Chapter 8. Transportation

8.1. Transportation Plan Context

The Transportation element identifies future system improvements derived from the analysis completed in the Port Orchard Capital Facilities Plan and the Kitsap County 2016 Comprehensive Plan Update draft. In addition to roadway improvements, this element also identifies ways to provide more opportunities for pedestrians, bicyclists and transit riders.

The policy direction within this element provides new nonmotorized transportation system links between residential areas and nearby employment and shopping areas. The objective of these policies is to reduce automobile dependence within the City and to minimize the need to widen roads to accommodate increasing traffic volumes.

The purpose and vision of the transportation policy element is to provide a safe, dependable, properly maintained, fiscally and environmentally responsible multi-modal transportation system that is consistent with and supports the other elements of the Comprehensive Plan. The transportation system should respect community character, environment, and neighborhoods; improve mobility and safety; minimize impacts from regional facilities; and promote increased use of transit and nonmotorized travel. The transportation system needs to be both locally and regionally coordinated, adequately financed, and community-supported.

The goals and policies identified in this element are based upon existing conditions information and transportation systems analysis contained in the Kitsap County produced joint jurisdiction Port Orchard/South Kitsap Sub-Area Plan and the 2016 Kitsap County Comprehensive Plan Update and Supplemental Environmental Impact Analysis drafts. The data collected, analysis conducted, and capital facilities and transportation planning provided in those environmental documents included supporting analysis and mitigation related to transportation facilities within the City, transportation impact analysis, proposed projects, performance standards, financial and implementation plan, and mitigation for the various alternatives considered. The document also incorporates the data, analysis, and updates provided in the Port Orchard Capital Facilities Plan 2013 update (Ordinance 028-13) and 2015 Transportation Impact Fee Rate Study (Ordinance 023-15).

8.2. Transportation Vision

The transportation network of the City of Port Orchard is meant to serve the land use of the community and seek to achieve the most efficient means of transporting people and goods. The City's transportation network shall support the land use of the community. However, the transportation network should not be the sole justification to increase land use densities. Therefore, in order to make consistent and sound land use decisions, the City will evaluate traffic modifications attributed to each land use change.

Transportation improvements are extremely expensive and time consuming. Unlike other public works improvements, there is normally not an identifiable revenue gain that can be attributed to the

road's completion. Road construction planning must accommodate the future needs of the community without the cost of excessively overbuilding the project.

Constructing a road to accommodate the ultimate build-out of a neighborhood is normally not economically feasible. When a project is proposed, the City needs to evaluate the immediate traffic needs, the needs after project completion and the ultimate anticipated volume. Financial constraints may call for phasing the project to allow immediate relief and allowing for future improvements as land use requirements increase.

Our vision for Port Orchard is a community which: offers an inviting, attractive and pedestrian-friendly waterfront atmosphere that provides a full range of retail and recreational activities while ensuring coordinated City and County regional Land Use Plans which promote a more efficient multimodal transportation system.

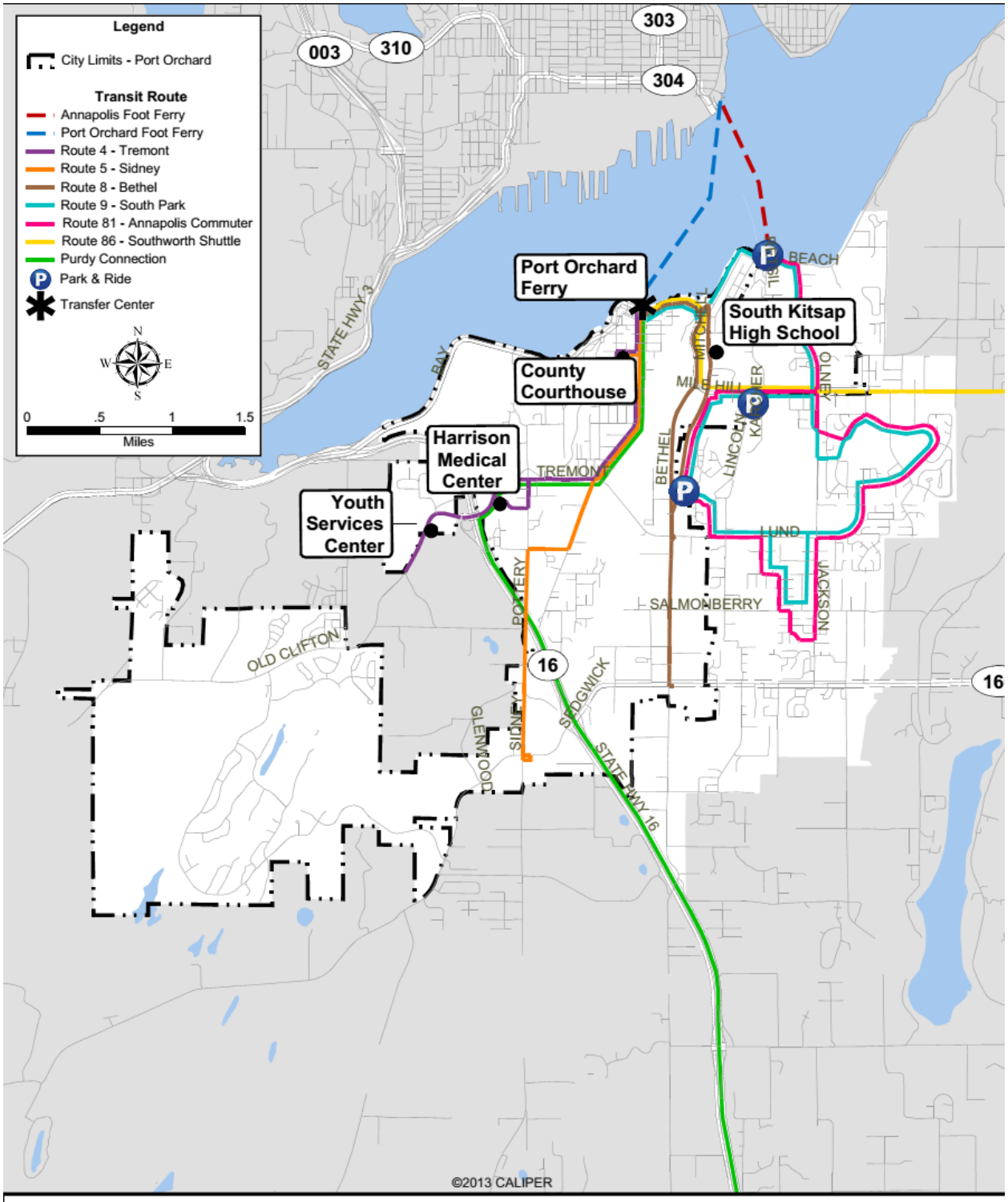


Figure 8-1

Existing Public Transit Routes

City of Port Orchard

8.3 Roadway Network

State System

Port Orchard lies along Sinclair Inlet across from Bremerton in the heart of the Kitsap Peninsula. The major north-south route within the County is SR 3 which passes through the community of Gorst, about a mile north of the City of Port Orchard. SR 16 connects with SR 3 at Gorst and passes through Port Orchard ending ultimately in Tacoma by way of the Narrows Bridge.

SR 16 is designated a Highway of Statewide Significance (HSS) that passes through the Port Orchard Planning Area. SR 16 is functionally classified as a Freeway by WSDOT, and the highway is rated on the Washington State Freight and Goods Transportation System (FGTS) as a T-1 facility carrying an estimated 10,400,000 tons in 2015 from the Pierce/Kitsap county line to the Gorst area. SR 16 serves freight, commuter, neighborhood, business, and recreational travelers. Within the planning area, interchanges with SR 16 are located at Tremont Street SW, and at SW Sedgwick Road (SR 160).

SR 16 is primarily a four-lane divided highway providing major regional access between Kitsap County and the transportation network of the Central Puget Sound area. SR 16 is a full control access highway within Kitsap County and links South Kitsap with Pierce County, eventually connecting to Interstate 5 in Tacoma. Near Gorst, after SR 166 joins SR 16, SR 16 becomes six lanes, where SR 16 joins SR 3 at Gorst, the number of lanes on SR 3 drops to four.

