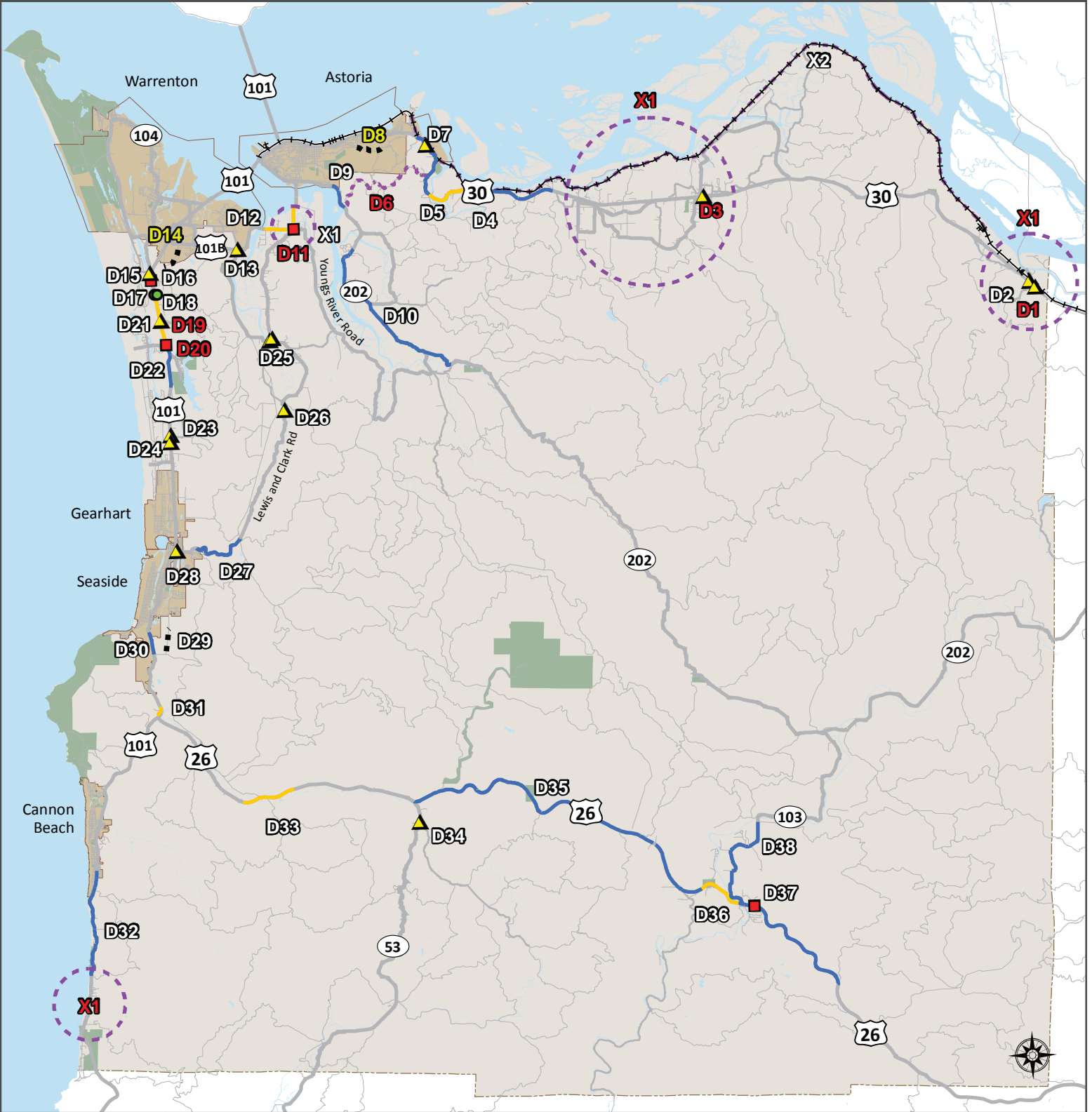










Legend		<u>Walking, and Biking Projects</u>		A1 Project included in Aspirational Plan
	Transit Project		Proposed Bridge Safety Enhancement	A1 Entire Project included in Financially Constrained Plan
	Bicycle Intersection Project		Proposed Shoulder Widening	A1 Project Pre-Design included in Financially Constrained Plan
	Existing Shoulder or Bike Lane		Proposed Pedestrian and Bicycle Improvements	 City
	Road with Shoulder < 4'		Proposed Planning Study	 Park
				 Clatsop County

