

# 2017 Gearhart Transportation System Plan: Volume I



August 2017

# **Gearhart**

## **Transportation System Plan**

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**Prepared for:**

City of Gearhart

Oregon Department of Transportation

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# Acknowledgements

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# Acknowledgements

## Project Advisory Committee

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- Carl Anderson, Gearhart Planning Commission
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- Paulina Cockrum, Gearhart City Council
- Virginia Dideum, Gearhart Planning Commission
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The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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## The Outcome

# Figures and Tables

The contents of Volume 2 represent an iterative process in the development of the TSP. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

- Glossary ..... Section A**
- Memo 1: Plan Review ..... Section B**
- Memo 2: Funding for Transportation System Improvements ..... Section C**
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- Traffic Impact Analysis Guidelines ..... Section K**

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# The Context

Stretching along the Pacific Ocean, Gearhart is a quaint beach town. While the population of permanent residents in the city is close to 1,500 residents<sup>1</sup>, summer populations can rise to nearly 3,500. Visitors are drawn to the city's two-mile beachfront, golfing, and more. Visitors arrive via US 101 and often stay for extended periods, traveling to popular destinations throughout the city. Walking and biking is a popular travel choice for visitors in hotels or vacation rentals to the destinations in the city.

The major transportation route through Gearhart, US 101, runs north to south bisecting the city (see Figure 1). Gearhart roadways are fairly well connected and generally follow a grid pattern on the west of US 101. The Neawanna Creek, Gearhart Golf Links, Neacoxie Creek, and wetlands, however, limit continuous north to south routes parallel to US 101. At several locations, US 101 is the only north-south street, forcing most drivers to use it for longer trips within the city.

A few key city roadways that provide north-south access are Marion Avenue, Cottage Avenue, and McCormick Gardens Road. Marion Avenue and Cottage Avenue parallel Gearhart Golf Links on the west side of US 101, and McCormick Gardens Road provides a connection on the east side of US 101. Key east-west city roadways include Gearhart Loop Road towards the north end of the city, Pacific Way centered in the middle, and F Street, and G Street in the south end of the city.



**Figure 1: Planning Boundary for Gearhart**

<sup>1</sup> Portland State University Population Research Center. Certified Population Estimate July 1, 2015.

# The Context

## The Challenge

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Gearhart, along with many other agencies throughout Oregon, face the challenge of addressing transportation infrastructure needs with escalating maintenance costs and very little funding. The transportation system must accommodate highway through traffic, residents, and thousands of tourists who are here in the summer and over holiday weekends. The city must balance its investments to ensure that it can develop and maintain the transportation system adequately to serve the city and everyone who travels in it. To address this challenge, the city has developed this Transportation System Plan (TSP).

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

As part of the outreach to engage citizens and stakeholders in the TSP project, the city made special efforts to involve seniors, minority and low income groups.

According to the 2010 Census, nearly 95 percent of the population of Gearhart is White and four percent of the population is of Hispanic or Latino origin.

Written materials and translation service were available in Spanish upon request. To assist those that cannot drive, and help engage senior citizens, public meetings were held at locations accessible via transit, walking or biking when feasible. Materials on the project website were downloadable; hard copies of project documents were available upon request for those without internet access. Project advertisements were posted in locations where all citizens were likely to see them.

## The Transportation System Plan

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The TSP prepares Gearhart for accommodating traffic within the city in the best manner possible through 2040. The TSP's big picture view allows it to guide the city in developing and



# The Context

maintaining acceptable transportation network performance more efficiently than a piecemeal or unorganized approach.

As the transportation element of the city's Comprehensive Plan, the TSP embodies the community's vision for an efficient, safe, and diverse transportation system. The TSP attempts to balance the needs of walking, bicycling, driving, transit and freight with strategies and projects that are important for protecting and enhancing the quality of life in Gearhart through the next 20 years. The TSP is a collection of current inventory, forecasts, past and current project ideas, decisions, and standards housed in a single document. The city, Clatsop County, private developers, and state (e.g., Oregon Department of Transportation) or federal agencies all have a role in implementing elements of the TSP.

By setting priorities for available and anticipated funds in the 20-year planning period, the TSP provides a foundation for budgeting, grant writing, and requiring public improvements of private development. It also identifies and advocates for the projects and services that the city would like to implement, but cannot reasonably expect to fund during the next 20 years.

This plan is intended to serve areas within the Gearhart urban growth boundary. Other nearby cities, including Seaside, have their own TSPs. Areas outside of the urban growth boundary are served by the Clatsop County TSP.

The State of Oregon requires a TSP to integrate the County's transportation investment plans (including projects along State highways) into the statewide transportation system. The Oregon Department of Transportation (ODOT) typically relies on local agencies to identify needed investments along State highways within their planning area. This plan identifies needed investments along US 101 in Gearhart.



# The Process

The Gearhart TSP is the result of a collaboration among various public agencies, key stakeholders, the community, and the project team of city staff, ODOT, and consultants. Throughout this process, the project team took time to understand multiple points of view, obtain fresh ideas, and encourage broad participation, as it collected and analyzed data and possible solutions. The project timeline and key meetings are illustrated in Figure 2.



The Project Advisory Committee (PAC), comprised of local residents, business representatives, and agency technical staff, reviewed and commented on each memorandum and met with the project team at key stages during the project. This group helped the project team find agreement on project issues and alternatives. The project team met with the PAC five times, and held two work sessions with the Planning Commission and City Council (For a summary of the meetings, see Volume 2, Section J). The team held two public events at key stages, and interviewed nine local stakeholders to give residents an opportunity to learn more about the project and express their thoughts on how to improve the transportation system (For a summary of the stakeholder interviews, see Volume 2, Section I).

| Transportation Conditions  | Transportation Solutions   | Draft TSP  | Final TSP   |
|--|--|--|---|
| Review the transportation system to identify current conditions and problems, and determine future needs through 2040.                   | Identify and evaluate solutions and projects for the identified needs of the transportation system through 2040. | Incorporate the solutions and projects that best meet the identified needs into a Draft TSP. | Adopt Final TSP.  |
| <ul style="list-style-type: none"> <li>• PAC Meeting #1 &amp; #2</li> <li>• Public Event #1</li> <li>• Stakeholder Interviews</li> </ul> | <ul style="list-style-type: none"> <li>• PAC Meeting #3 &amp; #4</li> <li>• Public Event #2</li> </ul>           | <ul style="list-style-type: none"> <li>• PAC Meeting #5</li> </ul>                           | <ul style="list-style-type: none"> <li>• Public Hearings</li> </ul> |

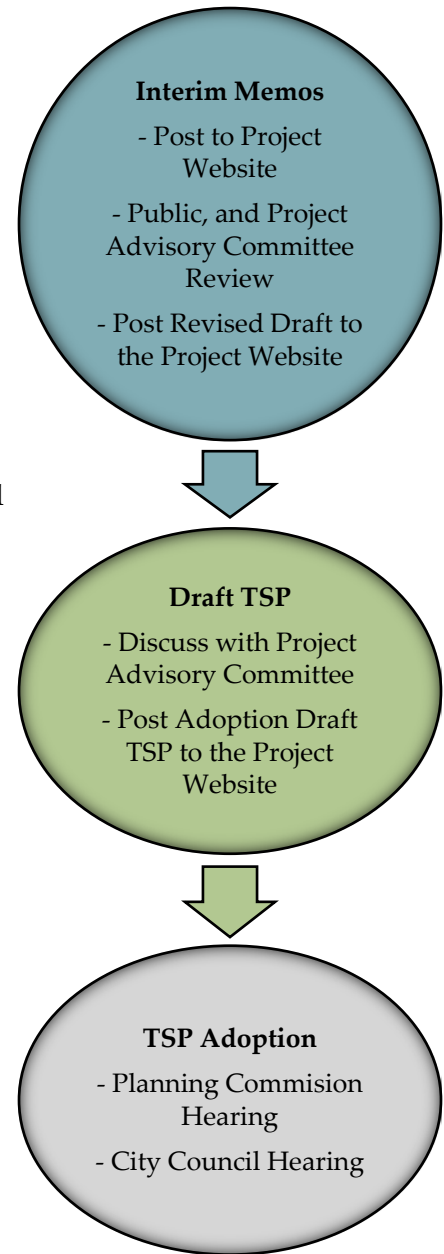
**Figure 2: The TSP Process**

# The Process

## The Public Review Process

The four-stage process in Figure 2 included a series of technical memoranda that discussed specific topics ranging from existing conditions to funding assumptions to transportation solutions. The project website ([www.gearharttsp.org](http://www.gearharttsp.org)) linked to each memorandum, giving the community opportunity to provide feedback and keep up to date with the project. The PAC reviewed and commented on each memorandum and worked with the project team to find agreement on issues and alternatives. The project team revised the draft memoranda based on the feedback from the PAC, the public, and the Planning Commission and City Council. These memoranda, as revised, ultimately became part of the Draft TSP. Public hearings with the Planning Commission and City Council on the Draft TSP led to the adoption of the 2017 Gearhart Transportation System Plan on August 2, 2017. This process is illustrated in Figure 3.

Throughout the planning effort, the project website linked to all project news, documents, and meeting notices. It allowed residents to comment about the transportation system and identify locations of problems and opportunities for improvement.



**Figure 3: Public Review Process**



# The Vision

**G**earhart could not properly maintain or improve its transportation system without a vision for what it could or should be. The project advisory committee and other community members, in initial discussions, expressed desire for a transportation system that supports rather than dominates the community, and accommodates residents and visitors in a safe, friendly, and affordable way (See Volume 2, Section J).

## Transportation Vision Statement

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The vision statement provides direction for the future of the transportation system in Gearhart.

*The design of transportation infrastructure promotes safe, comfortable travel, shows respect for the city's resources, and showcases the beautiful natural environment. All transportation modes flow smoothly and safely to and throughout the city, meeting the needs of residents, businesses, visitors, and people of all physical and financial conditions. The transportation system is reasonable and appropriate for the year-round population and inviting to the city's visitors.*

The vision statement and five goals describe the desires of the community with regard to its transportation system. A safe, convenient, and attractive transportation system is critical to a successful future for Gearhart.



# The Vision

## Transportation Goals

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The five transportation goals set priorities for transportation solutions and plan implementation.

■ **Goal 1: Access and Connectivity for All Modes**

Provide a transportation system that ensures a convenient and accessible network for all modes of travel, including walking, biking, using transit, and driving.

■ **Goal 2: Mobility**

Provide a multi-modal transportation system that facilitates efficient and reliable travel and will accommodate future growth.

■ **Goal 3: Safety and Preparedness**

Provide a transportation system that ensures safety for all modes and prepares the city to respond and recover from natural hazards.

■ **Goal 4: Livability, Health, and Recreation**

Provide a transportation system that preserves a livable community, enhances public health through supporting active transportation, and offers recreational opportunities.

■ **Goal 5: Environmental Resources**

Provide a transportation system that advances sustainable transportation options and minimizes impacts on the environment and important natural features.



# The Trends

To determine needed investments for the city's transportation system, the project team reviewed current travel conditions and forecasted future growth and travel trends through 2040 (see Volume 2, Section E and I for more information). Initial analysis of future travel conditions assumed future travel occurs on the transportation system that exists today. The analysis of current and future travel conditions identified deficiencies that might be addressed by investments in the transportation system.

## Gearhart in 2040

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Today, Gearhart is home to about 1,500 permanent residents. Between now and 2040, population and employment likely will increase. It will continue to host populations in the summer of 3,500 or more visitors at a time. With more people and jobs in Gearhart and more tourism activity on the coast, the transportation network will face increasing demand through 2040.

### More Travel and Tourism

Assuming Gearhart does not enhance its travel choices, and adds more jobs, residents, tourists, and coastal through traffic, the street network in 2040 must accommodate additional motor vehicle trips during the summer weekend peak hour. Today, the street network generally can handle the peak hour traffic; however, traffic on US 101 is expected to increase nearly 40 percent at intersections by the end of 2040. Much of the increased travel will begin or end in major residential and/or employment areas outside of Gearhart.

### More Congestion

An increase in motor vehicle travel leads to an increase in congestion. Travel activity, as reflected by evening peak hour motor vehicle trips beginning or ending in Gearhart, is expected to increase through 2040, especially during the summer months. Through trips (trips that neither begin nor end in Gearhart) also are likely to increase through 2040, due to increased tourism





# The Trends

activity at the coast and growth in Oregon generally and in neighboring cities such as Seaside.

Despite the forecasted increase in motor vehicle trips through 2040, most study intersections are expected to operate well within the mobility targets. The exceptions are the US 101/ Gearhart Loop Road and US 101/ G Street-Oster Road intersections, which are forecasted to have major delays for turns onto the highway from the side streets. The side streets at these intersections (Gearhart Loop Road and G Street-Oster Road) will continue to experience high delay due to steady volumes on US 101. These approaches typically require more time for an acceptable gap in traffic to make a left turn onto the highway, therefore, the delay of the side street is high and fewer vehicles on the side streets can be served. See TSP Volume 2, Section E for details about the highway performance analysis.