SR 160 (Sedgwick Road) is the east/west ferry commuter route, connecting Port Orchard with the Southworth ferry terminal, SR 16, and eventually with SR 3. This highway has two lanes with minimum access spacing of 330 feet. SR 160 is the primary route from SR 16 to the Southworth Ferry Terminal.

SR 166 (Bay Street) runs from SR 16 along the City of Port Orchard waterfront to the east city limits. The road was previously designated SR 160, but in 1992 SR 160 was moved to its present location on Sedgwick Road and SR 166 was formed. The route includes Bay Street from SR 16 to Bethel Avenue, Bethel Avenue from Bay Street to SE Mile Hill Road, and SE Mile Hill Road from Bethel Avenue to the east city limits.

Port Orchard is also connected to the Seattle metropolitan area by the Washington State Ferry system. The Southworth ferry terminal is connected to Port Orchard by SR 160 and County roads. The Bremerton Ferry terminal is connected to Port Orchard by SR 304, SR 3, SR 16, and SR 166. However, the Kitsap Transit ferry provides direct pedestrian access timed to meet the Seattle/Bremerton Ferry.

Kitsap County Roads

Minor county arterial roads serve as key elements in the county transportation system. These minor arterial roads link together state routes or connect the state route system to Port Orchard, to other major centers, and to the ferry system. For example, Bethel Road is a two lane north/south road located in eastern Port Orchard. As a north/south road, Bethel Road connects and intersects with Sedgwick Road, Lund Avenue, and SR 166. Bethel Road terminates in Port Orchard at Bay Street. Kitsap County roads and Port Orchard roads have been identified and analyzed within the joint Port

Orchard/South Kitsap Sub-Area Plan and the 2006 Kitsap County Comprehensive Plan 10-Year Update and Environmental Impact Analysis.

City Street Network

A city's functional classification system provides a planning guide for the development of a transportation network which will serve the needs of a community's growth for the future. Streets within a transportation network must be managed for specific roles in moving people and goods through the City and surrounding region. The functional classification system identifies the role of each street and provides a simplified vision of management needs for each type, including safety, adjacent land uses, multimodal travel demands, and other connecting transportation systems. Ultimately the functional class of each street determines the typical roadway design, cross-sectional parameters, and design speed, while providing a basis for management practices to minimize conflicts between travel modes.

The City of Port Orchard has defined its functional classification system to be consistent with the Federal Functional Classifications (FFC) provided by the Federal Highway Administration (FHWA) and the arterial functional classifications defined in the Kitsap County Revised Road Standards. These arterial streets qualify for financial assistance under federal or state programs. Table 8-1 identifies the City's functional classes and includes a short description of each classification.

The City's existing arterial network and associated functional classifications are shown in Figure 8-1.

Table 8-1. Street Functional Classifications

Functional Classification	Description
Freeway	High capacity, high speed, regional connections. Maximum mobility with full access control
Principal Arterial	Provide connectivity between different areas of a region. High mobility with partial access control
Minor Arterial	Provide connectivity between different areas of a region. Moderate mobility w/partial access control.
Collector	Collect traffic from local streets and other collectors. Connect neighborhoods to each other and to arterials.
Local Access	Provide direct access to properties in residential, commercial or industrial areas.

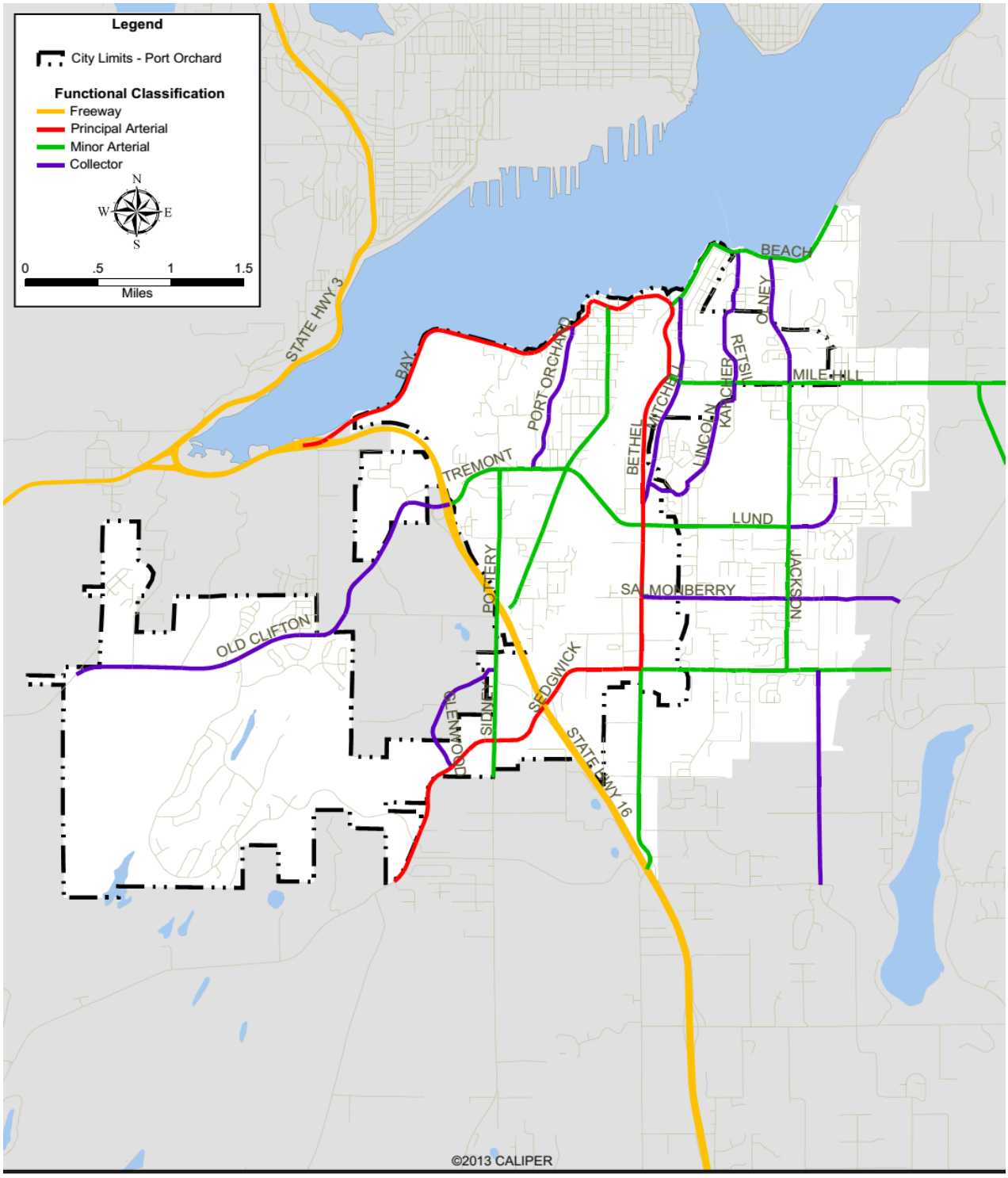


Figure 8-2

Existing Street Functional Classifcation

City of Port Orchard

8.3.1 Airport and Aviation Services

Port Orchard is serviced by two airports. One is a privately-owned general aviation facility about 5 miles southwest of the City called the Port Orchard Airport. The second is the Bremerton National Airport (BNA), owned and operated by the Port Of Bremerton. BNA is a general aviation facility serving the communities on the Kitsap and Olympic Peninsulas.

As of 2014, there were 192 aircraft based at the Bremerton National Airport, ranging from ultralight to multi-engine planes. One fixed base operator provides various but limited training, fuel and convenience services. Total annual operations for 2014 were 66,000, or an average of 181 per day. BNA serves beginning amateurs as well as professional pilots and flights.

The Bremerton National Airport Master Plan forecasts 276 BNA-based aircraft by 2032, an increase of 44 percent from 2014. Total annual operations are expected to increase similarly, from 66,000 to 90,500. This forecast assumes that the airport will continue its role as the only FAA-funded airport in Kitsap County and support most of the FAA-registered aircraft in the county.