Figure 9 - Planned Driving Investments



Legend	Roadway Projects	Intersection Projects	A1 Project included in Aspirational Plan
	 Roadway Safety Improvements	 Intersection Management Project	A1 Entire Project included in Financially Constrained Plan
	 Roadway Widening	 Intersection Safety Project	A1 Project Pre-Design included in Financially Constrained Plan
	 Street Extension	 Intersection Capacity Project	
	 Planning Study		 City
			 Park
			 Clatsop County

In order to implement the transportation system vision and associated investments, the county must adopt appropriate policies, standards, and regulations. This section presents the elements of the county’s Comprehensive Plan and Development Code that will help guide investment priorities and ensure that future development or redevelopment of property is consistent and supportive of the county’s overall development goals and objectives. (See Volume 2, Section N for implementing regulations and policy amendments.) These elements are functional classification, street design, spacing standards, traffic calming, mobility targets, traffic impact analysis, freight routes, evacuation routes, transportation system management, shared-use paths, and street crossings. (See Volume 2, Section J for more information on the transportation standards.)

Functional Classification

Traditionally, roadways are classified based on the type of vehicular travel they are intended to serve (local versus through traffic). In Clatsop County, the functional classification of a roadway (shown in Figure 10) determines the level of mobility for all travel modes, level of access, and use. The street functional classification system recognizes that individual streets do not act independently but instead form a network that serves travel needs on a local and regional level. From highest to lowest intended use, the classifications are principal arterial, minor arterial, major collector, minor collector, and local streets. Roadways with a higher intended use generally provide more efficient motor vehicle traffic movement (or mobility) through the county, while roadways with lower intended use (local streets) provide greater access for shorter trips to local destinations.

- **Principal Arterials** are state roadways. These roadways serve the highest volume of motor vehicle traffic and are primarily used for longer distance regional trips.





- **Minor Arterials** are intended to move traffic between principal arterials and major collector roadways. These roadways generally experience higher traffic volumes and often act as a corridor connecting many parts of the county.
- **Major Collectors** are intended to serve local traffic traveling to and from principal arterial or minor arterial roadways. These roadways provide greater accessibility to neighborhoods, often connecting to major activity generators and providing efficient through movement for local traffic.
- **Minor Collectors** often connect the neighborhoods to the major collector roadways. These roadways serve as major neighborhood routes and generally provide more direct access to properties or driveways than arterial or major collector roadways.
- **Locals** provide more direct access to residences. These roadways are often lined with homes and are designed to serve lower volumes of traffic.

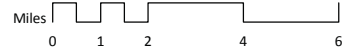
The Federal government also has a functional classification system that is used to determine Federal Aid funding eligibility. See Volume 2, Section Q for the Federal functional classifications in the county.

Street Design






The typical design of streets in Clatsop County can be seen in Figures 11a to 11e. Overall, the TSP includes four standard design types for streets and a design for Minor Arterial or Major Collector streets along local resource routes (see Figure 10). Resource routes are streets under county jurisdiction that facilitate the movement of local resources. These streets require 12-foot travel lanes and five-foot shoulders with two-foot buffers. Note that the TSP does not include design types for principal arterials because they are state highways and therefore subject to the design criteria in the state's Highway Design Manual.

Any street located in a steep, environmentally sensitive, rural, historic, or developed area of the county may be considered a constrained street. Streets in constrained areas may need to reduce or eliminate lower priority elements of the street. A constrained design should require a variance or exception to the county's standard design prior to construction approval.

Figure 10 - Street System



Legend

County Functional Classification	
	Principal Arterial
	Minor Arterial
	Major Collector
	Minor Collector
	Resource Route