## Safety Concerns

The segment of US 101 around Gearhart Loop Road has been identified as a high collision location. With growing traffic volumes, this problematic area likely will persist, and may even become progressively worse. The safety across culverts (e.g., across Neacoxie Creek) and bridges (e.g., bridges along US 101 in Seaside providing the only direct link to Gearhart) is also of concern to the city given their role in facilitating the movement of people during emergency situations (i.e., tsunami evacuation).

## Pedestrian Network Needs

The quality of the pedestrian network depends on the presence of a sidewalk or path, a buffer zone (such as a shoulder, landscape strip, or on-street parking), street lighting, traffic volumes, number of travel lanes and travel speeds along the adjacent roadway. The pedestrian quality analysis shows the extent to which the pedestrian network provides a level of comfort and safety for users.

In Gearhart, an “Excellent” rating requires sidewalks on both sides of the roadway, along with a desirable buffer zone given the



# The Trends

roadway characteristics. A “Good” rating requires a sidewalk or shoulder on at least one side of the roadway, along with low traffic volumes and low motor vehicle travel speeds along the adjacent roadway. A “Fair” rating is given to a roadway without sidewalks or shoulders, but with low traffic volumes and low motor vehicle travel speeds along the adjacent roadway. A “Poor” rating denotes gaps within the pedestrian facilities along that corridor.

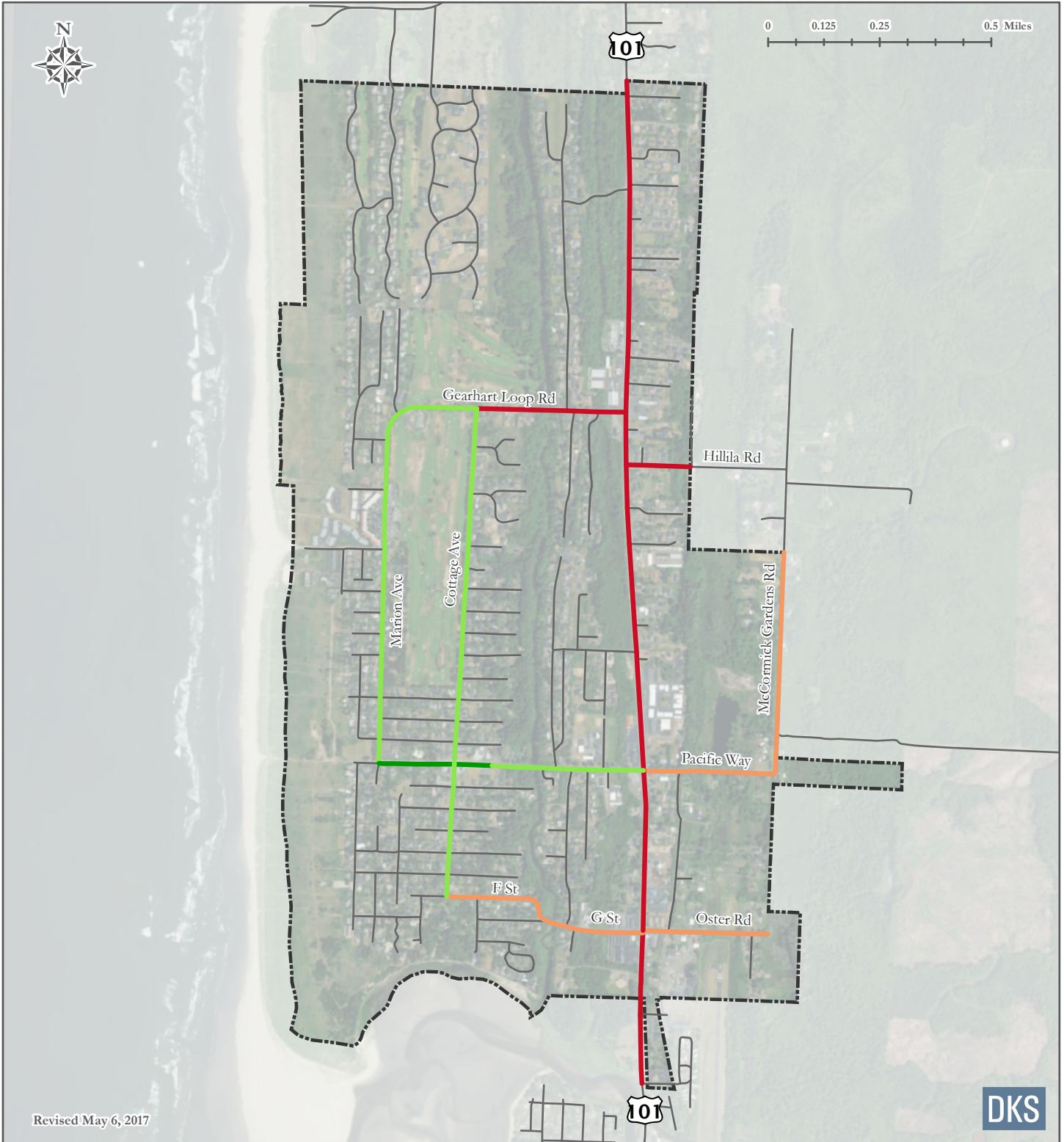
Figure 4 summarizes the pedestrian network conditions in Gearhart. Overall, the network rates relatively high near downtown and surrounding the Gearhart Golf Links, and poor towards the east side of the city and along US 101.

## Bicycle Network Needs

For the bicycle network evaluation, consideration is given to the presence and width of bike facilities (such as a bike lane, shoulder, path, shared roadway), grade and pavement conditions of the roadway, the number of travel lanes, motor vehicle volumes, and travel speeds along the adjacent roadway. In Gearhart, an “Excellent” rating requires separated bicycle facilities. A “Good” rating requires adequate bicycle facilities and width given the segment characteristics. A “Fair” rating is given to a roadway with bicycle facilities, but without the preferred facility type or width given the segment characteristics. A “Poor” rating denotes gaps within the bike network along that corridor.

Figure 5 summarizes the bicycle network conditions in Gearhart. This analysis shows that the arterial and collector streets in Gearhart rate relatively high on the west side of the city, and poor on the east side. The streets with the lowest ratings are the streets important for local and regional through travel (such as US 101, Pacific Way, Gearhart Loop Road), where most businesses and services are located. These streets rate low due to the relatively high motor vehicle traffic volumes and speeds and lack of separated bicycle facilities.





Revised May 6, 2017



**Legend:**

**Qualitative Pedestrian Assessment:**

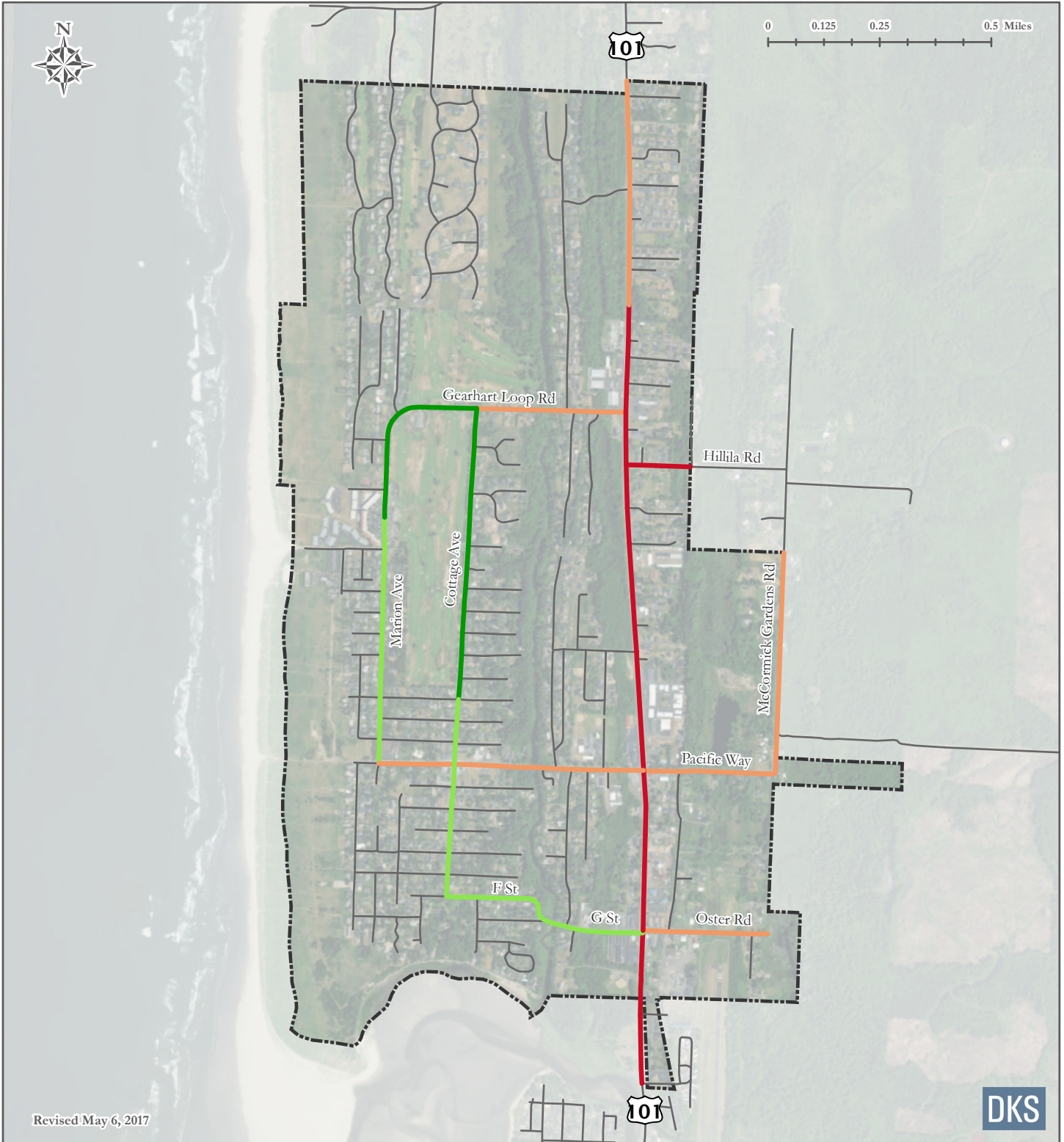
- Excellent
- Good
- Fair
- Poor

Urban Growth Boundary

**Note:**

Rating is based on a combination of sidewalk presence, speed limit, presence of buffers, roadway volume, number of lanes, shoulder widths and presence of lighting. Rating calculated on Collectors and Arterials.





Revised May 6, 2017



**Legend:**

**Qualitative Bicycle Assessment:**

- Excellent
- Good
- Fair
- Poor

Urban Growth Boundary

**Note:**

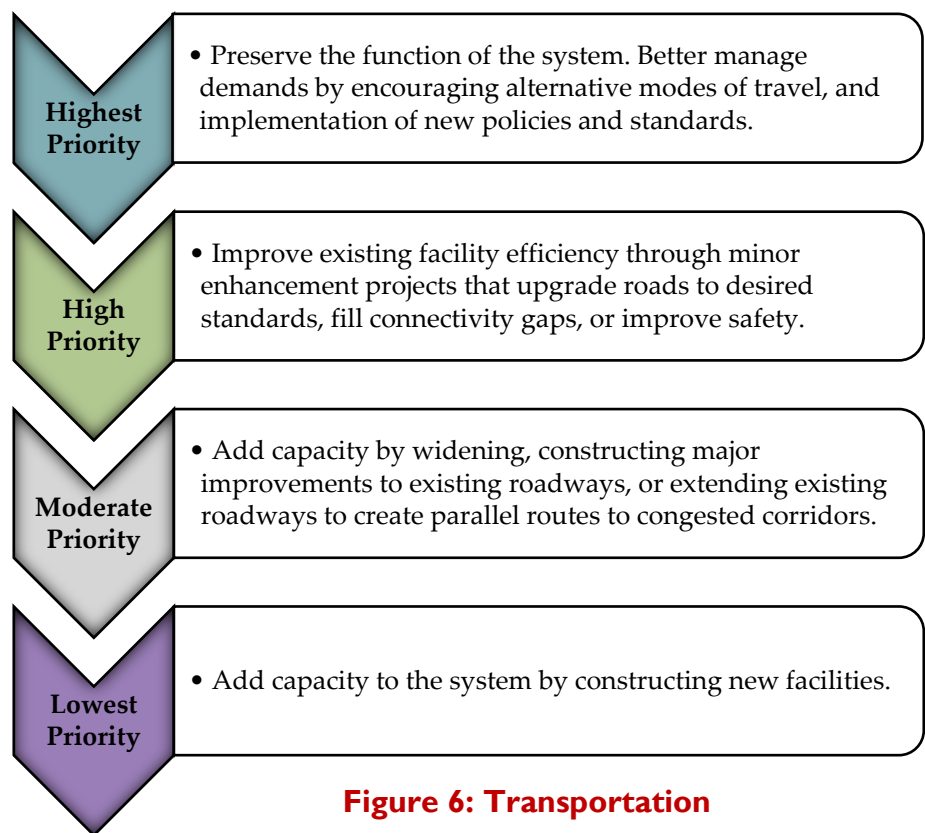
Rating is based on a combination of speed limit, presence of bicycle facilities, presence of buffers, on-street parking, access and other street characteristics. Rating calculated on Collectors and Arterials.