The airfield consists of one operational runway (02/20) that is oriented north-northeast/south-southwest. Runway 2/20 is 6,000 feet long and 150 feet wide. BNA has extensive lighting and instrumentation and a taxiway system that provides access to all areas of the airfield. BNA's former crosswind runway (16/34) is closed to aircraft and currently serves as the Bremerton Motorsports Park facility.

Until 2004, BNA was a Part 139 Certified Airport authorized to serve US Department of Transportation-certified commercial air carriers with more than 30 passengers. The airport could seek to renew this certification in the future if demand requires. For planning purposes, the future operations are forecasted to continue to be dominated by business-oriented flights, private planes, flight training or other forms of noncommercial activity using single- and multi-engine piston aircraft.

The BNA Master Plan recommends an expanded taxiway system to accommodate new aviation-related development. It also identifies locations for future hangar expansion and other aviation-related development, including the redevelopment of the former crosswind runway (16/34).

8.3.2. Freight and Rail Services

Freight and goods are transported within the Port Orchard area on SR 16, SR 166 and SR 160, on City and County roads, and on the Burlington Northern Santa Fe Railroad (BNSF)

The BNSF Railroad provides rail service to Kitsap County. Freight use is restricted to the U.S. Military by agreement. The U.S. Navy owns the rails from Shelton to Puget Sound Naval Shipyard and on to Bangor. The railroad is maintained as Federal Railway Administration Class 3 on a scale of 1 (low) to 6 (high). Burlington Northern Railroad provides one train per day service. At its closest point, the railroad right of way passes through the community of Gorst, about five miles north of the City of Port Orchard.

In Washington State, the highway and roadway system is rated according to the amount of freight and goods that are carried by truck on the system. The Washington State Freight and Goods

Transportation System (FGTS) is a ranking of roads in Washington State by annual gross freight tonnage carried. The FGTS classification system is as follows:

- T-1: Over 10 million tons per year
- T-2: Between 4 and 10 million tons per year
- T-3: Between 300,000 and 4 million tons per year
- T-4: Between 100,000 and 300,000 tons per year
- T-5: At least 20,000 tons carried in a 60-day period and less than 100,000 tons per year

The FGTS system is affected by changes in the economy, international trade, and the transportation industry such as changes in truck travel patterns, cargoes and tonnages. Revisions to the FGTS routes and tonnage classifications are developed by the agency having jurisdiction over the roadway segment. The following freight routes are designated within the Port Orchard planning area:

a. SR 16 (Pierce/Kitsap Co. line to Gorst) is designated a T-1 facility carrying 10,400,000 tons annually in 2015;
b. SR 160 (Sedgwick Road between SR 16 and Bethel Road) is designated a T-3 facility, carrying an estimated annual 2,060,000 tons in 2015;
c. SR 166 is designated a T-3 facility, carrying an estimated annual 1,760,000 tons in 2015.
d. Designated T-3 routes include:
    1. Bethel Road from South City Limits to North City Limits
    2. Sidney Avenue from Tremont Street to SR 166
    3. Sidney Road from SE Hovde Road to South City Limits
    4. Tremont Street from SR 16 to East City Limits
    5. Glenwood Road from South City Limits to SW Sedgwick Road
    6. SW Sedgwick Road from Glenwood Road to SR 16
    7. Mitchell Road SE from Bethel Road to East City Limits
    8. SE Lund Avenue from Sidney Avenue to East City Limits
e. One designated T-4 route is Port Orchard Boulevard from Tremont Street to SR 166.

8.3.3. Non-Motorized Transportation Facilities

Non-motorized transportation systems include facilities that provide for safe pedestrian and bicycle travel. These include sidewalks, crosswalks, off street trails, bike routes, and bike lanes. In rural areas, non-motorized facilities can also include roadway shoulders when they are of adequate width.

Some portions of non-motorized routes can be used for commuting purposes to reduce potential vehicular traffic volumes. If properly located, designed and maintained, non-motorized trails can accommodate a significant portion of local resident travel between residential areas and shopping centers, schools, and places of employment. Non-motorized facilities also provide access to public transit and in this way can help decrease the reliance on single occupant vehicle (SOV) travel. When properly planned and constructed, non-motorized facilities are shown to increase the desirability of a City as a place to live and work.

Safe walking and bicycling environments within Port Orchard are a major concern of citizens, whether they are avid or casual recreational walkers or cyclists or bicycle commuters. In many cases,

pedestrians and cyclists must share narrow high-volume streets with bicycles and motor vehicles of all sizes. They cross busy intersections with multiple conflict points.

The City can take measurable steps with this Transportation Element toward the goal of improving every citizen's quality of life by creating a safer walking and biking environment. This plan proposes a strategy for implementing a priority system for physical improvements through grants and competitive funding sources.

The facilities map in Figure 8-3 illustrates the extent of the nonmotorized transportation system and the type of facility that each segment supports. It also shows the adopted centers of local importance, parks, and schools.

The adoption of this plan does not preclude the implementation of pedestrian and bicycle infrastructure on other streets. The plan acknowledges fiscal constraints and impracticality of building new sidewalks, bicycle infrastructure, and other improvements on every street in Port Orchard. Routes designated here should be prioritized due to their potential to fulfill the needs of the community and the citywide connections they will provide.

Existing Pedestrian Facilities

There are an assortment of pedestrian facilities located throughout Port Orchard and its UGA. Pedestrian facilities include sidewalks, trails and designated crosswalks. The majority of sidewalks are located along commercial corridors and in some neighborhoods. Sidewalks and designated crosswalks are provided in some residential subdivisions including Flower Meadows, Leora, and Indigo Point. These pedestrian facilities are typically the responsibility of the developer and are provided as part of plat development. Sidewalks are generally promoted throughout the commercial areas such as the Bethel Corridor, creating a grid-system for pedestrians, although many of the streets outside the commercial area have paved or gravel shoulders rather than sidewalks.

The non-motorized network has missing links around some elementary and secondary schools. Many of the schools are located in residential neighborhoods. Continuous sidewalks would improve the safety and utility of the pedestrian environment for elementary and secondary school children to walk to and from school.

In the past, many of the roads in Port Orchard were constructed to a rural standard with no curb or sidewalk improvements or provisions for safe pedestrian travel. Recent roadway reconstruction projects have provided storm drainage, curbs, and sidewalk improvements, particularly along major streets providing access to schools, parks, and the downtown business district. Sidewalks have also been constructed on many local streets in concert with new development within the City. Curb ramps to allow barrier-free access to sidewalks at street crossings have also been installed at many locations. The City created an inventory of the locations of these facilities in 2011 in order to determine where further improvements are needed to provide for mobility by persons with disabilities.

Existing Trails

Nonmotorized transportation systems also include separated or off-road recreational trails. A portion of these trail corridors can also satisfy local access needs between residential areas and parks, schools, commercial and employment areas depending on the trail locations.

At present, there are no formal separated trails within Port Orchard, however, there are informal trails throughout the City. Kitsap County initiated the development of the Mosquito Fleet Trail, which will ultimately include approximately 100 miles of pedestrian and bicycle trails that will link open spaces throughout Kitsap County in an interconnected system. The trail system will include a combination of on-street (sidewalks, bike lanes, shoulders, separated paths) and off-street (off-road trail) facilities. The Mosquito Fleet Trail Master Plan, completed in 2001, identifies the primary corridor through Port Orchard following SW Bay Street and Beach Drive. From Dogwood Hill Road to Kitsap Street, the Master Plan proposes a separated path on the shoreline side of the road. From Kitsap Street to Bethel Avenue, bicycle lanes are recommended. Through downtown Port Orchard (Port Orchard Avenue to Harrison Avenue), bicycle lanes are recommended, but will require eliminating either the center turn lane or on-street parking from one side. From Sidney Avenue to Mitchell Point, a separated path was recommended on the shoreline side. From Mitchell Point to Olney Avenue, paved shoulders were recommended. Through coordination with the Kitsap County Parks and Recreation, a separated path could be developed from Retsil Road to Olney Avenue by utilizing property at the Annapolis Recreation Area.