	City
	Park
	Clatsop County

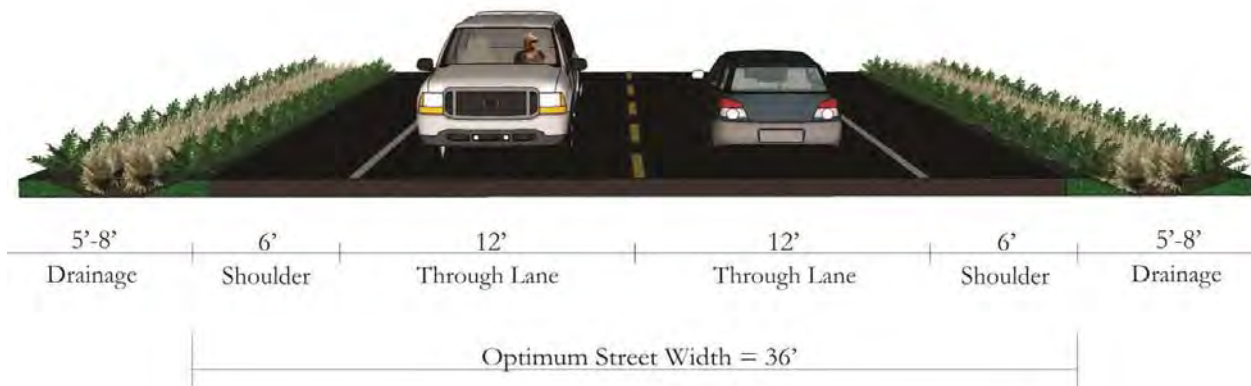


Figure I Ia: Minor Arterial Street

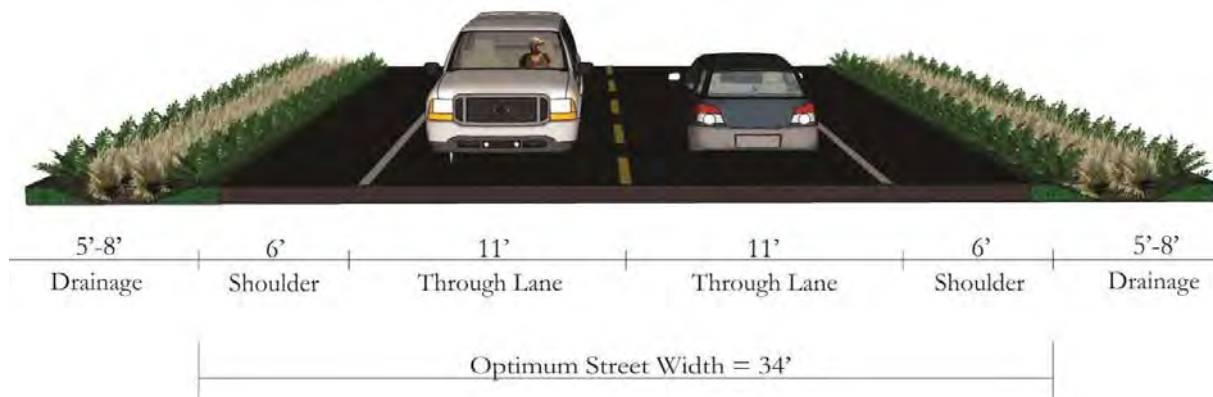


Figure I Ib: Major Collector Street

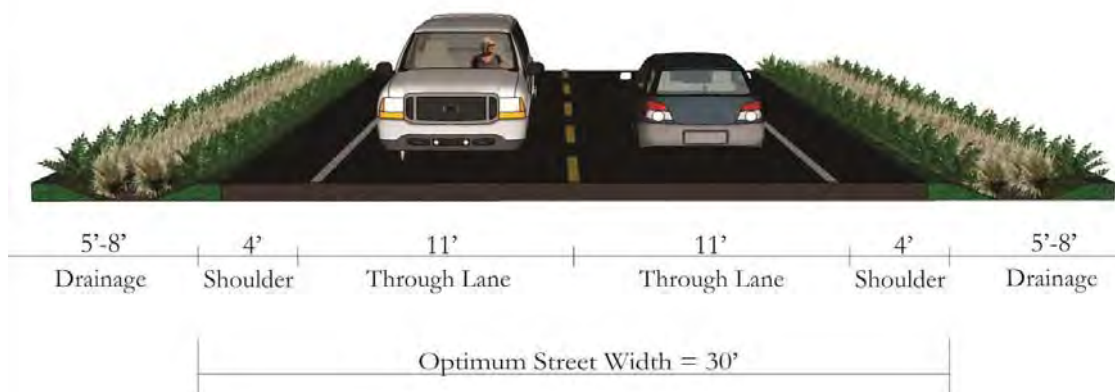


Figure I Ic: Minor Collector Street

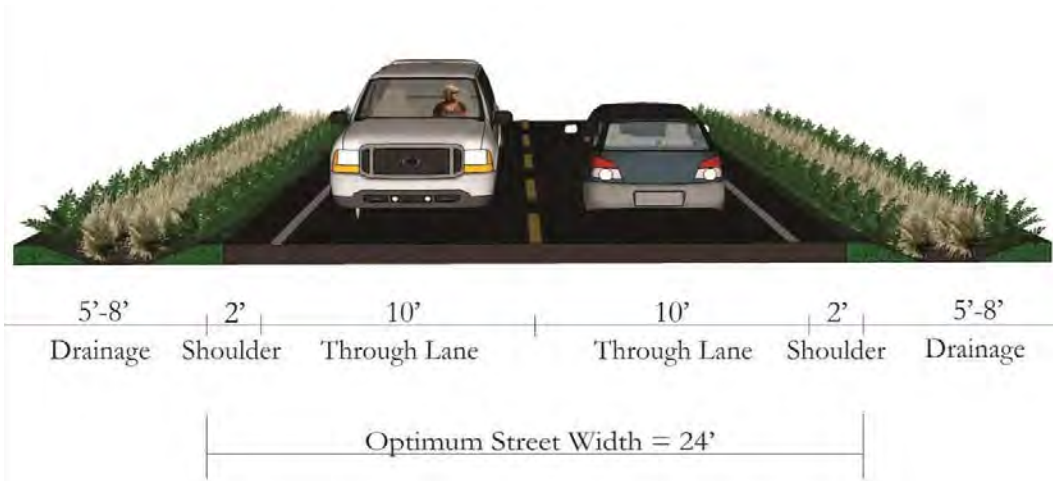


Figure 11d: Local Street

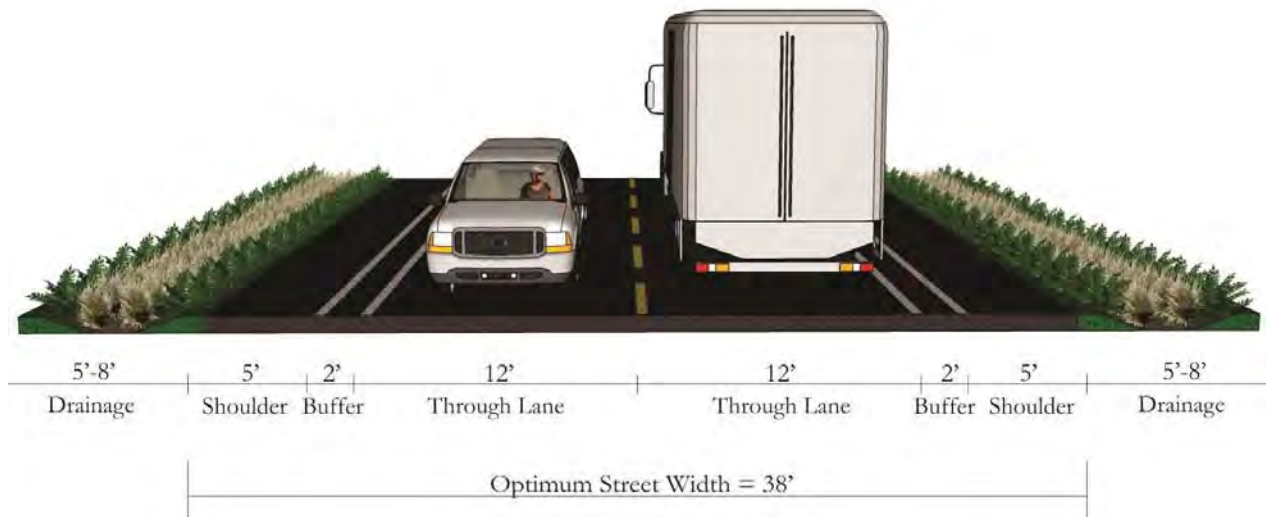


Figure 11e: Resource Route on Minor Arterial or Major Collector

Spacing Standards

Access management is a broad set of techniques that balances efficient, safe, and timely travel with the individual’s access to specific destinations. Proper access management standards and techniques reduce congestion and accident rates and may also lessen the need for additional roadway capacity.

Table 2 identifies the minimum private access spacing standards for streets in Clatsop County. New streets or redeveloping properties must comply with these standards to the extent practical (as determined by the county). As the opportunity arises through redevelopment, streets that do not comply with these standards could be improved with strategies such as shared access points, access restrictions (through the use of a median or channelization islands), or closed access points, as feasible.

Table 2: Spacing Standards

	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local Street
Minimum Driveway Spacing (Public Street to Driveway and Driveway to Driveway)	See Oregon Highway Plan	265 ft.	130 ft.	65 ft.	None

Traffic Calming

Traffic calming refers to street design techniques that slow traffic and make streets (primarily in residential and mixed-use areas) safer and more pleasant for users and adjoining land uses without significantly changing vehicle capacity.