# The Investments

**G**earhart must make investment decisions to implement a set of transportation improvements that meet identified needs through 2040. Transportation funding is limited, so a fiscally responsible approach to enhancing and maintaining the transportation system is imperative.

## Developing the Transportation Investments

Gearhart's approach to developing the TSP emphasized investments in cost-effective solutions for the transportation system. A four-tiered process (Figure 6) considered alternatives from highest to lowest priority until identifying a viable solution. This process allowed the city 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, Sections F and G for more information about project priorities.



**Figure 6: Transportation Solutions Identification Process**

Projects deemed to contribute more towards achieving the transportation goals of Gearhart ranked higher and the plan assigned higher priority to their implementation. Solutions recommended in the TSP, consequently, are consistent with the goals.

# The Investments

## Transportation Investments

The investments are allocated to two funding buckets. The first is the Constrained Projects, or those projects that the city believes are reasonably likely to be funded during the 20-year planning horizon based on the constrained funding threshold established through city and ODOT funding analysis. The second bucket is the Aspirational Projects, which include all identified projects for improving Gearhart's transportation system, regardless of their primary funding source and priority. In contrast to constrained projects, they are not reasonably likely to be funded during the 20-year planning horizon, but do address an identified problem and are supported by the city and ODOT. It is recognized that Gearhart supports and would like to implement all of the projects identified in both of the project lists.

The full list of constrained and aspirational projects, shown in Table 1 on page 23, includes those identified through the TSP planning process. The full list includes 59 projects, totaling an estimated \$51 million worth of investments (in 2016 Dollars). See Volume 2, Sections F and G for more information on the development of the TSP project list.

The TSP's multi-modal, network-wide approach to identifying transportation system solutions assigns the projects to one of several categories:

- **Motor vehicle** projects improve safety and mobility throughout the city for motorists. Gearhart identified 11 projects to improve roadway segments and intersections that, as originally proposed, would cost an estimated \$23 million to complete.

For US 101, the Gearhart TSP calls for the development of a consistent three-lane configuration through most of Gearhart, with additional lanes at intersections as needed. The three-lane configuration would have one travel lane in each direction and a center turn lane. The three-lane

### Motor vehicle projects:

Gearhart identified 11 projects to improve roadway segments and intersections that would cost an estimated \$23 million to complete.

# The Investments

configuration for US 101 was selected to reduce travel speeds and improve conditions for motorists trying to turn on and off US 101.

To meet current Oregon Highway Plan (OHP) mobility targets, highway segments around signalized intersections would need to be widened to five lanes. Highway widening projects were considered but eliminated through the TSP planning process because they would have significant community, environmental, and right-of-way impacts and would require further environmental and technical analysis. In addition, highway widening projects are not financially feasible based on the current financial constraint threshold. Widening of the least expensive minimum logical highway segment would cost in the range of \$12 to \$15 million. No potential highway widening projects could be implemented in small enough segments to fit within the 20-year budget. The full range of US 101 design options considered during the TSP analysis process are described in TSP Volume 2, Section F.

With no US 101 capacity projects in the Gearhart TSP, traffic demand in the summer p.m. peak period at most unsignalized highway intersections likely will exceed capacity by 2040 due to very high delays for drivers attempting to turn left onto the highway.

With the city's preference for a three-lane configuration on US 101, the city will need to work with ODOT to establish alternative mobility targets for US 101 that reflect its expected performance over the planning horizon.

- **Bridge** projects would provide seismic retrofits and improve those that are substandard in the city. Gearhart identified five bridge/culvert improvement projects that, as originally proposed, would cost an estimated \$2 million to complete. The bridge projects include city support for

## Bridge projects:

Gearhart identified five bridge/culvert improvement projects that would cost an estimated \$2 million to complete.

# The Investments

replacement of the US 101 bridge over Mill Creek and Neawanna Creek in Seaside.

- **Pedestrian and Bicycle** projects include sidewalk, path and roadway crossing improvements, and an integrated network of bicycle lanes, marked on-street routes and shared-use paths to facilitate safe and convenient travel citywide. Gearhart identified 33 pedestrian and bicycle projects that, as originally proposed, would cost an estimated \$25 million to complete.

One advantage of the three-lane configuration selected for US 101 is that it makes room for turn lanes and bicycle and pedestrian facilities on US 101 without the need to expand right-of-way.

The Gearhart TSP project list combines a number of pedestrian and bicycle projects with roadway projects, particularly on US 101. However, the city may seek to develop some walking and biking projects separately from associated roadway projects for a variety of reasons:

- 1) Walking and biking projects are generally less expensive and have less impact than roadway widening projects and most can be accomplished within the existing right-of-way.
- 2) Construction of walking and biking projects can be done in smaller phases or combined with a related maintenance activity like a pavement rehabilitation job.
- 3) Walking and biking projects are generally non-controversial in nature and provide clear safety benefits to the more vulnerable users of the transportation system.

- **Transit** projects would enhance the quality and convenience for passengers. Five transit projects were identified that would cost an estimated \$200 thousand.

## Pedestrian and bicycle projects:

Gearhart identified 33 pedestrian and bicycle projects that, as originally proposed, would cost an estimated \$25 million to complete.



# The Investments

- **Demand and System Management** projects to encourage more efficient usage of the transportation system. Five projects would cost an estimated \$700 thousand.

## Funding Gap

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The \$28 million total cost of the 35 identified locally-funded transportation system projects is far greater than the city's ability to raise funds. Unless Gearhart develops additional revenue streams, the city can expect to have no more than \$1.2 million of local street funds to spend on locally-funded improvements over the next 20 years.

The city uses three general funding sources for transportation, including funds from:

- **The Surface Transportation Program (STP).** Federal Highway Trust Funds are received from federal motor vehicle fuel tax and truck-related weight-mile charges. The six-year Federal Transportation Authorization Act allocates funds through various programs. Federal Highway Trust Funds from the STP flow to the states that use them primarily for safety, highway, and bridge projects. Gearhart receives a portion of these funds based partially upon population.
- **The State Highway Trust Fund.** The State Highway Trust Fund makes distributions from the state motor vehicle fuel tax, vehicle registration and title fees, driver license fees, and truck weight-mile taxes. Cities and counties receive a share of State Highway Trust Fund monies based on registered vehicles, and by statute may use the money for any road-related purpose, including walking, biking, bridge, street, signal, and safety improvements.

The state gas tax funds previously have failed to keep up with cost increases and inflation. With increased fuel efficiency of vehicles and the State's emphasis on reducing

### City funding gap:

Gearhart has just \$1.2 million to fund the \$28 million total cost of the locally-funded transportation system projects.

# The Investments

vehicle miles traveled, the real revenue collected gradually has eroded over time. In an effort to offset the relative decline in contribution of state funds, the 2009 legislature passed the Oregon Jobs and Transportation Act (Oregon House Bill 2001). It increases transportation-related fees including the state gas tax and vehicle registration fees as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon increased from \$27 to \$43 per vehicle per year for passenger cars, with similar increases for other vehicle types. The gas tax in Oregon increased on January 1, 2011 by six cents, to 30 cents per gallon, the first increase in the state gas tax since 1993.

- **A Road District Tax.** Gearhart has a road taxing district that was formed by public vote in the late 1980s. Property owners in Gearhart are charged \$0.0602 per \$1,000 in assessed value (as of March 2017). The road district funds are utilized to provide preventive maintenance and improvements along streets within the city.

Nearly 60 percent of Gearhart's current revenue streams for transportation fund maintenance of the existing system. Rising maintenance costs through 2040 will diminish the share of funds available for improvements to the transportation system.

## Transportation system maintenance:

Nearly 60 percent of Gearhart's current revenue streams for transportation fund maintenance of the existing system.

# The Investments

The TSP has identified over \$14 million worth of needed investments (spread out over 13 projects) along US 101. ODOT has indicated that only \$1 million in discretionary state and/or federal funds, beyond what is currently programmed in the Statewide Transportation Improvement Program, may be available to invest in Gearhart over the next 20 years<sup>2</sup> for system modernization and enhancement.

The TSP has identified five projects estimated at \$5 million for which Clatsop County would be the primary source of funding, and six projects estimated at \$4 million that would be jointly funded by the state, county, and local agencies (for more information on the funding assumptions utilized for the TSP, see Volume 2, Section C).

## ODOT funding for US 101:

ODOT has indicated that only \$1 million in discretionary state and/or federal funds may be available to invest in the \$14 million worth of needed projects along US 101 in Gearhart.

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<sup>2</sup> The State has not committed any future funding for projects in Gearhart. This assumption is for long-range planning purposes only. This estimate is based on assuming that Gearhart will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than this estimate, which does not include projects that the federal Highway Safety Improvement Program (HSIP) could fund.

# The Plan

**T**he TSP sets priorities for spending anticipated funds and identifies projects that would be possible with additional funding.

## Prioritizing Investments

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Unless the city expands its funding options, most of the desired transportation system projects are not likely to happen before 2040. For this reason, the TSP splits transportation solutions into improvement packages.

- **Package 1** is financially constrained, meaning it totals the \$1.2 million likely to be available through existing city funding sources. Package 1 also includes an estimate of how the city would use revenue from various state and/or federal sources.
- **Packages 2 and 3** each rely on \$2.5 million of additional funding that would be available if the city opted to add one of the new funding sources described on page 48.
- **Package 4** is comprised of the aspirational projects, those remaining projects with costs that exceed the likely level of city and state funding available through 2040.

The TSP compared all proposed projects using the five TSP goals (detailed in the “Vision” section of the TSP). Based on a project’s contribution to achieving the transportation goals of Gearhart, the process assigned each transportation solution a priority. The process favored implementation of low cost projects that would have more immediate impacts and spread investment benefits citywide.

The city has discretion to implement the projects in a different order than is reflected in Table 1. Future circumstances could allow or require the city to fund projects not on the financially constrained project list to address an unanticipated transportation need or take advantage of an unexpected opportunity.



# The Plan

## The Financially Constrained Plan

The financially constrained plan identifies the transportation solutions off US 101 that the city prioritizes for funding and implementation by 2040, presented in Table 1 and Figure 7.

ODOT has projected that the city could receive up to \$1 million from various state and/or federal sources over the next 20 years. Based on current needs, Table 1 and Figure 7 show how the city could use the state funds. The projects listed are illustrative only and ODOT does not give them higher priority than any other US 101 project in the city's list. The city may modify and adapt the list to advance any supported project along US 101 in response to any opportunity or issue that may arise during the planning horizon.

## The Aspirational Plan

The aspirational transportation system identifies valuable solutions that may not have funding by 2040, unless additional sources become available. Some of the projects require city funding and resources beyond what is available in the time frame of this plan. Others are contingent upon grants, development, or redevelopment. Some of the aspirational projects in Table 1 and in Figure 7 have designations of Package 2 or Package 3, indicating their potential priority should the city develop new sources of funding.



# The Plan

## Financially Constrained and Aspirational Projects

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The following pages include the financially constrained and aspirational projects in chart form and on accompanying maps. Improvement Package 1, Financially Constrained Plan totals the \$1.2 million likely to be available through existing city funding sources. It also suggests how the city would use a likely amount of revenue from state and/or federal sources. Improvement Package 2 relies on \$2.5 million of additional funding that would be available only if the city added one of the new funding sources described on page 48. Improvement Package 3 relies on \$2.5 million of additional funding that would be available only if the city added a second new funding source described on page 48. Improvement Package 4, Aspirational Plan, includes projects with costs that exceed the likely level of available funding through 2040.

The projects listed in Table 1 are shown in geographical order starting in the northwest portion of the city.

The project identification numbers in the first column indicate which agency will lead the project development. The Project IDs are coded as follows:

- “G” to represents a Gearhart project
- “S” is a state led project
- “C” is a Clatsop County project
- “T” is for transit (Sunset Empire Transportation District)

The project design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes.

The actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process, and are subject to city and/or ODOT approval.



# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID  | Project Description   | Project Elements**   | Project Purpose  | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|---|---|--|--|-------------------------------|---------------------------|-------------|
| <b>Demand and System Management Projects</b>                        |   |  |  |                               |                           |             |
| A   | Neighborhood Traffic Calming Program                            | Implement program to process community requests for neighborhood traffic calming, investigate options, and implement improvements. Key areas for traffic calming investigations include: Cottage Avenue, F Street, G Street, and Pine Ridge Drive. | Reduce motor vehicle travel speeds along residential streets | \$100,000                     | City                      | 4           |
| B   | Tsunami Evacuation Route Identification                         | Enhance tsunami evacuation route wayfinding throughout the City.   | Tsunami evacuation   | \$50,000                      | City                      | 1           |
| C   | Bike Parking Program  | Install new bike parking at key activity centers around the City.  | Increase bike parking  | \$30,000                      | City                      | 1           |
| D   | Wayfinding Signage Program                                      | Install wayfinding signage to assist pedestrians and bicyclists in choosing comfortable routes and to help visitors navigate through the City.   | Improve wayfinding signage                                   | \$75,000                      | City                      | 1           |
| E   | Ridge Path Enhancements   | Implement improvements along the Ridge Path alignment and at Ridge Path street crossings. Key areas for street crossing improvements include at Pacific Way, and F Street.   | Ridge Path enhancements                                      | \$425,000                     | City                      | 2           |
| <b>Estimated Cost for all Demand and System Management Projects</b> |   |  |  | <b>\$680,000</b>              |                           |             |
| <b>Motor Vehicle Projects</b>                                       |   |  |  |                               |                           |             |
| G1  | Ocean Avenue Improvements from Pacific Way to G Street          | Remove the sidewalk along the east-side of the street, and allow intermittent on-street parking.   | Emergency vehicle access                                     | \$150,000                     | City                      | 4           |
| G2  | McCormick Gardens Road extension from Pacific Way to Oster Road | Extend McCormick Gardens Road from Pacific Way to Oster Road. This street should be constructed as a Collector, with a shared-use path on the east side.   | Street connectivity; walking and biking facility gap         | \$3,265,000                   | City/County               | 4           |
| G3  | Railroad Avenue extension from Pacific Way to Park Lane         | Extend Railroad Avenue from Pacific Way to Park Lane. This street should be constructed as a Local Street, with a shared-use path on the east side.  | Street connectivity; walking and biking facility gap         | \$3,030,000                   | City                      | 4           |



# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID | Project Description   | Project Elements**   | Project Purpose   | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|------------|---|--|---|-------------------------------|---------------------------|-------------|
| G4*        | Tressel Drive extension from Hillila Road to Park Lane                            | Extend Tressel Drive from Hillila Road to Park Lane. This street should be constructed as a Local Street, with a shared-use path on the east side. | Street connectivity; walking and biking facility gap          | \$2,825,000                   | City                      | 4           |
| S1         | US 101 Improvements between Shamrock Road and the north UGB (near East Pine Lane) | Reconfigure US 101 to provide bike lanes and widen for a shared-use path.  | Motor vehicle safety; walking and biking facility gap         | \$1,200,000                   | State                     | 4           |
| S2         | US 101 Improvements between Shamrock Road and Hillila Road                        | Reconfigure US 101 to three lanes and buffered bike lanes, and widen for a shared-use path.  | Motor vehicle safety; walking and biking facility gap         | \$3,500,000                   | State                     | 4           |
| S3         | US 101/ Gearhart Loop Road Intersection Improvements                              | Intersection improvements (e.g., possible installation of traffic control, if warranted; upgrade the intersection to current ADA standards).       | Motor vehicle congestion; walking and biking highway crossing | \$1,000,000                   | State                     | 4           |
| S4         | US 101 Improvements between Hillila Road and 5th Street                           | Reconfigure US 101 to three lanes and buffered bike lanes, and widen for a shared-use path.  | Motor vehicle safety; walking and biking facility gap         | \$2,350,000                   | State                     | 4           |
| S5         | US 101 Improvements between 5th Street and Pacific Way                            | Reconfigure US 101 to three lanes and buffered bike lanes, and widen for a sidewalk and shared-use path.   | Motor vehicle safety; walking and biking facility gap         | \$1,950,000                   | State                     | 4           |
| S6         | US 101 Improvements between Pacific Way and G Street-Oster Road                   | Reconfigure US 101 to provide bike lanes and widen for a sidewalk and shared-use path.   | Motor vehicle safety; walking and biking facility gap         | \$2,200,000                   | State                     | 4           |



# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID   | Project Description   | Project Elements**   | Project Purpose                                       | Estimated Cost (2016 Dollars)  | Primary Funding Source*** | Package**** |
|--|---|--|---|--------------------------------|---------------------------|-------------|
| S7   | US 101 Improvements between G Street-Oster Road and the south UGB (near Seaside Airport Lane) | Reconfigure US 101 to provide bike lanes and widen for a shared-use path This project should connect with the planned shared-use path in Seaside.  | Motor vehicle safety; walking and biking facility gap | \$1,800,000                    | State                     | 1           |
| <b>Estimated Cost for all Motor Vehicle Projects</b> |   |  |   | <b>\$23,270,000</b>            |                           |             |
| <b>Bridge Projects</b>                               |   |  |   |                                |                           |             |
| G5   | Gearhart Loop Road bridge/ culvert over Neacoxie Creek Improvements                           | Provide seismic retrofits to the Gearhart Loop Road bridge/ culvert over Neacoxie Creek.   | Walking and biking facility gap; tsunami evacuation   | \$725,000                      | City                      | 1           |
| G6   | Pacific Way bridge/ culvert over Neacoxie Creek Improvements                                  | Provide seismic retrofits to the Pacific Way bridge/ culvert over Neacoxie Creek.  | Walking and biking facility gap; tsunami evacuation   | \$965,000                      | City                      | 2           |
| G7   | G Street bridge/ culvert over Neacoxie Creek Improvements                                     | Provide seismic retrofits to the G Street bridge/ culvert over Neacoxie Creek.   | Walking and biking facility gap; tsunami evacuation   | \$430,000                      | City                      | 2           |
| S8   | US 101 bridge over Mill Creek in Seaside Improvements   | Support the replacement of the US 101 bridge over Mill Creek (Bridge No. 03079A) in Seaside, to include seismic retrofits and pedestrian and bicycle facilities.   | Walking and biking facility gap; tsunami evacuation   | \$5,000 (City staff time only) | State                     | 4           |
| S9   | US 101 bridge over Neawanna Creek in Seaside Improvements                                     | Support the replacement of the US 101 bridge over Neawanna Creek (Bridge No. 01305) in Seaside (Seaside TSP Project 1b), to include seismic retrofits and pedestrian and bicycle facilities.   | Walking and biking facility gap; tsunami evacuation   | \$5,000 (City staff time only) | State                     | 4           |
| <b>Estimated Cost for all Bridge Projects</b>        |   |  |   | <b>\$2,130,000</b>             |                           |             |
| <b>Walking and Biking Projects</b>                   |   |  |   |                                |                           |             |
| G8<br>*****  | Pine Ridge Drive Improvements from Shamrock Road north to the end of the street               | Add pedestrian and bicycle improvements to Pine Ridge Drive from Shamrock Road north to the end of the street (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes). This is currently a private street. | Walking and biking facility gap; tsunami evacuation   | \$440,000                      | City                      | 4           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID   | Project Description  | Project Elements**   | Project Purpose                                     | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|--------------|--|--|---|-------------------------------|---------------------------|-------------|
| G9<br>*****  | Shamrock Road Improvements from US 101 to Pine Ridge Drive                       | Add pedestrian and bicycle improvements to Shamrock Road from US 101 to Pine Ridge Drive (e.g., shared-use path on the north side). This is currently a private street.  | Walking and biking facility gap; tsunami evacuation | \$520,000                     | City                      | 4           |
| G10<br>***** | Pine Ridge Drive Improvements from Gearhart Loop Road to Shamrock Road           | Add pedestrian and bicycle improvements to Pine Ridge Drive from Gearhart Loop Road to Shamrock Road (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes). A portion of this is currently a private street. | Walking and biking facility gap; tsunami evacuation | \$1,470,000                   | City                      | 4           |
| G11          | Gearhart Loop Road Improvements from US 101 to Cottage Avenue                    | Add pedestrian and bicycle improvements to Gearhart Loop Road from US 101 to Cottage Avenue (e.g., shared-use path on the north side, and sidewalk or path on the south side).   | Walking and biking facility gap; tsunami evacuation | \$1,925,000                   | City                      | 4           |
| G12          | Gearhart Loop Road Improvements from Cottage Avenue to 10th Street               | Add pedestrian and bicycle improvements to Gearhart Loop Road from Cottage Avenue to 10th Street (e.g., shared-use path on the north side).  | Walking and biking facility gap; tsunami evacuation | \$1,670,000                   | City                      | 4           |
| G13          | Marion Avenue Improvements from Pacific Way to 10th Street                       | Add bicycle improvements to Marion Avenue from Pacific Way to 10th Street (e.g., pavement markings/ signage designating it as a shared street for bikes).  | Biking facility gap                                 | \$30,000                      | City                      | 1           |
| G14          | Fifer Heights Road Improvements from Gearhart Loop Road to the end of the street | Add pedestrian and bicycle improvements to Fifer Heights Road from Gearhart Loop Road to the end of the street (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes).  | Walking and biking facility gap; tsunami evacuation | \$850,000                     | City                      | 4           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID | Project Description  | Project Elements**   | Project Purpose                                     | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|------------|--|--|---|-------------------------------|---------------------------|-------------|
| G15        | Shared-use path connection between Summit Avenue and Fifer Heights Road                  | Create a shared-use path connection between Summit Avenue and Fifer Heights Road.  | Walking and biking facility gap; tsunami evacuation | \$50,000                      | City                      | 1           |
| G16        | Shared-use path connection over Neacoxie Creek, between the 8th Street and Summit Avenue | Create a shared-use path connection over Neacoxie Creek, between the 8th Street and Summit Avenue. The connection to Summit Avenue is via a vacant lot (right-of-way is needed).   | Walking and biking facility gap; tsunami evacuation | \$910,000                     | City                      | 2           |
| G17        | Summit Avenue Improvements from 5th Street north to the end of the street                | Add pedestrian and bicycle improvements to Summit Avenue from 5th Street north to the end of the street (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes). | Walking and biking facility gap; tsunami evacuation | \$675,000                     | City                      | 4           |
| G18        | Summit Avenue Improvements from Pacific Way to 5th Street                                | Add pedestrian and bicycle improvements to Summit Avenue from Pacific Way to 5th Street (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes).                 | Walking and biking facility gap; tsunami evacuation | \$825,000                     | City                      | 4           |
| G19        | 5th Street Improvements from US 101 to Summit Avenue                                     | Add pedestrian and bicycle improvements to 5th Street from US 101 to Summit Avenue (e.g., shared-use path on the south side).  | Walking and biking facility gap; tsunami evacuation | \$615,000                     | City                      | 4           |
| G20        | Pacific Way Improvements from US 101 to the Ridge Path                                   | Add pedestrian and bicycle improvements to Pacific Way from US 101 to the Ridge Path (e.g., sidewalk or path on the north side, and pavement markings/ signage designating it as a shared street for bikes).                   | Walking and biking facility gap; tsunami evacuation | \$1,340,000                   | City                      | 3           |
| G21        | Pacific Way Improvements from Marion Avenue to the Ridge Path                            | Add bicycle improvements to Pacific Way from Marion Avenue to the Ridge Path (e.g., pavement markings/ signage designating it as a shared street for bikes).   | Biking facility gap                                 | \$15,000                      | City                      | 1           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID | Project Description  | Project Elements**   | Project Purpose                                     | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|------------|--|--|---|-------------------------------|---------------------------|-------------|
| G22        | F Street-G Street Improvements from Ocean Avenue to Cottage Avenue       | Add pedestrian improvements to F Street-G Street from Ocean Avenue to Cottage Avenue (e.g., sidewalk or path on the south side).   | Walking facility gap; tsunami evacuation            | \$780,000                     | City                      | 4           |
| G23        | Cottage Avenue Improvements from Pacific Way to F Street                 | Add bicycle improvements to Cottage Avenue from Pacific Way to F Street (e.g., pavement markings/ signage designating it as a shared street for bikes).  | Biking facility gap                                 | \$20,000                      | City                      | 1           |
| G24        | F Street-G Street Improvements from US 101 to Cottage Avenue             | Add pedestrian and bicycle improvements to F Street-G Street from US 101 to Cottage Avenue (e.g., shared-use path on the south side).  | Walking and biking facility gap; tsunami evacuation | \$1,610,000                   | City                      | 4           |
| G25        | Woodland Avenue Improvements from Pacific Way to G Street                | Add pedestrian and bicycle improvements to Woodland Avenue from Pacific Way to G Street (e.g., sidewalk or path on the west side, and pavement markings/ signage designating it as a shared street for bikes).   | Walking and biking facility gap; tsunami evacuation | \$1,115,000                   | City                      | 4           |
| G26        | Oster Road Improvements from US 101 to the end of the street             | Add pedestrian and bicycle improvements to Oster Road from US 101 to the end of the street (e.g., shared-use path on the south side).  | Walking and biking facility gap; tsunami evacuation | \$965,000                     | City                      | 4           |
| G27        | Railroad Avenue Improvements from Pacific Way to Oster Road              | Add pedestrian and bicycle improvements to Railroad Avenue from Pacific Way to Oster Road (e.g., sidewalk or path on the east side, and pavement markings/ signage designating it as a shared street for bikes). | Walking and biking facility gap; tsunami evacuation | \$1,255,000                   | City                      | 4           |
| G28        | Pacific Way Improvements from US 101 to McCormick Gardens Road           | Add pedestrian and bicycle improvements to Pacific Way from US 101 to McCormick Gardens Road (e.g., shared-use path on the south side).  | Walking and biking facility gap; tsunami evacuation | \$1,000,000                   | City                      | 3           |
| G29        | Shared-use path connection between 5th Street and McCormick Gardens Road | Create a shared-use path connection between 5th Street and McCormick Gardens Road.   | Walking and biking facility gap; tsunami evacuation | \$605,000                     | City                      | 4           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID | Project Description   | Project Elements**   | Project Purpose                                     | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|------------|---|--|---|-------------------------------|---------------------------|-------------|
| G30*       | Tressel Drive Improvements from Hilllila Road to the end of the street          | Add pedestrian and bicycle improvements to Tressel Drive from Hilllila Road to the end of the street (e.g., shared-use path on the east side).   | Walking and biking facility gap; tsunami evacuation | \$580,000                     | City                      | 4           |
| G31        | Shared-use path connection between Shamrock Road and Tressel Drive              | Create a shared-use path connection between Shamrock Road and Tressel Drive.   | Walking and biking facility gap; tsunami evacuation | \$270,000                     | City                      | 4           |
| S10        | US 101 Crossing Study near Shamrock Road  | Study for potential highway crossing enhancements at the north end of the city, near Shamrock Road.  | Walking and biking facility gap                     | \$50,000                      | State                     | 4           |
| S11        | US 101 Crossing Study near 5th Street   | Study for potential highway crossing enhancements between Gearhart Loop Road and Pacific Way, near 5th Street.   | Walking and biking facility gap                     | \$50,000                      | State                     | 4           |
| S12        | US 101/ Pacific Way Intersection Improvements                                   | Intersection improvements (e.g., upgrade the intersection to current ADA standards).   | Walking and biking highway crossing                 | \$365,000                     | State                     | 4           |
| S13        | US 101 Crossing Study near G Street-Oster Road                                  | Study for potential highway crossing enhancements at the south end of the city, near G Street-Oster Road.  | Walking and biking facility gap                     | \$50,000                      | State                     | 4           |
| C1         | Hilllila Road Improvements from US 101 to Tressel Drive                         | Add pedestrian and bicycle improvements to Hilllila Road from US 101 to Tressel Drive (e.g., shared-use path on the north side).   | Walking and biking facility gap; tsunami evacuation | \$515,000                     | County                    | 4           |
| C2*        | Hilllila Road Improvements from Tressel Drive to McCormick Gardens Road         | Add pedestrian and bicycle improvements to Hilllila Road from Tressel Drive to McCormick Gardens Road (e.g., shared-use path on the north side). This project is located outside of the UGB. | Walking and biking facility gap; tsunami evacuation | \$675,000                     | County                    | 4           |
| C3*        | Salminen Road Improvements from McCormick Gardens Road to the end of the street | Add pedestrian and bicycle improvements to Salminen Road from McCormick Gardens Road to the end of the street (e.g., shared-use path). This project is located outside of the UGB.           | Walking and biking facility gap; tsunami evacuation | \$1,995,000                   | County                    | 4           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID  | Project Description  | Project Elements**   | Project Purpose                                     | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|---|--|--|---|-------------------------------|---------------------------|-------------|
| C4*   | McCormick Gardens Road Improvements from Hillila Road to the UGB                 | Add pedestrian and bicycle improvements to McCormick Gardens Road from Hillila Road to the UGB, 0.15 miles south of Salminen Road (e.g., shared-use path on the east side). This project is located outside of the UGB.  | Walking and biking facility gap; tsunami evacuation | \$515,000                     | County                    | 4           |
| C5  | McCormick Gardens Road Improvements from Pacific Way to the UGB                  | Add pedestrian and bicycle improvements to McCormick Gardens Road from Pacific Way to the UGB, 0.15 miles south of Salminen Road (e.g., shared-use path on the east side).   | Walking and biking facility gap; tsunami evacuation | \$1,670,000                   | County                    | 4           |
| <b>Estimated Cost for all Walking and Biking Projects</b> |  |  |   | <b>\$25,420,000</b>           |                           |             |
| <b>Transit Projects</b>                                   |  |  |   |                               |                           |             |
| T1  | Bus stop along northbound US 101 near Wild Rose Lane Upgrades                    | Upgrade amenities at the SETD bus stop along northbound US 101 near Wild Rose Lane, to include sheltered stops with seating, route information, bicycle parking, and improved lighting.  | Transit facility improvements                       | \$50,000                      | City/SETD                 | 4           |
| T2  | Bus stop along southbound US 101 near Wild Rose Lane Upgrades                    | Upgrade amenities at the SETD bus stop along southbound US 101 near Wild Rose Lane, to include sheltered stops with seating, route information, bicycle parking, and improved lighting. The NorthWest POINT bus stop along southbound US 101 near Cottonwood Lane should be relocated to this location (see project T3). | Transit facility improvements                       | \$50,000                      | City/SETD                 | 4           |
| T3  | NorthWest POINT bus stop along southbound US 101 near Cottonwood Lane Relocation | Relocate the NorthWest POINT bus stop along southbound US 101 near Cottonwood Lane to share the location with the SETD bus stop along southbound US 101 near Wild Rose Lane.   | Transit facility improvements                       | \$5,000                       | City/SETD                 | 4           |