The City has proposed a number of north-south off-road trails that would link to the Mosquito Fleet Trail. These include the Ross Creek Trail, Center City Trail, and Blackjack Creek Trail. The Ross Creek Trail would connect Bay Street to Tremont Street SW, following the Ross Creek watershed. The City Center Trail would connect Bay Street to Pottery Avenue, following Port Orchard Boulevard for most of its length. The Blackjack Creek Trail would eventually include a trail along the entire Blackjack Creek watershed, from Bay Street to the intersection of Sedgwick Road and Highway 16.

The Kitsap Peninsula Water Trail includes launches and amenities at the Port Orchard Marina, Water Street Boat Launch, and Retsil Boat Launch. Port Orchard is also part of the Cascadia Marine Trail, which is a National Recreation Trail and one of only 16 National Millenium Trails designated by the White House.

Existing Bicycle Facilities

Today, there are few dedicated bicycle facilities and no dedicated bicycle lanes on streets within Port Orchard. In the past, cyclists within the Port Orchard Planning Area either rode in the lane of traffic, on available road shoulders, or on City sidewalks.

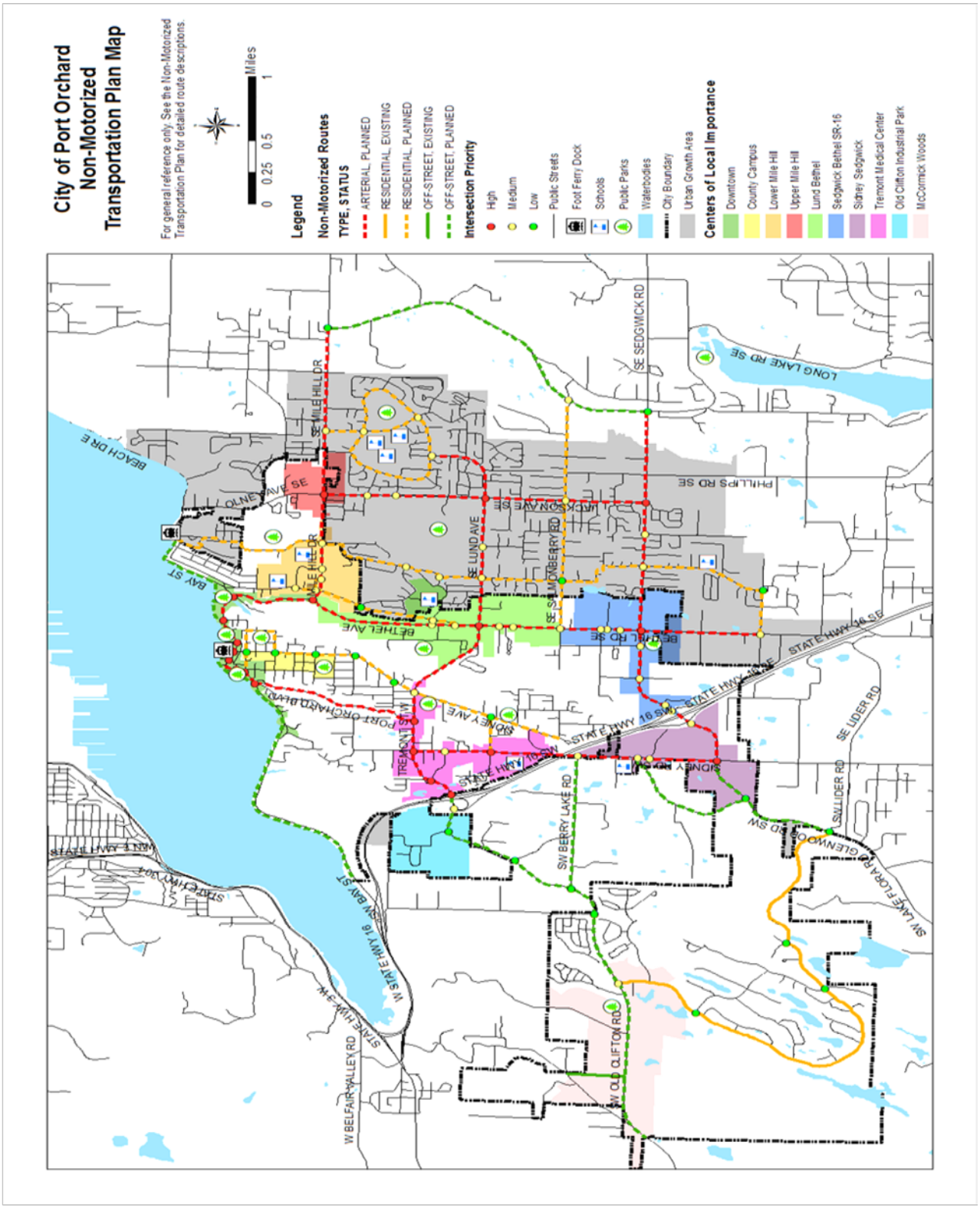
The 2013 Kitsap County Nonmotorized Facilities Plan identifies five bike routes within the Port Orchard planning area. These routes do not cross into the City of Port Orchard limits. The routes include:

- Route 25 – Sedgwick Road from SR 16 to the southwest, south on Glenwood Road SW

- Route 30 – SE Mile Hill Drive from the east city limits eastward to the Southworth Ferry terminal
- Route 37 – Bethel Road from Lincoln Avenue to the south into unincorporated Kitsap County
- Route 43 – SW Lake Flora Road from Glenwood Road SW southwesterly into unincorporated Kitsap County
- Route 47 – Beach Drive E, from the city limit to the north

Figure 8-3 identifies the City's nonmotorized network plan, including planned on- and off-street facilities. Port Orchard's nonmotorized network will improve bicycle and pedestrian access throughout the City while also completing regional connections identified in the Kitsap County Nonmotorized Facilities Plan.

Figure 8-3. Existing and Planned Nonmotorized Facilities Map



Nonmotorized Improvements

Planned Nonmotorized Routes

This section describes the City's vision for a network of nonmotorized facilities. Table 8-2 identifies the major segments which will comprise the nonmotorized network.

Table 8-2. Planned Nonmotorized Routes

Segment	On-Street/Off-Street	Facility Type*	Length (miles)	Status
Old Clifton Road	Off-street	MUSP	2.77	Planned
Long Lake Road	Off-Street	MUSP	2.40	Planned
Mosquito Fleet Trail	Off-street	MUSP	2.12	Planned
Bay St Pedestrian Path	Off-street	Pedestrian	1.49	Planned
Berry Lake Road	Off-street	MUSP	1.05	Planned
Glenwood Road	Off-street	MUSP	1.01	Planned
Feigley Road	Off-street	MUSP	0.36	Existing
Kendall Trail	Off-street	MUSP	0.26	Planned
SR 16 Crossing	Off-street	MUSP	0.20	Planned
Sedgwick Road	On-Street – Arterial	BL/S	2.98	Planned
Tremont-Lund	On-Street – Arterial	BL/S	2.63	Planned
Bethel Road	On-Street – Arterial	BL/S	2.62	Planned
Mile Hill Drive	On-Street – Arterial	BL/S	2.19	Planned
Jackson Avenue	On-Street – Arterial	BL/S	2.01	Planned
Pottery-Sidney	On-Street – Arterial	BL/S	1.91	Planned
Port Orchard Blvd	On-Street – Arterial	MUSP	1.06	Planned
Bay Street	On-Street - Arterial	BL/S	0.85	Planned
McCormick Woods Dr	On-Street – Residential	Road shoulder	3.93	Existing
Converse-Harris	On-Street – Residential	BL/S	3.10	Planned
Fircrest Drive	On-Street – Residential	BL/S	1.53	Planned
Mitchell Avenue	On-Street – Residential	BL/S	1.06	Planned
Retsil Road	On-Street – Residential	BL/S	1.10	Planned
Salmonberry West	On-Street – Residential	BL/S	0.98	Planned
Salmonberry East	On-Street – Residential	BL/S	0.79	Planned
Sidney Ave South	On-Street – Residential	BL/S	0.97	Planned

Sidney Ave North	On-Street – Residential	BL/S	0.72	Planned
Lippert Drive	On-Street – Residential	BL/S	0.28	Planned
	Total		42.37	

* MUSP = Multi-Use Separated Path BL/S = Bicycle Lane and Sidewalk

Arterial On-Street Facilities

Tremont Street/Lund Avenue (SR 16 to Jackson Avenue)

This 2.63-mile route will be the main east-west connection across Port Orchard. It passes through three centers of local importance and connects Van Zee Park and South Kitsap Regional Park. It also intersects with four north-south routes, providing connections between multiple neighborhoods. It has the most traffic of any street in Port Orchard: Between State Route 16 and Bethel Road, Tremont carries 22,600 to 23,400 AWDT; east of Bethel, Lund Avenue has 17,000 AWDT.