See Volume 2, Section J for a list of common traffic calming applications and a suggestion to which devices may be appropriate for streets in the county. Traffic calming measures must balance vehicle speeds and volumes with mobility, circulation, and function. Any traffic calming project should include coordination with emergency service providers to ensure the project does not impede response.

Traffic calming influences driver behavior through physical and psychological means, by using one or more of the following:

- Narrowing the street by providing curb extensions or bulbouts, or mid-block pedestrian refuge islands
- Deflecting the vehicle path vertically by installing speed humps, speed tables, or raised intersections
- Deflecting the vehicle path horizontally with chicanes, roundabouts, and mini-roundabouts
- Providing visual cues such as placing buildings, street trees, on-street parking, and landscaping next to the street to create a sense of enclosure that prompts drivers to reduce vehicle speeds



Mobility Targets

Establishing mobility targets for roads and intersections in Clatsop County will encourage a sustainable transportation system (consistent with the TSP Goal 6) by providing a metric to assess the impacts of new development on the existing transportation system.

The following mobility targets should be applied to streets under the county’s jurisdiction. State-owned roads must comply with the mobility targets presented in the Oregon Highway Plan. City-owned streets must comply with the mobility targets in local TSPs.

- Signalized, all-way stop, or roundabout controlled intersections:** During the highest one-hour period on an average weekday (typically, but not always the evening peak period between 4 p.m. and 6 p.m. during the spring or fall): The intersection as a whole must meet Level of Service (LOS) “E” or better and a volume to capacity (v/c) ratio not higher than 0.85.
- Two-way stop and yield controlled intersections:** During the highest one-hour period on an average weekday (typically, but not always the evening peak period between 4 p.m. and 6 p.m. during the spring or fall): All movements serving more than 20 vehicles shall be maintained at LOS “E” or better and a v/c ratio not higher than 0.90. LOS “F” is acceptable at movements serving no more than 20 vehicles during the peak hour.

State-owned streets must comply with the mobility targets included in the Oregon Highway Plan. The need for alternative mobility targets along state highways in Clatsop County was evaluated as part of the TSP, and were determined to not be necessary, outside of Warrenton, at this time. Reasonable improvements recommended in the TSP would be expected to allow current OHP mobility targets to be met. Alternative mobility targets may still be necessary along the US 101 corridor through Warrenton, however that decision will be deferred to the city’s TSP update. (See Volume 2, Section M for more information.)



Traffic Impact Analysis

The county or other road authority with jurisdiction may require a Traffic Impact Analysis (TIA) as part of an application for development, a change in use, or a change in access. Based on information provided by the applicant about the proposed development, the county will determine when a TIA is required and will consider the following when making that determination:

- Changes in zoning or a plan amendment designation
- Changes in use or intensity of use
- The road authority indicates in writing that the proposal may have operational or safety concerns along its facilities
- An increase in site traffic volume generation by 400 Average Daily Trips (ADT) or more
- Potential impact to residential or mixed-use areas
- Potential impacts to key walking and biking routes, including, but not limited to, school routes and multi-modal street improvements identified in the TSP
- Location of existing or proposed driveways or access connections
- An increase in peak hour volume of a particular movement to and from a street or highway by 20 percent or more
- An increase in use of adjacent streets by vehicles exceeding 20,000-pound gross weights by 10 vehicles or more per day
- Potential degradation of intersection level of service (LOS)
- The location of an existing or proposed approach or access connection does not meet minimum spacing or sight distance requirements or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, creating a safety hazard
- A change in internal traffic patterns may cause safety concerns
- A TIA is required by ODOT pursuant with OAR 734-051

It is the responsibility of the applicant to provide enough detailed information for the County Engineer (for existing plats) or for the Community Development Director (for proposed land divisions) to make a TIA determination.



Freight Routes

Freight routes were designated to ensure trucks can efficiently travel through and access major destinations in the Clatsop County. These routes play a vital role in the economical movement of raw materials and finished products, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. ODOT has classified US 26 and US 30 as freight routes through Clatsop County. Although US 101 is not classified by ODOT as a freight route, it is designated as a truck route by the federal government. The Clatsop County freight routes are shown in Figure 12.

Resource routes were also designated by the county to facilitate the movement of local resources. While not considered freight routes, these roadways serve an important role in facilitating resource truck circulation on the county roadway network and should be designed to safely accommodate them (see page 32).