# The Plan

**Table I: Financially Constrained and Aspirational Project List**

| Project ID                                     | Project Description  | Project Elements**   | Project Purpose               | Estimated Cost (2016 Dollars) | Primary Funding Source*** | Package**** |
|--|--|--|-------------------------------|-------------------------------|---------------------------|-------------|
| T4   | Bus stop along southbound US 101 near Pacific Way Upgrades | Upgrade amenities at the SETD bus stop along southbound US 101 near Pacific Way, to include sheltered stops with seating, route information, bicycle parking, and improved lighting. | Transit facility improvements | \$50,000                      | City/SETD                 | 4           |
| T5   | Bus stop along northbound US 101 near Pacific Way Upgrades | Upgrade amenities at the SETD bus stop along northbound US 101 near Pacific Way, to include sheltered stops with seating, route information, bicycle parking, and improved lighting. | Transit facility improvements | \$50,000                      | City/SETD                 | 4           |
| <b>Estimated Cost for all Transit Projects</b> |  |  |                               | <b>\$205,000</b>              |                           |             |
| <b>Estimated Cost for all Projects</b>         |  |  |                               | <b>\$51,705,000</b>           |                           |             |

\* Projects located outside the Urban Growth Boundary (UGB) are conceptual only. They are either new facilities, or improvements to existing facilities, that may be needed to (1) accommodate tsunami evacuation or (2) provide some other safety or connectivity benefit. They are not needed to accommodate traffic volumes forecasted within the planning horizon, nor has a funding source been identified. Consequently, they are not considered planned facilities as referred to in OAR 660-012 and cannot be constructed without additional analysis, public review, and approval (from local and state agencies). It may also be necessary to obtain an exception to statewide planning goals or expand the UGB.

\*\*The project design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any project are subject to change, and will ultimately be determined through a preliminary and final design process, and are subject to city and/or ODOT approval.

\*\*\*Funding will come from a variety of sources. Primary funding source is based on the agency who has jurisdiction over an existing facility, or who is expected to construct a new facility.

\*\*\*\*Improvement Package 1: Financially Constrained Plan (Totals the \$1.2 million likely to be available through existing city funding sources. Package 1 also includes a reasonable estimate of how the city would use revenue from various state and/or federal sources).

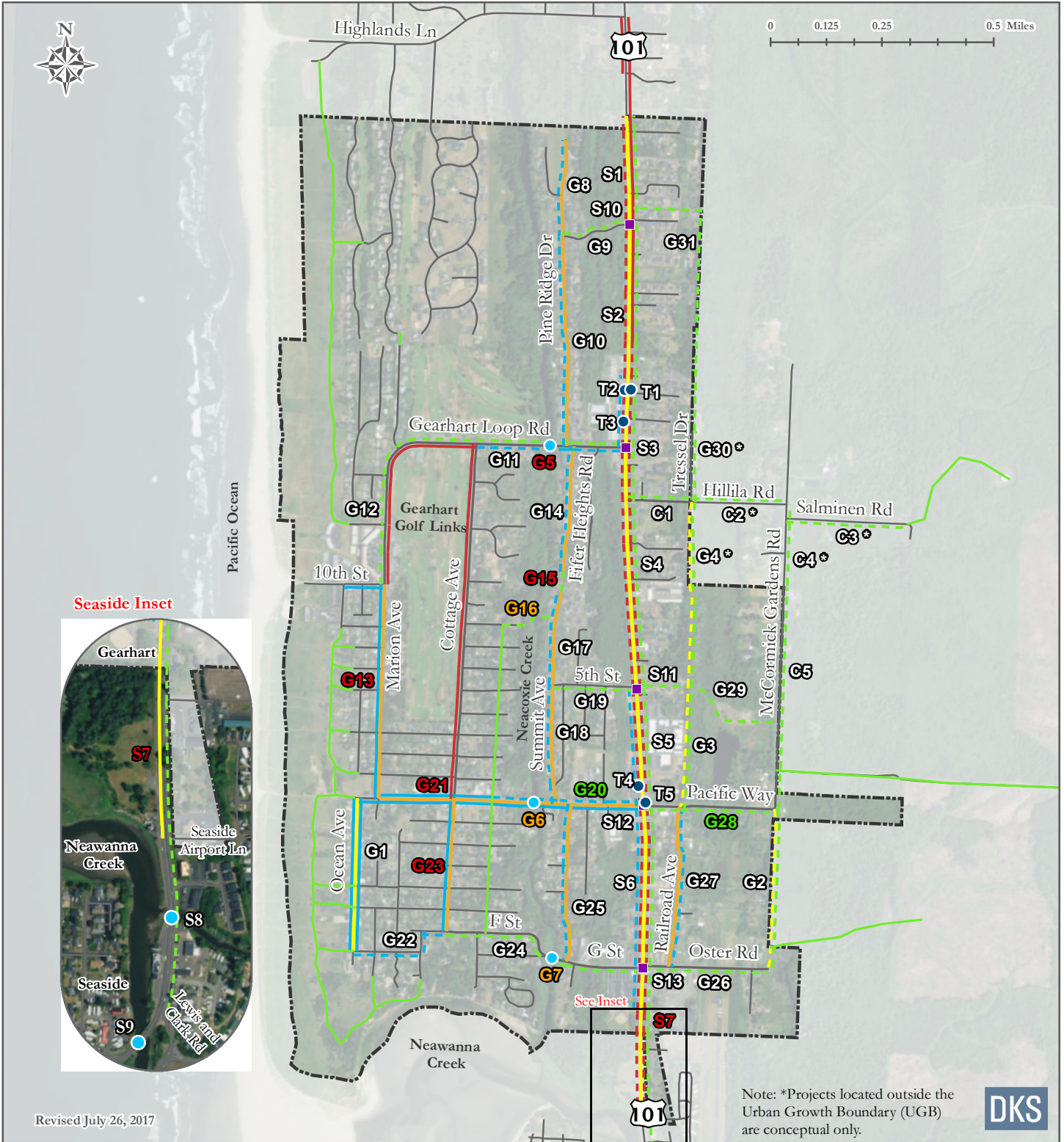
Improvement Package 2: Relies on \$2.5 million of additional funding that would be available if the city opted to add one of the new funding sources described on page 48.

Improvement Package 3: Relies on \$2.5 million of additional funding that would be available if the city opted to add one of the new funding sources described on page 48.

Improvement Package 4: Comprised of the aspirational projects, those remaining projects that likely would not have city or state funding by 2040.

\*\*\*\*\*No public funds will be spent on private streets. These projects have been included in the plan to show the need and will only be eligible for public funds when and if they become public streets in the future.





Revised July 26, 2017

Note: \*Projects located outside the Urban Growth Boundary (UGB) are conceptual only.



### Legend:

- Planned Street Improvement
- - - Planned Street Extension
- Planned Intersection Improvement or Study
- Planned Bus Stop Improvement
- Planned Bridge or Culvert Improvement

### Pedestrian, and Bicycle Facilities:

- | Existing                              | Planned                                  |   |
|---------------------------------------|--|---|
| <span style="color: blue;">—</span>   | <span style="color: blue;">- - -</span>  | Sidewalk                                    |
| <span style="color: red;">—</span>    | <span style="color: red;">- - -</span>   | Bike Lane or Shoulder<br>Bikeway (> 5 feet) |
| <span style="color: green;">—</span>  | <span style="color: green;">- - -</span> | Trails                                      |
| <span style="color: orange;">—</span> | <span style="color: orange;">—</span>    | Planned Shared Street                       |

- Project included in the Financially Constrained Plan (Package 1)
- Priority project with additional funding (Package 2)
- Priority project with additional funding (Package 3)
- Project included in the Aspirational Plan (Package 4)



# The Standards

The TSP sets standards and regulations to ensure future development or redevelopment of property is consistent with the city's transportation vision and goals (see Volume 2, Sections D and H for more information).