Part of this route has already been designed with sidewalks and standard bike lanes between SR 16 and Port Orchard Boulevard, and as of 2016 is awaiting funding to begin construction. The eastern end of the route is outside of city limits but within the Port Orchard Urban Growth Area, requiring collaboration with Kitsap County. The route is identified as part of High and Medium Priority projects in the Kitsap County Bicycle Facilities Plan.

Port Orchard Boulevard (Tremont Street to Bay Street)

This 1.06 mile segment is classified an arterial and currently serves 2,900 AWDT. It would provide a flat and shady connection between the Tremont Medical Center and Downtown Port Orchard. It runs through a greenbelt and serves only one residential driveway. One option is to convert one of the drive lanes into a two-way protected bike lane, which will have minimal impacts due to low traffic volumes on this street.

Bay Street (Port Orchard Boulevard to Bethel Road)

This 0.85 mile segment of Bay Street would be the business-access alternative to the Bay Street Pedestrian Path through the Downtown center of local importance. It would connect with the Downtown access and egress trails on Port Orchard Boulevard and Bethel Road.

Pottery Avenue/Sidney Road (Tremont Street to Sedgwick Road)

This 1.91 mile route will connect the Tremont Medical Center with the Sidney-Sedgwick commercial center, and also provide a safe route to school directly adjacent to Cedar Heights Junior High School and Sidney Glen Elementary School. A very small portion of the route is outside of city limits and within the Urban Growth Area, requiring collaboration with Kitsap County for completion. The route carries 5,900 to 8,000 AWDT.

To the south, this project will connect with an Opportunity Project identified in the Kitsap County Bicycle Facilities Plan.

Bethel Road (Bay Street to Sedgwick Road)

This 2.62 mile route will be the core north-south connection through Port Orchard and its busiest commercial centers. Anyone traveling east or west across the city crosses Bethel Road because it stretches from the northern waterfront to the southern city limits. Bethel Road carries 15,400 to 16,900 AWDT. The street has been planned for reconstruction for several years, with standard bike

lanes and sidewalks. A possible redesign process may provide the opportunity to ensure nonmotorized facilities better meet the spirit of this plan.

This route will connect with a project identified in the Kitsap County Bicycle Facilities Plan.

Sedgwick Road (Sidney Road to Long Lake Road)

This 2.27 mile route will connect the commercial centers of Sidney-Sedgwick and Sedgwick-Bethel SR 16 and residential neighborhoods in the southeastern part of the Urban Growth Area. It is partially outside of city limits and is mostly designated as a state highway, requiring collaboration with Kitsap County and the Washington State Department of Transportation. It is identified as an Opportunity Project in the Kitsap County Bicycle Facilities Plan.

Jackson Avenue (Sedgwick Road to Mile Hill Drive)

This 2.01 mile route is entirely outside of city limits but within the Port Orchard Urban Growth Area, and would connect a number of residential neighborhoods to South Kitsap Regional Park, the Upper Mile Hill commercial center, and connect to four east-west routes. Jackson Avenue carries 12,400 to 14,500 AWDT. This route is identified as two High Priority projects in the Kitsap County Bicycle Facilities Plan.

Mile Hill Drive (Bethel Road to Long Lake Road)

This 2.19 mile route will connect the Upper and Lower Mile Hill commercial centers with residential neighborhoods to the east, outside of Port Orchard city limits but within the Urban Growth Area. It will provide a route to school for students at Orchard Heights Elementary School and Marcus Whitman Junior High School. Along with Sedgwick Road, it will link with the off street trail on Long Lake Road. Mile Hill Drive has 16,400 to 17,600 AWDT. It is partially a state highway, which will require collaboration with Kitsap County and the Washington State Department of Transportation.

Outside of Port Orchard city limits, this route is identified as a High Priority project in the Kitsap County Bicycle Facilities Plan.

Residential On-Street Facilities

McCormick Woods Drive (Old Clifton Road to Glenwood Road)

This 3.9 mile segment consists of a wide road shoulder throughout the McCormick Woods neighborhood. It is already a popular route for bicycling and walking. However, it does not currently

meet City nonmotorized design standards. The wider shoulder may need to be widened and have parking prohibited; with no homes fronting McCormick Woods Drive, this will have minimal impact on residents, but as a mitigation the opposite shoulder could be widened in key locations to allow on-street parking. The speed limit may need to be lowered from 25 to 20 miles per hour.

Sidney Avenue (Tremont Street to Fireweed Street)

This 0.97 route will primarily connect residential areas and multi-family developments to Paul Powers Jr. Park, Van Zee Park, Cedar Heights Junior High School, and to the nonmotorized facilities on Tremont Street. Sidney Avenue serves 5,000 AWDT.

Lippert Drive (Pottery Avenue to Sidney Avenue)

This will be a short 0.28 mile segment connecting the Sidney Avenue residential area to commercial services on Pottery Avenue and the Tremont Medical Center.

Salmonberry Road West (Bethel Avenue to Jackson Avenue)

This 0.98 mile route will be an east-west connection through residential neighborhoods, connecting the Bethel commercial corridor with Jackson Avenue. Salmonberry Road serves 2,600 AWDT. About half of this route is outside of City limits but still within the Port Orchard Urban Growth Area, which will require collaboration with Kitsap County for completion.

Salmonberry Road East (Jackson Avenue to Long Lake Road)

This 0.79 mile route should only be built if the Long Lake Road trail is built. It will be an east-west connection through residential neighborhoods, extending the east-west connection from the Bethel commercial corridor with the many residential neighborhoods along Jackson Avenue and Salmonberry Road, connecting the Bethel commercial corridor with Jackson Avenue. Salmonberry Road serves 2,600 AWDT. About half of this route is outside of City limits but still within the Port Orchard Urban Growth Area, and half is outside of the Urban Growth Area, requiring collaboration with Kitsap County for completion. This project is identified as an Opportunity Project in the Kitsap County Bicycle Facilities Plan.

Mitchell Avenue (Bethel Avenue to South Kitsap High School)

This 1.16 mile route will connect the central portion of Port Orchard and neighborhoods outside of the city to the high school. It partially passes through unincorporated territory within the Urban Growth Area, which will require collaboration with Kitsap County for completion.

Retsil Road (Mile Hill Drive to Bay Street)

This 1.1 mile route will provide safe access through the City's most northeastern residential areas and connect directly to Retsil Park, the waterfront, and the Annapolis foot ferry dock. Retstil Road has 4,000 AWDT, which is relatively high for a residential street. Part of the route passes through an unincorporated area within the Urban Growth Area, which will require collaboration with Kitsap County.

Converse-Harris-Lincoln (Mile Hill Drive to Cedar Road)

This 3.10 mile route will provide a connection between multiple residential neighborhoods, East Port Orchard Elementary School, and Hidden Creek Elementary School. It connects directly to the Retsil Road route, but is distinct because it is entirely outside of Port Orchard city limits. However, it is important because it connects with a number of east-west routes that provide access to the city proper and its commercial areas. Collaboration with Kitsap County will be required for its completion. It also crosses two state highways, which will require collaboration with the Washington State Department of Transportation. This project will connect with and be part of an Opportunity Project identified in the Kitsap County Bicycle Facilities Plan.