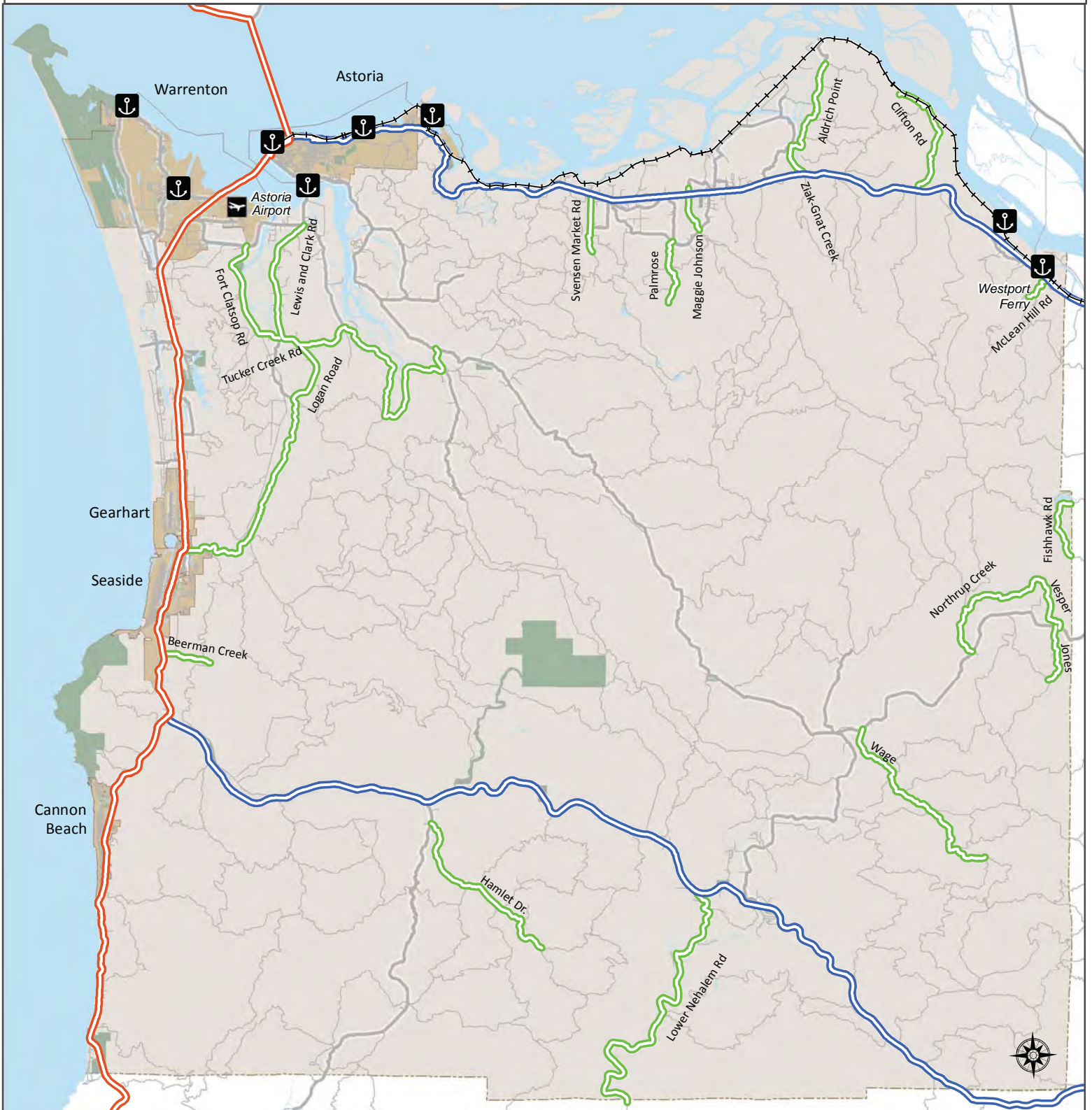
Evacuation Routes

The Oregon Highway Plan (OHP) Goal 1, Policy 1E designates routes for emergency response in the event of an earthquake, categorized as Tier 1, 2, and 3. The routes identified as Tier 1 are considered to be the most significant and necessary to ensure a functioning statewide transportation network. A functioning Tier 1 lifeline system supports traffic flow through the state and to each region. The routes in the Tier 2 lifeline system add connectivity and redundancy to Tier 1. The Tier 2 system allows for direct access to more locations and increased traffic volume capacity and provides alternate routes in high-population regions in the event of outages on the Tier 1 lifeline system. The routes in the Tier 3 lifeline system provide additional connectivity and redundancy to the routes in the Tiers 1 and 2 lifeline systems.