## Functional Classification

The roadway functional classification (shown in Figure 8) determines the level of mobility for all travel modes for anticipated level of access and usage. The functional classification system recognizes that individual streets do not act independently of one another, but instead form a network that serves travel needs on a local and regional level. From highest to lowest intended usage, the functional classifications are: principal arterial, collector, and local streets. Roadways with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (i.e., mobility). Local roadways with lower intended usage have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations. The functional classifications are described below:

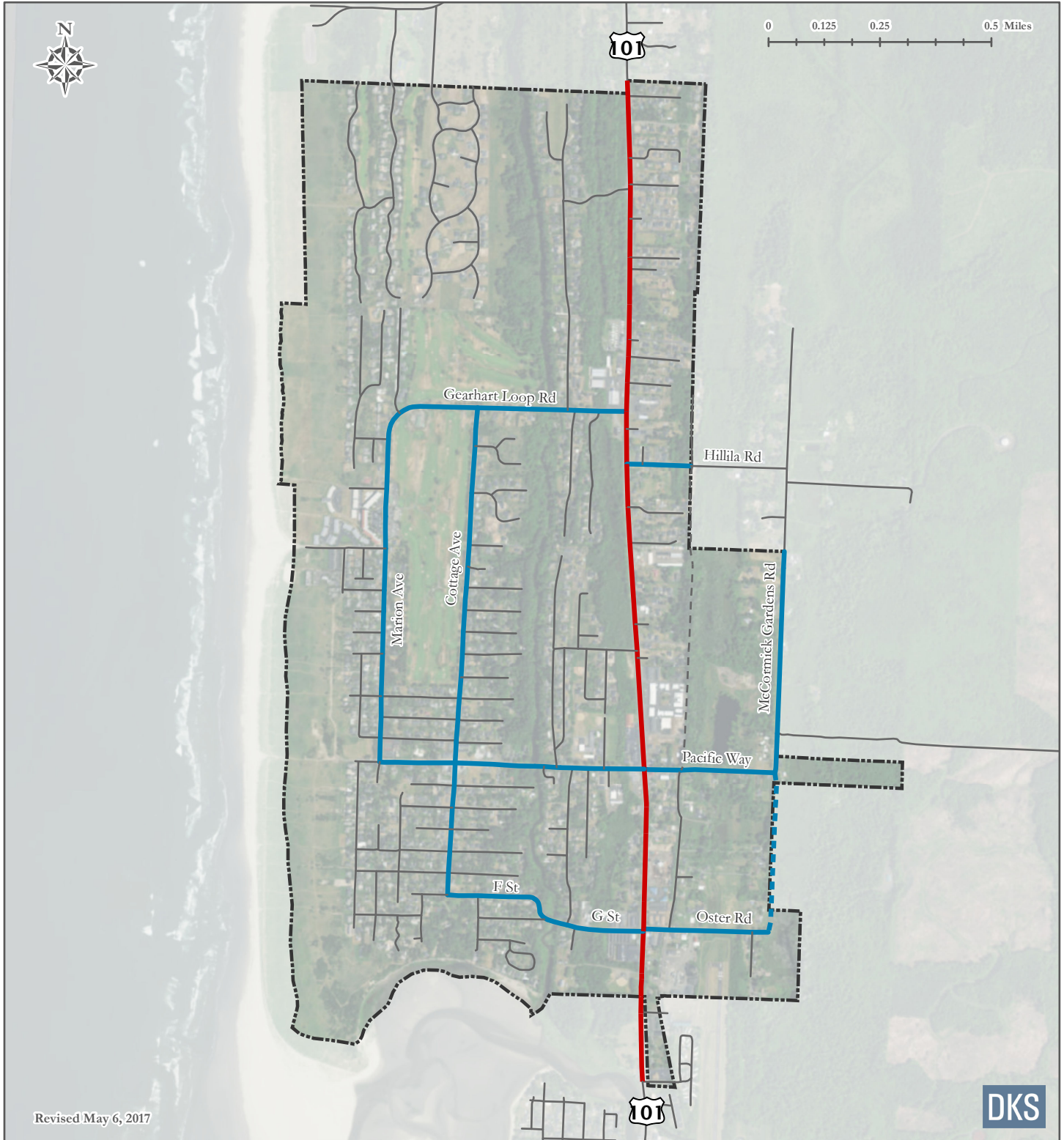
- **Principal Arterials** are state roadways. These roadways serve the highest volume of motor vehicle traffic and are primarily used for longer distance regional trips. The only roadway in the city classified as a principal arterial is US 101.
- **Collectors** connect many parts of the city and often serve traffic traveling to and from principal arterials. These roadways provide greater accessibility to neighborhoods, connect to major activity generators, and provide efficient through movement for local traffic. In Gearhart, portions of Gearhart Loop Road, Hillila Road, Pacific Way, F Street, G Street, Oster Road, Marion Avenue, Cottage Avenue, and McCormick Gardens Road are collectors.



# The Standards



- **Local Streets** provide more direct access to residences without serving through travel. These roadways are often lined with homes and are designed to serve lower volumes of traffic. Streets in Gearhart that are not classified as Principal Arterials or Collectors are classified as Local Streets.



Revised May 6, 2017



**Legend:**

**Functional Classification**

| Existing | Planned (Conceptual Alignments) |                            |
|----------|---------------------------------|----------------------------|
|          |                                 | Principle Arterial Streets |
|          |                                 | Collector Streets          |
|          |                                 | Local Streets              |

Urban Growth Boundary

# The Standards

## Emergency Routes

Figure 9 shows designated Lifeline Routes and tsunami assembly areas in Gearhart, along with current bridge locations.

### Lifeline Routes

The Oregon Highway Plan (OHP) Goal 1, Policy 1E has designated 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 provides traffic flow through the state and to each region. The Tier 2 lifeline routes provide additional connectivity and redundancy to the Tier 1 lifeline system. The Tier 2 system allows for direct access to more locations and increased traffic volume capacity, and it provides alternate routes in high-population regions in the event of outages on the Tier 1 system. The Tier 3 lifeline routes provide additional connectivity and redundancy to the lifeline systems provided by Tiers 1 and 2.

US 101 is the only Lifeline Route in Gearhart, designated as Tier 3.

### Tsunami Evacuation Routes

The Oregon Department of Geology and Mineral Industries (DOGAMI) has published a tsunami evacuation plan for Gearhart. This plan (included in Volume 2, Section E) details the projected tsunami inundation area, evacuation routes, and evacuation assembly areas. Evacuation signs have been installed along streets to indicate the direction inland or to higher ground.

Most of Gearhart is within the inundation area for the largest projected local tsunami. The inundation zone for this worst-case tsunami event extends east of McCormick Gardens Road.

However, the DOGAMI evacuation plan also identifies optional high ground areas west of US 101 that are expected to remain dry in 95 percent of tsunami scenarios analyzed (see Volume 2, Section

#### Lifeline Routes:

US 101 is the only Lifeline Route in Gearhart, designated as Tier 3 in the Oregon Highway Plan.

# The Standards

E). These areas provide evacuation options for situations and individuals where distance, mobility and other factors would preclude reaching the high ground east of McCormick Gardens Road within the arrival time of the local tsunami. DOGAMI has recently produced more detailed time and distance tsunami evacuation modeling for Gearhart. This modeling and accompanying map products will facilitate more comprehensive and specific evacuation planning and the identification of needed system improvements.

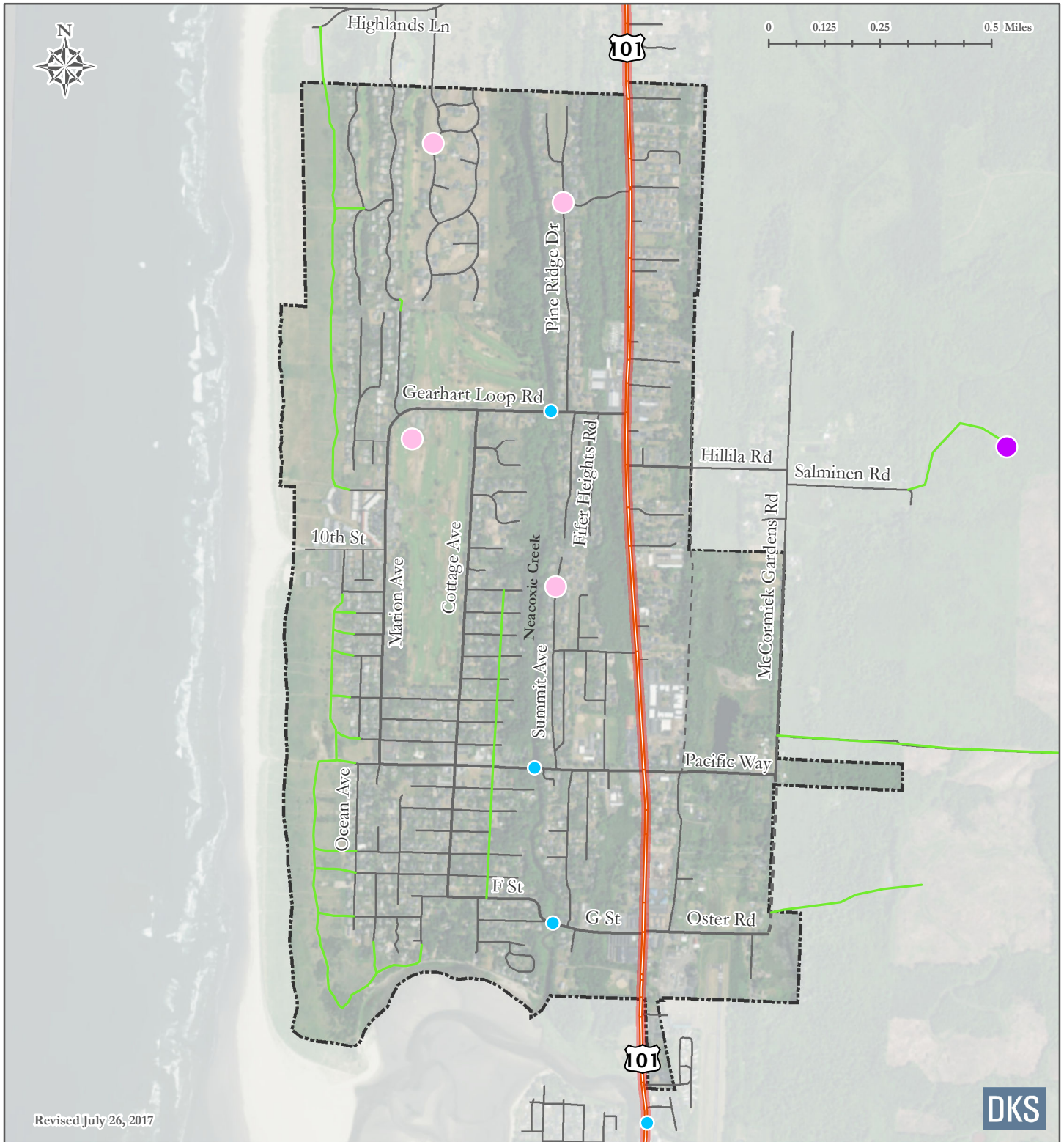
Some key routes to tsunami assembly areas include Gearhart Loop Road Hillila Road, Pacific Way, F and G Street, Marion Avenue, Summit Avenue, Fifer Heights Road, Pine Ridge Drive, Sheridan Court and High Ridge Road.

## Bridges

There are no bridges within the Gearhart Urban Growth Boundary, although there are three culverts over Neacoxie Creek. The culverts are located along Gearhart Loop Road, Pacific Way, and G Street, with these crossings being the only connections between US 101 and the west side of the city. There are also two bridges along US 101 over Neawanna Creek and Mill Creek just south of the city, providing the only connection between Gearhart and Seaside. The bridge along US 101 over Neawanna Creek, south of Lewis and Clark Road is flagged as functionally obsolete. The bridge does not provide shoulders for bicycle travel.







Revised July 26, 2017

DKS

**Legend:**

**Emergency Response Routes**

ODOT Tier 3 Lifeline Route

Tsunami Assembly Area

Urban Growth Boundary

Optional Tsunami Assembly Area

Arterial or Collector Street

Bridge or Culvert

Trails



# The Standards

## Typical Street Cross-section Standards

Figures 10 to 12 and Table 2 include typical standard cross-section types for city roadways, with guidelines for constrained areas where design elements may need to be reduced shown in Table 3.

Figures 11 and 12 show the cross-section options for local streets. A standard local street is applicable in all areas of the city, while the local queuing street is only available in residential areas.