Fircrest Drive (Jackson Avenue to Mile Hill Drive)

This 1.53 mile route will provide a connection throughout the unincorporated Parkwood neighborhood. It will connect with Orchard Heights Elementary School, Marcus Whitman Junior High School, and the Village Greens Golf Course. It will also provide a flatter alternative to reach Mile Hill than the steep northern part of Jackson Avenue. The route is entirely outside of city limits but is within the Urban Growth Area, requiring collaboration with Kitsap County. This route is identified as part of High Priority and Opportunity Projects in the Kitsap County Bicycle Facilities Plan.

Off-Street Facilities

Feigley Road (Old Clifton Road to Lone Bear Lane)

This trail is a paved pathway on the east side of Feigley Road that was constructed prior to the adoption of this Transportation Element. Improvements may be needed to bring this trail in line with City design standards and to accommodate nonmotorized traffic generated by a future high school on this street.

Mosquito Fleet Trail (Sinclair Inlet waterfront)

Kitsap County has planned a multi-use trail along the eastern shoreline of the Kitsap Peninsula. In Port Orchard, the trail will extend along the City's entire northern waterfront. As of 2016, several portions of the Mosquito Fleet trail are both completed and planned in Port Orchard on its downtown waterfront. To the east and west, it is identified as part of High Priority projects in the Kitsap County Bicycle Facilities Plan.

Bay Street Pedestrian Path (Water Street to Annapolis Foot Ferry Dock)

This path is envisioned as an off street connection between Port Orchard's two foot ferry docks, one being in downtown and the other in the Annapolis neighborhood. Part of the path is complete and newly built as modern multi-use path, with completion planned over the next several years (as of 2016). It will run through the downtown area and connect two waterfront parks and a public boat ramp.

The boardwalk on the downtown waterfront and the sidewalk on the back of shoreline buildings are not consistent with the vision of this nonmotorized plan and of the Mosquito Fleet trail. Completion of this path will require collaboration with Kitsap County, the Port of Bremerton, and waterfront property owners.

Old Clifton Road (Feigley Road to SR 16)

This trail will connect the McCormick Woods subdivision with the site of a future high school, enabling students to safely walk and bike to class. The trail will also extend along Old Clifton Road to

connect with the Old Clifton Industrial Park, an employment center. Special consideration will be needed for how the trail merges with planned bike lanes and sidewalks on Tremont Street. Locating the trail on the north and west sides of Old Clifton Road may minimize conflicts with driveways and intersections. Old Clifton Road serves between 5,500 and 6,100 AWDT. Typical right-of-way width is 60 feet.

A portion of the trail passes through unincorporated Kitsap County and an area not within the Port Orchard Urban Growth Area. Port Orchard will need to collaborate with Kitsap County to complete this trail segment. Part of it is identified as an Opportunity Project in the Kitsap County Bicycle Facilities Plan.

Berry Lake Road (Old Clifton Road to Sidney Road)

This 1.05 mile trail is entirely outside of Port Orchard City limits, but it will provide an important connection from the McCormick Woods area to the nearby Sidney Glen Elementary School and Cedar Heights Junior High School. Berry Lake Road serves 2,600 AWDT. Typical right-of-way width is 60 feet.

Sidney-SR 16 Crossing (Sidney Road to Sidney Avenue)

Creating a trail across Highway 16 in this area could create a new connection between neighborhoods and promote better access to the nearby schools and Paul Powers Jr. Park. If a bridge or tunnel is cost prohibitive, another option may be to extend SW Moorea Lane to Sidney Road via a series of switchbacks. Crossing SR 16 would require the approval of the Washington Department of Transportation (WSDOT), followed with an airspace trail lease agreement with WSDOT for ongoing maintenance and preservation of the trail facility.

Glenwood Road (McCormick Woods Drive to Sidney Road)

This one mile trail will connect McCormick Woods and other residential neighborhoods south of Port Orchard to the Sidney-Sedgwick commercial center. It is partially outside of Port Orchard city limits and will require collaboration with Kitsap County to complete. It is identified as part of an Opportunity Project in the Kitsap County Bicycle Facilities Plan.

Long Lake Road (Sedgwick Road to Mile Hill Drive)

This 2.4 mile trail is entirely outside of the Port Orchard city limits and has only a small portion within the Urban Growth Area. Nonetheless, it is recognized as an important route between two major arterials that provide access to Port Orchard proper: Mile Hill Drive and Sedgwick Road. It will connect outlying rural residential neighborhoods to Port Orchard and create a pleasant recreational path in a more rural environment. Collaboration with Kitsap County will be needed to complete this trail. The route is identified as part of a High Priority project in the Kitsap County Bicycle Facilities Plan.

Programmed Nonmotorized Improvements

The following projects that include pedestrian or bicycle facility improvements are included in the City's 2016-2021 Transportation Improvement Program:

- Tremont Street Widening –This City of Port Orchard project has been recommended to KRCC for federal funding. It would widen 0.65 miles of Tremont Street from two to four lanes with concrete sidewalks, bike paths on both sides, and necessary drainage improvements. This segment would complete the Port Orchard Bypass, which constructed a four-lane arterial from Bethel Road to Port Orchard Boulevard and the four-lane bridge across Blackjack Creek.

- Bay Street Pedestrian Path – The Port Orchard 6-year TIP (2016-2021) includes a project to construct a 1.2-mile-long multimodal waterfront pathway and retaining wall along the Mosquito Fleet Trail, between the Sidney Avenue and Annapolis Foot Ferries in Downtown Port Orchard.

- Sedgwick Road Corridor Improvements – The Port Orchard 6-year TIP (2016-2021) includes plans to widen 0.9 miles of Sedgwick Road, from SR 16 to Bethel, to 3 lanes with bike lanes and sidewalks on both sides. A second project is planned to implement Complete Streets improvements from SR 16 to Glenwood, a distance of 0.75 miles.

- Bethel Avenue – The Port Orchard 6-year TIP (2016-2021) includes a two-phase widening of Bethel Avenue from Mile Hill Drive to Sedgwick Avenue, to include up to four lanes and to include sidewalks, bike lanes, lighting, and stormwater improvements.

- Sidney Avenue - The Port Orchard 6-year TIP (2016-2021) includes a project to widen the one-mile segment from SR 16 to Sedgwick Road to three lanes with bike lanes, sidewalks, stormwater, and traffic calming; a second project will overly Sidney/Pottery Avenue from Lippert Drive to SR 16 with reconstructed curb, gutter, sidewalks, curb ramps, and bike lanes.

- Pottery Avenue - The Port Orchard 6-year TIP (2016-2021) includes a project to widen the two lane roadway with bike lanes, sidewalks, and stormwater improvements for 0.3 miles from Tremont to Melcher Street; and another project widen to four lanes the segment from Tremont to SR 16, a distance of 1 mile, adding sidewalks, stormwater and traffic calming.

- Old Clifton Road - The Port Orchard 6-year TIP (2016-2021) includes a project to widen the existing roadway west of SR 16 to include shoulders, street lighting, water main, and a grade-separated pedestrian path as identified in the McCormick Urban Village Plan.

- Sherman Avenue - The Port Orchard 6-year TIP (2016-2021) includes a project to widen the 2-lane roadway with bike lanes and sidewalks for 0.35 miles.

- Fireweed Road – The Port Orchard 6-year TIP (2016-2021) includes a project to widen the 2-lane roadway with bike lanes and sidewalks for 0.25 miles.

- Cline Avenue - The Port Orchard 6-year TIP (2016-2021) includes a project to rehabilitate the roadway pavement and replace the sidewalk on the west side of the street, in the segment from Kitsap Drive to Dwight Street, a distance of 0.13 mile.
- Melcher Street – The Port Orchard 6-year TIP (2016-2021) includes a project to widen Melcher Street from Pottery Avenue to Sherman Avenue to include two travel lanes, bike lanes, sidewalks, and a stormwater system.
- The Port Orchard 6-year TIP (2016-2021) includes provision for regular maintenance and repair of existing concrete sidewalks and curb ramps as needed.