Lifeline routes in Clatsop County are shown in Figure 13, along with the tsunami inundation zones and bridges. US 30 is the only Tier 1 route in Clatsop County. US 26 and US 101, south of US 26, are classified as Tier 2 routes. US 101, north of US 26, is classified as a Tier 3 route.






Figure 12 - Truck Routes



Legend *Freight Routes*

-  ODOT Freight Route and Federal Truck Route
-  Federal Truck Route
-  County Resource Route

-  Harbor
-  Astoria Airport
-  Railroad





-  City
-  Park
-  Clatsop County
-  Stream

Figure 13 - Emergency Response



Tsunami Evacuation Routes

The Oregon Department of Geology and Mineral Industries prepared tsunami evacuation plans for several developed coastal communities including Arch Cape, Astoria, Cannon Beach, Seaside and Gearhart, Sunset Beach and Del Rey Beach, Warrenton, and Youngs River Valley. These plans identify evacuation routes, evacuations sites, shelters, and evacuation areas. Evacuation signs have been installed along roadways to indicate the direction inland or to higher ground. (See Volume 2, Section J for more information.)

Transportation System Management

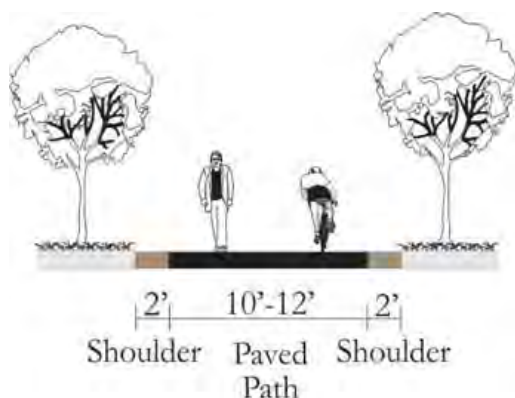
Clatsop County has several regional roadway facilities that serve the county (US 26, US 101, US 101B, US 30, OR 202, OR 103, OR 104, OR 104S, and OR 53) that could benefit from transportation system management infrastructure. Before future investments are made along these roadways, designs should be reviewed with county and ODOT staff to determine if communications or other intelligent transportation system infrastructure should be addressed as part of the street design/construction.



Shared-Use Paths

Shared-use paths provide off-roadway facilities for walking and biking. Depending on location, they can serve both recreational and general travel needs. Shared-use path designs vary in surface types and widths. Harder surfaces are generally better for bicycle travel. Widths should provide ample space for both walking and biking and should also be able to accommodate maintenance vehicles. The typical cross-section for shared-use paths is shown in Figure 14. The county may reduce the width of the paved shared-use path to a minimum of eight feet in constrained areas located in steep, environmentally sensitive, rural, historic, or developed areas of the county. In areas with significant demand for walking or biking, the paved shared-use path should be 12 feet wide; otherwise it should be 10 feet wide.

Figure 14: Typical Cross-Section for Shared-Use Paths



In addition, a variety of amenities can make a path inviting to the user. These could include features such as interpretive signs, water fountains, benches, lighting, maps, art, and shelters.

Street Crossings

Roadways with high traffic volumes and/or speeds in areas with transit stops, residential uses, schools, parks, shopping and employment destinations may require enhanced street crossings. These crossings include treatments such as marked crosswalks, high visibility markings, and curb extensions to improve the safety and convenience of street crossings.

Blocks longer than 500 feet in urban and rural communities should have mid-block pedestrian crossings and bicycle access ways at spacing no more than 330 feet. Exceptions include where the crossing or connection is impractical due to inadequate sight distance, high vehicle travel speeds, or other factors (as determined by the county).

How will the financially constrained investment recommendations in the TSP improve the performance of the transportation network in Clatsop County? Certainly not as much as if the full range of needs identified could be implemented. Nonetheless, even the modest improvements identified in the constrained funding plan will have a positive impact on the county over the next 20 years.



The Improved Transportation System

After reviewing the expected growth throughout the county, existing gaps and deficiencies of the transportation system, and the funding constraints currently forecast through 2035, the following improvements and trends are expected:

- **Greater resilience:** Planning studies to identify and address multi-modal infrastructure needs during and after a seismic event prepare the county to provide resilient routes and connections, while pursuing funding for larger infrastructure improvements.
- **Safer Streets:** By adding turns lanes, providing rumble strips, and improving intersection geometrics and traffic control, the road network in Clatsop County will be safer for everyone.
- **Increased congestion on state highways:** Although not failing completely, by 2035 traffic volumes and congestion will be higher than they are now. During summer months, congestion will be worse than currently experienced, but mobility targets can still be met outside of urban growth boundaries. That said, strategic improvements will make the highways safer and more accommodating for everyone using them.