Queuing streets should be designed so that moving cars must occasionally yield between parked cars before moving forward, as shown in the sidebar images, allowing for the development of narrow streets, encouraging vehicles to move slower, and allowing for periodic areas where a 20-foot wide clear area is available for parking of fire apparatus. Queuing streets require placement of no-parking locations (i.e., driveways, fire hydrants, mailboxes) at appropriate intervals to provide the needed gaps for queuing opportunities. Also, parking near intersections on narrow streets should not be permitted because it can interfere with the turning movements of large vehicles.

US 101, the city's only principal arterial, is subject to the design criteria in the state's Highway Design Manual. The city preferred cross-section for US 101 includes a three-lane configuration, with additional lanes at intersections as needed. The three-lane configuration would have one travel lane in each direction, a center turn lane and bike lanes. The preferred cross-section would also include a shared-use path on the east side of US 101 through Gearhart, with an additional sidewalk on the west side in areas with development or bus stops. A minimum 6-foot wide landscape strip/ drainage area is desired between the roadway and shared-use path or sidewalk.

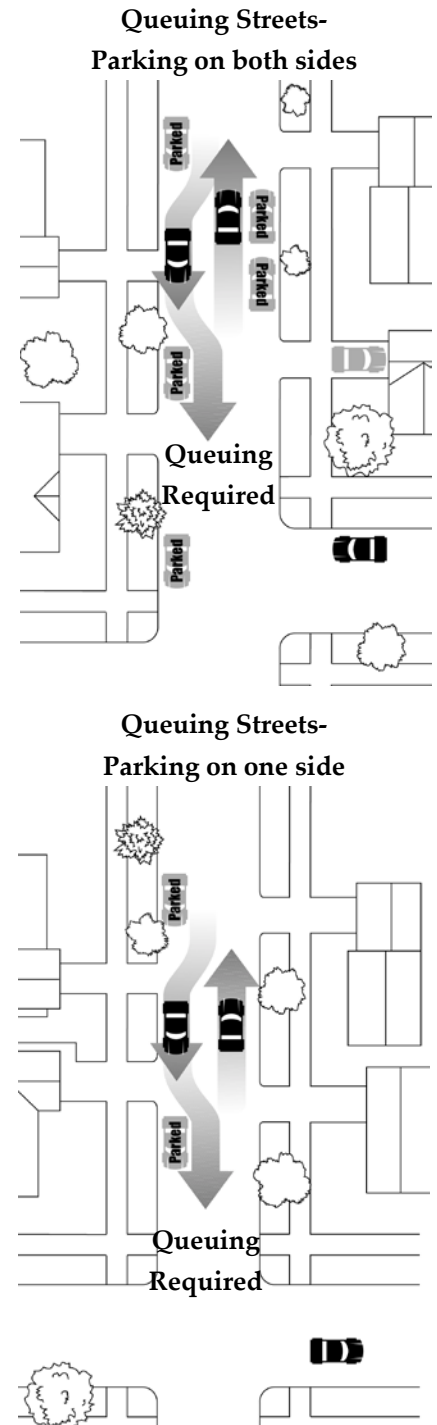
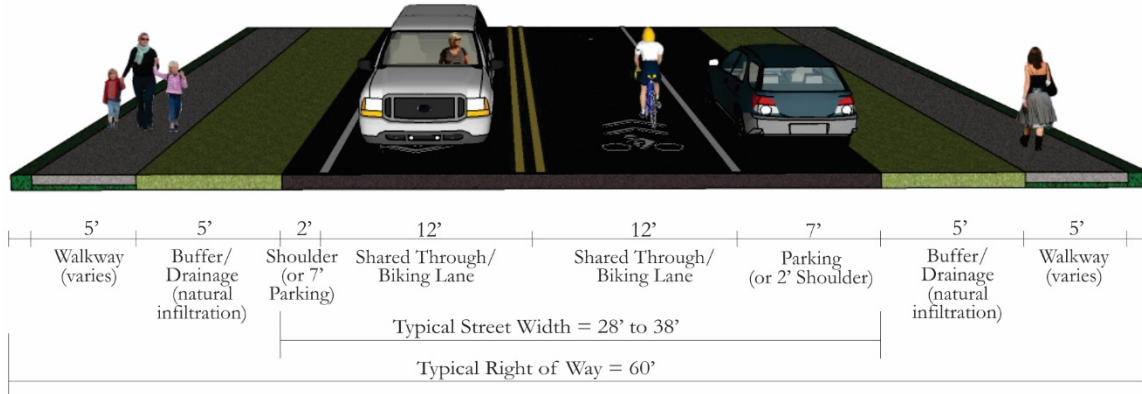


Image source: State of Oregon

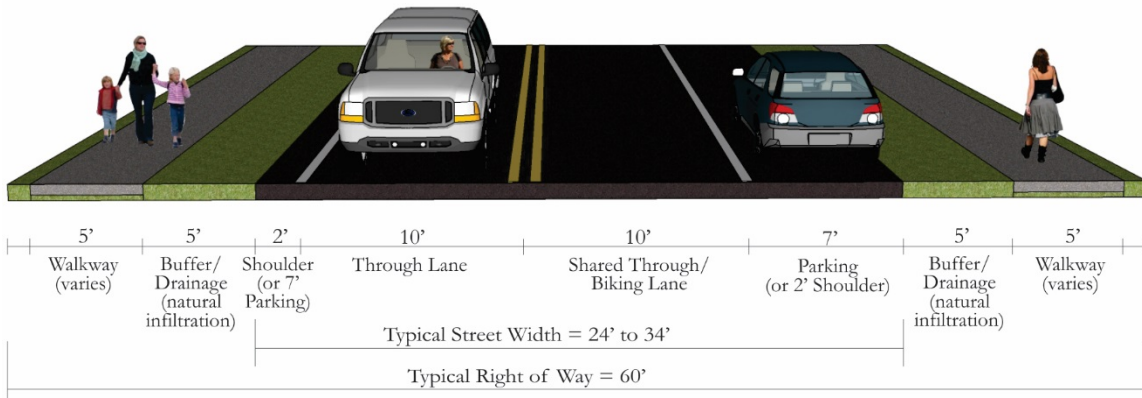
# The Standards

**Figure 10: Collector Street**

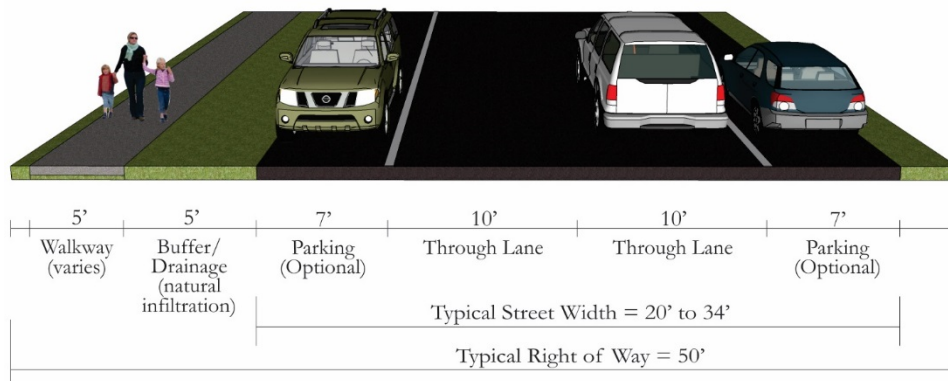
## Designated Shared Street



## Non-Designated Shared Street



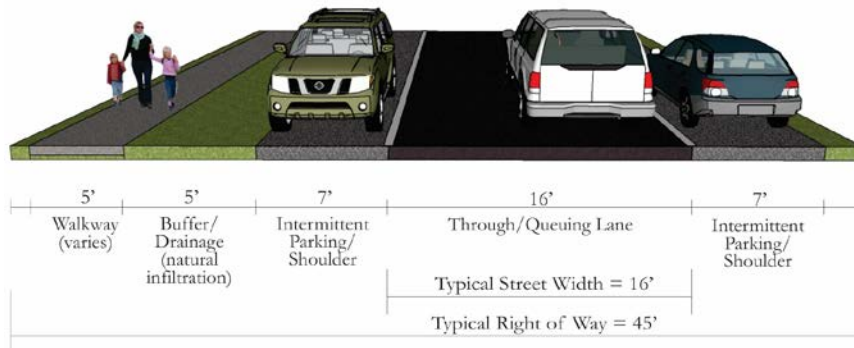
**Figure 11: Local Street**



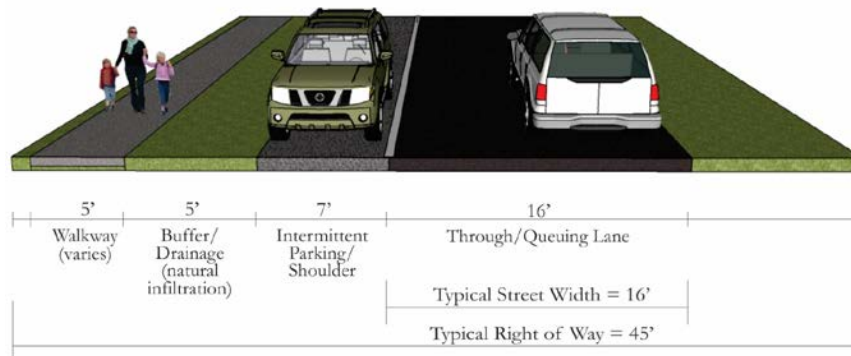
# The Standards

**Figure 12: Local Queuing Street (Residential Area Only)**

## Intermittent Parking on Both Sides



## Intermittent Parking on One Side



**Table 2: Typical Street Cross-section Standards**

|                    | Principal Arterial | Collector*                                      | Local Street*              | Local Queuing Street*  |
|--------------------|--------------------|---|----------------------------|--|
| Through Lane       |                    | Two 12- foot lanes**                            | Two 10- foot lanes         | One 16-foot lane   |
| Parking / Shoulder | N/A                | 2-foot shoulder or 7-foot parking on both sides | Optional 7-foot parking    | Required 7-foot parking lane / shoulder on at least one side to allow vehicles to pass |
| Buffer / Drainage  |                    | 5-foot buffer                                   | 5-foot buffer              | 5-foot buffer  |
| Walkway*           |                    | 5-foot walkway on both sides                    | 5-foot walkway on one side | 5-foot walkway on one side   |

\* Any street that serves as a primary evacuation route to tsunami assembly areas must include a 5-foot walkway on both sides or a 12-foot shared-use path.

\*\* The typical through lane width along a Collector that is not designated as a shared street is 10 feet.

# The Standards

## Constrained Street Option

The construction of some streets may be constrained by challenging topography or environmentally sensitive, historic, or developed areas. These streets may require modified designs to allow for reasonable construction costs. Guidance for modifications to the standard designs is provided in Table 3. Any modification of a standard design requires approval of a variance prior to construction.

**Table 3: Constrained Street Design Options**

|                            | Principal Arterial | Collector | Local Street | Local Queuing Street |
|----------------------------|--------------------|-----------|--------------|----------------------|
| Minimum Through Lane Width | N/A                | 10 feet*  | 10 feet      | 16 feet**            |
| Minimum Buffer Width       |                    | 4 feet    | 4 feet       | 4 feet               |

\* The minimum through lane width along a shared street should be maintained at 12 feet where feasible.  
\*\* A queuing street must include an intermittent 7-foot parking lane/ shoulder on at least one side to allow vehicles to pass.

## Walking and Biking Design Standards

The following sections detail various walking and biking standards and treatment guidelines.

### Walking and Biking Facilities

As shown in Figures 10 to 12, the city roadway design standards require a minimum five-foot clear throughway for walking along both sides of collector streets and along one side local streets. The walkway may be a natural surface path, sidewalk or shared-use path. Shared streets for bikes are designated throughout the city (see Figure 7) and will include pavement markings/ signage.



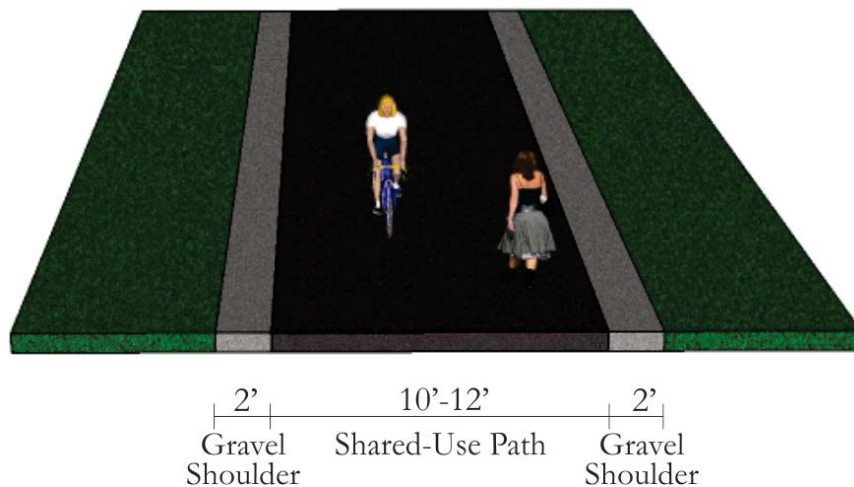
# The Standards

## Shared-Use Paths

Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and transportation needs. Shared-use path designs vary in surface types and widths. Hard surfaces are generally better for bicycle travel. Widths need to provide ample space for both walking and biking and should be able to accommodate maintenance vehicles.