8.4. Level of Service

Transportation Level of Service (LOS) is a qualitative description of the operating performance of a given element of a transportation infrastructure. It is typically expressed as a letter grade from LOS A, representing free flow operations with almost no travel delay, to LOS F, representing complete breakdown of flow and high delay. LOS establishes a basis for comparison between streets and intersections and helps guide the prioritization of improvement projects.

Port Orchard's road network needs to maintain consistency with Kitsap County's network while recognizing the City's transportation needs and vision. In order to establish and maintain this consistency, the City's LOS standards should be similar to those in the adjacent urban unincorporated area while recognizing the transportation goals and needs specific to the City. This section describes the Level of Service standards for the streets and intersections on the City's arterial street network as well as the findings of a citywide LOS analysis.

8.4.1 Segment Level of Service

Table 8-3 describes a set of street capacity standards which incorporate planning-level vehicle capacity estimates with consideration for the impact of non-motorized facilities on vehicle capacity. These standards can be applied to calculate capacity for every arterial street in Port Orchard.

These street capacity standards use a base peak hour capacity which is based on Highway Capacity Manual (HCM) and similar methodologies used throughout the region. Base capacity is adjusted based on facility attributes including left-turn lanes, access restrictions, bike lanes, sidewalks, and on-street parking.

Left-turn lanes are estimated to add the capacity equivalent of one half through lane by removing major approach left-turn delay. Similarly, segments with limited access (e.g. physical or natural barriers) experience an increase of the equivalent of 70 percent of one through lane. Capacity reductions for lack of non-motorized facilities are based on the principle that HCM capacity calculations assume fully-built urban street sections. Streets without sidewalk or bike lanes will force nonmotorized users into vehicle lanes, reducing vehicle capacity. Exceptions to these nonmotorized reductions can be made for freeways and state highways which are designed to emphasize vehicle mobility over nonmotorized traffic. The presence of on-street parking, for example along Bay Street, is also expected to reduce capacity slightly.

The segment LOS described in this Transportation Element is based upon the street capacity methodology outlined in Table 8-3.

Table 8-3. Proposed Port Orchard Segment Capacity Standards

Functional Classification	Base Peak Hour Capacity (veh/hr/lane)	Capacity Adjustments				
		Left-Turn Lane (vph)	Access-Restricted Segment (vph)	No Bike Lane	No Sidewalk	On-Street Parking
Freeway	2,000	n/a	n/a	n/a	n/a	n/a
State Highway	950	475	665	0	0	0
Principal Arterial	850	425	595	-85	-170	-45
Minor Arterial	750	375	525	-40	-75	-40
Collector	620	310	435	-30	-60	-30

Street segment LOS is based on the ratio of traffic volume to roadway capacity and can be described as a roadway's ability to serve all users. POMC 16.71.007 defines LOS thresholds which are consistent with the Port Orchard/South Kitsap Subarea Plan and with the planning-level LOS thresholds defined in Highway Capacity Manual 1994 (HCM1994). These thresholds and descriptions have been adapted and modified to fit the multimodal capacity approach described above. See Table 8-4.

Table 8-4. Port Orchard Street Segment LOS Characteristics

LOS	Volume / Capacity	Description
A	≤ 0.60	Facility accommodates all modes of transportation. Vehicles experience free flow, with low volumes and high speeds
B	0.61 – 0.70	Stable flow, with traffic conditions beginning to restrict operating speeds. Drivers still have reasonable maneuverability between multiple lanes. All modes are accommodated
C	0.71 – 0.80	Fairly stable flow, but higher volumes more closely constrict speeds and maneuverability.
D	0.81 – 0.90	Approaching unstable flow, with tolerable operating speeds and limited maneuverability. Facilities without nonmotorized facilities and heavy pedestrian/bike volume may experience unstable flow.
E	0.91 – 1.00	Nonmotorized users in travel lanes will conflict with heavy vehicle volume and cause breakdowns in flow. Vehicles experience unstable flow with reduced operating speeds.
F	> 1.00	Facility is unable to accommodate all modes. Vehicles experience forced flow, operating under stop-and-go conditions

Source: TSI 2015, Port Orchard Transportation Element 2011

8.4.2. Intersection Level of Service

Intersection LOS is based on the average delay experienced by a vehicle traveling through an intersection. Delay at a signalized intersection can be caused by waiting for the signal or waiting for the queue ahead to clear the signal. Delay at unsignalized intersections is caused by waiting for a gap in traffic or waiting for a queue to clear the intersection.

Table 8-5 shows the amount of delay used to determine LOS for signalized and unsignalized intersections. For the purposes of this analysis and to maintain consistency with WSDOT practice, roundabouts were analyzed using the HCM2000 signalized LOS thresholds.

Delay is defined differently for signalized and all-way stop controlled intersections than for two-way stop controlled (i.e. stop control on minor approach) intersections. For signalized and all-way stop controlled intersections, level of service thresholds are based upon average control delay for all vehicles using the intersection. For two-way stop controlled intersections, delay is reported for the movement with the worst (highest) delay.

Table 8-5. Intersection Level of Service Thresholds

LOS	Signalized Delay (sec/veh)	Unsignalized Delay (sec/veh)
A	≤10	≤10
B	>10 – 20	>10 – 15
C	>20 – 35	>15 – 25
D	>35 – 55	>25 – 35
E	>55 – 80	>35 – 50
F	>80	>50

8.4.3. Setting Level of Service Standards

The Growth Management Act (GMA) requires cities to adopt local Level of Service (LOS) standards and ordinances that prohibit development if the adopted standard would be violated by development approval. Developments must be required to provide for necessary improvements within a six-year period with an additional extension of six years permitted on a case-by-case basis.

Washington State's GMA requires that a standard for level of service be set but acknowledges the need for flexibility by providing for six years and extensions for the development of required improvements. Therefore, during that period, some portion of the facilities may be under development, design and construction. During that period, facilities may be experiencing congestion that is over the standard. As facilities are completed, improvements may initially provide transportation service that performs better than the adopted standard.

Port Orchard has adopted a LOS standard of LOS D for all segments and intersections on the City's arterial street system. Level of Service D represents a reasonable threshold between the "ideal" LOS A and the realities of travel demand, construction, and financial capabilities. At LOS A, people could travel anywhere anytime with no delay. LOS D represents the ability to travel most of the area's arterial and collector routes with only moderate congestion-related delays. As the City of Port

Orchard grows and becomes more urbanized, some additional travel delay will become a reality, particularly during peak periods.

The City's Level of Service standard does not apply to intersections on State facilities within the City of Port Orchard. Minimum LOS for intersections on State facilities are set by the Washington State Department of Transportation (WSDOT). SR 16 is designated by WSDOT as a Highway of Statewide Significance (HSS) and is assigned minimum LOS D. SR 166 is designated by the Puget Sound Regional Council (PSRC) as a Tier 1 highway of regional significance with LOS E Mitigated. SR 160 is designated by PSRC as a Tier 2 highway of regional significance with LOS D.

Alternative Level of Service and Concurrency

A. Pedestrian Safety and Mobility LOS. Developments will provide for pedestrian safety, including adequate connections to existing pedestrian facilities. Proximity to pedestrian oriented establishments, such as, but not limited to, schools, parks, and commercial establishments shall be considered when evaluating pedestrian safety. Particular attention shall be given to school walk routes.

1. Ultimate Pedestrian LOS. The ultimate pedestrian facility design includes a sidewalk, curb and gutter section or other approved non-motorized vehicle facility. Specific requirements may identify the need for additional safety precautions.

2. Minimum Pedestrian LOS. A minimum pedestrian facility shall include one of the following:

a. A six-foot wide paved path separated from the paved roadway surface by either an unpaved ditch or swale, three feet wide;

b. An eight-foot wide paved path constructed integral with paved roadway surface and including adequate delineation for safety;

c. Other conditions may be considered equivalent to the minimum pedestrian safety facility at the sole discretion of the city engineer.