To the Planning Horizon and Beyond

In addition to the improvements identified in the 2015 Clatsop County TSP, other issues will need to be explored through 2035 and beyond.

Potential Additional Funding Sources

Based on the identified funding gap, the county may wish to consider expanding its funding options in order to fund more of the desired improvements in a more timely manner.

New transportation funding options include local taxes, assessments and charges, and state and federal appropriations, grants, and loans. Factors that constrain these resources include: the willingness of local leadership and the electorate to burden citizens and businesses with taxes and fees; the portion of available local funds dedicated or diverted to transportation issues from other competing county programs; and the availability of state and federal funds. The county must consider all opportunities for enhancing funding for the transportation improvements included in the TSP.

Other counties and cities have used the following funding sources for capital improvements and maintenance. (See Volume 2, Section I for more information.)

- Local Fuel Tax
- System Development Charges and/or Traffic Impact Fees
- ODOT Statewide Transportation Improvement Program (STIP) Enhance Funding
- ODOT Highway Safety Improvement Program (HSIP) Funding
- Local Improvement Districts
- Fee in Lieu of Improvements
- Debt Financing



Conceptual Alignments

All proposed street extensions and shared-use paths included in this TSP are shown with conceptual alignments. These are a planning-level concepts that illustrate that connectivity enhancements are needed in these areas. Before construction of any of these projects can begin, more detailed surveys will need to be undertaken to identify hydrologic, topographic, and geological constraints that could affect the alignment of the planned improvements. Final alignments will be identified after completion of these surveys. All projects located on state facilities will require ODOT approval and will be subject to the design criteria in the state’s Highway Design Manual.



Projects Funded for Pre-Design

These projects are funded for pre-design in the fiscally constrained investment strategy. Completing the project pre-design prepares the county to take advantage of and pursue additional funding sources for construction, and it provides a platform to envision and gather support for needed improvements. Projects funded for pre-design include:

- D8: Irving Avenue Extension
- D14: 19th Street Extension
- W5: Lewis and Clark Road Shared-Use Path
- W8: Sunset Beach Road Improvements
- W9: Highland Lane Improvements

Jurisdictional Transfers

The Oregon Highway Plan, Policy 2C, sets forth ODOT’s policies for transferring roadway ownership from ODOT to a local government and vice versa. The policy recognizes the need to “rationalize and simplify management responsibilities” and to “increase efficiency in operation and maintenance” of roadway segments and corridors. The process for transferring jurisdiction is described in ODOT



procedural memo ROW 10-01-01.

ODOT, Clatsop County, and the City of Warrenton have discussed the possibility of transferring several roadway segments in the Warrenton area at some point in the future. Clatsop County has also identified other roadways in the county that may also be candidates for jurisdictional transfer.

Roadways being considered for jurisdictional transfer:

- **Ensign Lane, east of US 101 to US 101B** – Transfer from County to ODOT in exchange for County or Warrenton accepting segments of OR 104S and US 101B between US 101 and Ensign Lane.
- **OR 104 between downtown Warrenton and Hammond** – Transfer from ODOT to the County or, preferably, to Warrenton.
- **OR 104 between downtown Warrenton and US 101** – Transfer from ODOT to Warrenton.
- **OR 104S between US 101 and OR 104** – Transfer from ODOT to Warrenton.
- **Ensign Lane west of US 101 to OR 104S** – Transfer from County to Warrenton.
- **Other segments of OR 104 west of US 101 (Marlin and Harbor)** – Transfer from ODOT to Warrenton.
- **Ridge Road** – Transfer from County to Warrenton.

Jurisdictional transfer is a complex process involving extensive negotiations among parties. One jurisdiction cannot force another to accept ownership of a facility. The receiving jurisdiction usually needs a motive or incentive to participate. Sometimes the jurisdiction desires more flexibility in applying its own design and development regulations governing access, sidewalks and drainage, landscaping, etc. The jurisdiction transferring the facility is often required to upgrade the facility first or provide funding for the receiving jurisdiction to upgrade and maintain the facilities. Because of these and other complexities, it is not a certainty if or when the transfers listed above will occur.