Gearhart requires that a paved shared-use path be 12 feet wide in areas with significant walking or biking demand; otherwise, it should be at least 10 feet wide (see Figure 13). The city may reduce the width of the typical paved shared-use path to a minimum of eight feet in constrained areas (e.g., steep, environmentally sensitive, historic, or previously developed areas). This design standard applies to newly constructed facilities and does not apply to existing shared-use paths (e.g., Ridge Path).

**Figure 13: Design Standards for Shared-Use Paths**



# The Standards

## Roadway and Access Spacing Standards

Access management is a broad set of techniques that balance the need to provide for efficient, safe, and timely travel with the ability to allow access to individual destinations. Appropriate access management standards and techniques can reduce congestion and accident rates, and may lessen the need for construction of additional roadway capacity.

Table 4 identifies minimum public roadway intersection and minimum private access spacing standards for streets in Gearhart. New roadways or redeveloping properties must comply with these standards to the extent practical, as determined by the city. As the opportunity arises through redevelopment, streets not complying with these standards could improve with strategies such as shared access points, access restrictions (through the use of a median or channelization islands), or closure of unnecessary access points, as feasible.

Like street design and mobility targets, access spacing standards for US 101 are determined by ODOT. ODOT spacing standards are defined in the Oregon Highway Plan, OAR 734-051, and ODOT’s Highway Design Manual.



**Table 4: Street and Access Spacing Standards**

|   | Principal Arterial      | Collector | Local Street |
|---|-------------------------|-----------|--------------|
| Maximum Block Size (Public Street to Public Street)                           | See Oregon Highway Plan | 530 feet  | 530 feet     |
| Minimum Block Size (Public Street to Public Street)                           |                         | 265 feet  | 265 feet     |
| Minimum Driveway Spacing (Public Street to Driveway and Driveway to Driveway) |                         | 130 feet  | None         |

Note: all distances measured from center to center of adjacent approaches.



# The Standards

## Mobility Targets

Mobility targets for streets and intersections in Gearhart provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Two methods used to gauge operational conditions for motor vehicles include volume-to-capacity (v/c) ratios and level of service (LOS).

- **Volume-to-capacity (v/c) ratio:** A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. The ratio is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance.
- **Level of service (LOS):** LOS is a “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay is excessive and demand exceeds capacity, typically resulting in long queues and delays.

Assuming Gearhart grows in accordance with its current adopted land use plan and travelers continue to rely heavily on private autos for their trips, US 101 through the city will not be able to meet ODOT’s v/c ratio-based mobility targets. In this situation (which is common in communities with roadways that experience high travel demands), adoption of alternative mobility targets is appropriate. Alternative mobility targets reflect realistic expectations for roadway performance at the end of the 20-year



# The Standards

planning horizon, based on traffic projections. Adopting realistic alternative targets relieves the state and local governments from having to limit development or make investments to comply with targets they cannot possibly achieve.

ODOT and Gearhart could consider adopting alternative mobility targets as part of a long-term strategy for this corridor that would shift the focus to maintaining efficient operations during the non-summer months. This approach would continue to serve traffic well during the majority of the year, and acknowledges that traffic conditions during the peak three to four summer months will be more congested. The segments of US 101 to the north and south of Gearhart, between Patriot Way and Surfspines Road to the north and through Seaside to the south, have alternative mobility targets based on non-summer months (i.e., average weekday) that have been adopted by the Oregon Transportation Commission.



## Mobility Targets for Gearhart

All streets and intersections owned by Gearhart must operate at or below the following mobility targets.

### **Signalized, All-way Stop, or Roundabout Controlled**

**Intersections:** The intersection as a whole must operate with a Level of Service (LOS) “D” or better 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).

**Two-way Stop and Yield Controlled Intersections:** All intersection approaches serving more than 20 vehicles 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) shall operate with a LOS “D” or better. LOS “E” is acceptable for movements at intersections serving no more than 20 vehicles during the peak hour.

# The Standards

- **State-owned roadways** must comply with the mobility targets included in the Oregon Highway Plan. Because constraints make widening US 101 impractical, and the city prefers a three-lane configuration, conditions on US 101 in Gearhart will likely exceed currently adopted mobility targets. The city will need to work with ODOT to establish an alternative mobility target for US 101 that reflects the performance that is forecast based on no significant capacity improvements over the planning horizon.

## Transportation Impact Analysis (TIA) Guidelines

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Gearhart Transportation Impact Analysis (TIA) requirements implement Sections 660-012-0045(2)(b) and -0045(2)(e) of the State Transportation Planning Rule (TPR). These sections require the city to adopt mobility targets and a process to apply conditions to land use proposals in order to minimize impacts on and protect transportation facilities.

Volume 2, Section K includes the city's required content for a Transportation Impact Analysis (TIA). In general terms, the TIA applies to developments that are presumed to have a transportation impact.

A professional engineer must prepare the TIA and must use appropriate data, methods, and standards as documented in the Gearhart Guidelines for Transportation Impact Analysis.

### Transportation Impact Analysis:

Gearhart Guidelines for Transportation Impact Analysis are included in TSP Volume 2, Section K.

# The Outcome

**H**ow will the constrained investment recommendations in the TSP improve the performance of the transportation network in Gearhart? To answer this question, the TSP evaluated investment decisions and compared them to anticipated trends through 2040.

## The Improved Transportation System

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Gearhart expects the following results from the TSP by 2040:

- **Safer Streets:** Added turn lanes, improved intersection geometrics and traffic control, and managed travel speeds will make roadways in Gearhart safer.
- **Increased congestion on US 101:** While streets in 2040 will have available capacity to support growth, traffic volumes will be higher, and congestion will be worse than it is now. That said, strategic improvements will make US 101 safer and more accommodating for all modes of travel.
- **Enhanced transit stop amenities:** Increased amenities at bus stops will enhance travel convenience and comfort via transit.
- **More walking and biking facilities:** More residents and visitors will be able to walk and bike to destinations in Gearhart on an expanded walking and biking network.
- **Greater street connectivity:** As areas of the city develop, new streets will provide increased motor vehicle, pedestrian, and bicycle connectivity.



# The Outcome

## To the Horizon and Beyond

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The 2017 Gearhart TSP has not resolved all the of the city's transportation issues. The following require additional exploration.

### Potential Additional Funding Sources

Based on the identified funding gap, Gearhart may wish to consider expanding its funding options in order to fund more of the desired improvements in a timely manner. Other cities and counties use one or more of the following sources to fund the capital and maintenance aspects of their transportation programs. A variety of factors affect use of these sources, including the willingness of local leadership and the electorate to burden citizens and businesses with taxes or fees, the availability of local funds the city can dedicate or divert to transportation issues from other competing city programs, and the availability of state and federal funds. The city should consider opportunities for providing or enhancing funding for the transportation improvements included in the TSP.



- **Road District Tax:** Gearhart has a road taxing district that charges property owners in Gearhart \$0.0602 per \$1,000 in assessed value (as of March 2017). However, it has no escalation factor to cover inflation. The city may wish to increase the current road district tax based on the transportation needs established in the TSP. Any change to the road district tax will likely require voter approval.
- **System Development Charges:** System development charges (SDC) are fees collected from new development and used as a funding source for all capacity adding projects for the transportation system. The fee is based on the proposed land use and size, and is proportional to each land use's potential PM peak hour vehicle trip generation. If an SDC is desired, a rate study would be required to determine appropriate fees based on capacity projects costs, growth potential, and local preferences.

# The Outcome

- **Transportation Utility Fee:** A transportation utility fee is a recurring monthly charge that could be paid by all residences and businesses within the city. The city can base the fee on the estimated number of trips a particular land use generates or as a flat fee per residence or business. This fee is typically collected through regular utility billing, however, it could be collected as a separate stand-alone bill. Existing law places no express restrictions on the use of transportation utility fee funds, other than the restrictions that normally apply to the use of government funds. Some local agencies utilize the revenue for any transportation related project, including construction, improvements and repairs; however, many choose self-imposed restrictions or parameters on the use of the funds.
- **Transient Room Tax:** Gearhart imposes a local hotel tax which charges a transient room tax. None of the revenue is currently dedicated to transportation. The city may choose to dedicate some portion of the tax to transportation projects. This tax could place more of the cost burden for the transportation improvements in the city on non-residents.
- **Local Improvement District:** Local improvement districts (LIDs) can fund capital transportation projects that benefit a specific group of property owners. LIDs require owner/voter approval and a specifically defined project. Benefiting properties pay for the improvements through assessments. LID projects that benefit more than the adjacent properties can serve as match for other funds. Property owners pay fees through property tax bills over a specified number of years.
- **Debt Financing:** While not a direct funding source, debt financing is another funding method. Through debt financing, available funds can be leveraged and the cost can be spread over the projects useful life. Though interest costs are incurred, the use of debt financing can serve not only as





# The Outcome

a practical means of funding major improvements, but it is also viewed as an equitable funding source for larger projects because it spreads the burden of repayment over existing and future customers who will benefit from the projects. One caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations.

- **ODOT Statewide Transportation Improvement Program (STIP) Enhance Funding:** The Oregon Transportation Commission selects projects proposed by ODOT and local jurisdictions for STIP funding. Historically, only projects on the state highways were eligible for funding. ODOT has modified the selection process to allow funding for projects off the state system that enhance system connectivity and improve multi-modal travel options. The TSP prepares the city to apply for STIP funding.
- **ODOT Highway Safety Improvement Program (HSIP) Funding:** With significantly more funding under the HSIP and direction from the Federal Highway Administration to address safety challenges on all public roads, ODOT will increase the amount of funding available for safety projects on local roads. ODOT will distribute safety funding to each ODOT region, which will collaborate with local governments through the All Roads Transportation Safety (ARTS) Program to select projects that can reduce fatalities and serious injuries, regardless of whether they lie on a local road or a state highway.



## Technology Advancements

The TSP is a plan for conditions 20 years into the future; however, it cannot anticipate all advancements in technology or their impact on the way people travel to and within Gearhart.

Advancements may include alternative fuel sources that lower the cost of driving and operating transit service, connected vehicle technology that improves the safety and efficiency of roadways, proliferation of electric-assisted bicycles that take the effort out of

# The Outcome

traveling across hilly topography and expand the number of travelers who can make that choice of mode. The TSP recommends that the city continue to monitor opportunities arising from innovations in transportation technology and anticipate their impact on investment priorities.

## Detailed Analysis of Physical Constraints

All proposed improvements in this plan are conceptual. The plan has not analyzed these improvements for hydrologic, topographic, or other geological constraints, which could require substantial modifications. Detailed surveys need to precede construction of these improvements.

## Future Street Extensions

As property develops or redevelops in the future, several new streets that are not included as projects in this TSP are needed to enhance local connectivity and reduce the reliance on US 101 for local trips. This includes a street connection along the west side of US 101 to connect the city with Highlands Lane, a street connection along the east side of US 101, north of Hillila Road and the realignment of Hillila Road to connect with Gearhart Loop Road.

## Summer Congestion

Assuming Gearhart grows in accordance with its existing, adopted land use plan and travelers continue to rely primarily on private cars for transportation, US 101 in the city increasingly will become more heavily congested during the summer and other peak tourist times. Even if funding were available, any infrastructure project extensive enough to reduce congestion likely would have unacceptable impacts on the community. The state and Gearhart consequently, must handle the congestion by managing travel demand, enhancing local street connectivity, maximizing the efficiency of the existing transportation system, increasing walking, biking, and transit ridership, and other techniques. A safe, convenient, and attractive transportation system is critical to a successful future for Gearhart.



# The Outcome

## Tsunami Evacuation

Recent scientific research documents the historical occurrence of very large (magnitude 9.0+) earthquakes on the Cascadia subduction zone just off the Oregon coast. These mega quakes generate large tsunamis that arrive at the coastline in a short time, generally 15-20 minutes after the earthquake. Due to its low-lying topography, most of Gearhart is potentially subject to inundation from a tsunami generated by a Cascadia subduction zone earthquake. For this reason, the development of tsunami evacuation routes and improvements as a part of the local transportation system is critical to public safety. Current tsunami evacuation plans are conceptual in nature and public safety would be enhanced by a more detailed analysis of the current system and the identification and evaluation of needed system improvements.

The Oregon Department of Geology and Mineral Industries (DOGAMI) has produced detailed evacuation time and distance modeling for Gearhart that documents minimum travel speeds and routes to safety in order to evacuate from a locally generated tsunami. This modeling and accompanying map products provide the base data for a comprehensive evaluation of current evacuation conditions and the identification of needed improvements. This evacuation planning and analysis will also provide the basis for integrating evacuation considerations into other transportation system improvement decisions identified in the TSP. The TSP recommends that the city place a high priority on completing this evacuation system analysis and improvement planning.