B. Traffic Capacity LOS

Capacity LOS is defined in the 2010 Highway Capacity Manual and is based on PM peak hour

1. The City's arterial street system, including segments and intersections, shall meet the following standards for LOS:

a. Principal arterials – LOS D

b. Minor arterials – LOS D

c. Collector arterials – LOS C

2. Exemptions to Capacity LOS. The city council upon recommendation of the city engineer may determine as follows:

a. That it is not practical to improve specific intersections to achieve higher LOS standards;

b. That other improvements may be considered as equivalent mitigation in lieu of achieving the capacity LOS standard stated in this section;

c. Exempt specific intersections or street segments from the LOS standards set forth in this section for a specific period of time.

C. Street Frontage LOS

1. Ultimate Design LOS. The street system will meet the geometric, right-of-way width, and street section standards for the classification defined in the arterial street plan, the subdivision code, the comprehensive plan, or other site specific project requirements. This will include, but not be limited to, traffic control, drainage, other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements and arterial connections in conformance with criteria set forth in the ultimate design LOS. Other utilities and appurtenances shall be constructed to meet city standards and comprehensive plans, concurrent with the street construction.

2. Three-Quarter Street LOS. The street system shall consist of sidewalk, curb, gutter, all utilities, and appurtenances, and one-half of the ultimate pavement width on the development side of the right-of-way, plus a minimum 14-foot pavement width on the opposite side of the street. The total width shall not exceed the ultimate design width. This will include, but not be limited to, traffic control, drainage and other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements and arterial connections in conformance with criteria set forth in the ultimate design LOS. Other utilities and appurtenances shall be constructed to meet city standards and comprehensive plans concurrent with the street construction as stated in project requirements.

3. Minimum Street LOS. A minimum 30-foot wide paved street section centered on ultimate design cross section with sufficient traffic capacity to serve existing and project generated traffic. Curb, gutter, and sidewalk will not be required; however, pedestrian safety facilities would normally be required. Drainage may be in surface ditches or a subsurface conveyance. This will include, but not be limited to, traffic control, drainage and other utilities, pedestrian facilities, transportation facility design, construction, right-of-way, and easement dedications, for all transportation facilities, including frontage improvements and arterial connections in conformance with criteria set forth in the ultimate design LOS. Other utilities and appurtenances shall be constructed to meet city standards and comprehensive plans, concurrent with street construction, as stated in project requirements.

D. Non-motorized Transportation LOS. Development proposals shall be evaluated for compliance with a comprehensive trail plan. Development proposals shall be evaluated for continuity with the system and may be required to provide off-site improvements. Development proposals may be required to expand the plan in some locations to provide for non-motorized circulation to neighboring properties or areas. The emphasis shall be on off-street paths, but shall also include selected arterials and collectors and school walk routes which may require separated

bike/pedestrian paths, lanes, or other improvements to ensure access continuity and safety for trips generated in the development.

Concurrency requirements**.**

All developments shall meet the minimum development standards for Pedestrian Safety and Mobility LOS. The criteria for determining the applicable standard for determining compliance with pedestrian safety LOS, traffic capacity LOS and street design standard LOS concurrency requirements shall include, but not be limited to, the volume of traffic generated or to be generated on the arterial street system from a development at full build-out during the most critical or highest volume hour of the day hereafter referred to as the peak hour. The peak hour volume shall be determined by a traffic impact analysis. Compliance with the concurrency LOS standards will be based on the following criteria:

A. Less Than 10 Peak Hour Trips. If a project generates less than 10 peak hour vehicle trips, the city engineer shall determine the necessity of the project to meet all or a portion of the concurrency LOS requirements.

1. Street Frontage. Minimum street LOS improvements must be in place on the project street frontage.

The city engineer shall consider the following when making this determination if non-motorized safety of traffic capacity LOS is required. In no case shall the concurrency requirements exceed those of a project with fewer than 29 Peak Hour Trips.

1. Proposed developments in the area;

2. Proximity of adjacent ultimate, three-quarter street, and/or minimum LOS improvements;

3. Adequacy and condition of street frontage improvements;

4. Proximity to pedestrian oriented establishments such as, but not limited to, schools, parks, and commercial businesses;

5. Anticipated impacts of project;

6. Capacity of the affected arterial street system.

B. Ten to 29 Peak Hour Trips. If a project generates 10 to 29 peak hour trips, the following LOS standards are necessary to achieve concurrency:

1. Street Frontage. Three-quarter street LOS improvements must be in place on the project street frontage.

2. Adjacent Street System.

a. Minimum Street LOS Improvements. Minimum street LOS improvements must be in place on the adjacent street system to the point where they connect to an arterial street that meets the three-quarter street LOS on the same side of the street as the development.

b. Minimum Pedestrian Safety LOS. Minimum pedestrian safety LOS improvements must be in place on the adjacent street system to the point where they connect to or intersect with an arterial street that meets the three-quarter street LOS on the same side of the street as the development. Improvements may be considered connected to adjacent improvements on the opposite side of the street, if the connection is made with an approved pedestrian crossing facility at a controlled intersection, providing protection to the pedestrians with a stop sign or traffic signal, at the discretion of the city engineer.

3. Capacity LOS. Intersections and segments impacted by traffic from the development as identified in the project traffic impact analysis shall be evaluated for traffic capacity LOS and street design standards and requirements. Intersections and segments on the arterial street system that are impacted by peak hour traffic generated by the development shall be required to meet capacity LOS standards and street design standards. All or a portion of the development shall be denied or delayed until deficient intersections meet traffic capacity LOS standards and/or street design standards.

C. Thirty to 75 Peak Hour Trips. If a project generates 30 to 75 peak hour trips the following LOS standards are necessary to achieve concurrency:

1. Street Frontage. Three-quarter street LOS improvements must be in place on the project street frontage.

2. Adjacent Street System. Three-quarter street LOS improvements must be in place on the adjacent street system to the point where they connect to an arterial street that meets the three-quarter street LOS on the same side of the street as the development.

3. Capacity LOS. Intersections and segments impacted by traffic from the development as identified in the project traffic impact analysis shall be evaluated for traffic capacity LOS and street design standards and requirements. Intersections and segments on the arterial street system that are impacted by peak hour traffic generated by the development shall be required to meet capacity LOS standards and street design standards. All or a portion of the development shall be denied or delayed until deficient intersections meet traffic capacity LOS standards and/or street design standards.

4. Non-motorized Transportation LOS. Development proposals shall be evaluated for compliance with the non-motorized element of the comprehensive plan. Development proposals shall be evaluated for continuity with the system and may be required to provide off-site improvements. Development proposals may be required to expand the plan in some locations to provide for non-motorized circulation to neighboring properties or areas. The emphasis shall be on off-street paths, but shall also include selected arterials and collectors and school walk routes which may require separated bike/pedestrian paths, lanes, or other improvements to ensure access continuity and safety for trips generated in the development.

D. More Than 75 Peak Hour Trips.

1. Street Frontage. Ultimate Design street LOS improvements must be in place on the project street frontage.

2. Adjacent Street System. Three-quarter street LOS improvements must be in place on the adjacent street system to the point where they connect to an arterial street that meets the three-quarter street LOS on the same side of the street as the development.

3. Capacity LOS. Intersections and segments impacted by traffic from the development as identified in the project traffic impact analysis shall be evaluated for traffic capacity LOS and street design standards and requirements. Intersections and segments on the arterial street system that are impacted by peak hour traffic generated by the development shall be required to meet capacity LOS standards and street design standards. All or a portion of the development shall be denied or delayed until deficient intersections meet traffic capacity LOS standards and/or street design standards.

4. Non-motorized Transportation LOS. Development proposals shall be evaluated for compliance with the non-motorized element of the comprehensive plan. Development proposals shall be evaluated for continuity with the system and may be required to provide off-site improvements. Development proposals may be required to expand the plan in some locations to provide for non-motorized circulation to neighboring properties or areas. The emphasis shall be on off-street paths, but shall also include selected arterials and collectors and school walk routes which may require separated bike/pedestrian paths, lanes, or other improvements to ensure access continuity and safety for trips generated in the development.

8.5. Current System Needs

8.5.1. Existing Network Volumes and LOS

Three street segments, identified in Table 8-6, currently have levels of service below the City's minimum LOS D. Existing arterial and intersections LOS results are shown in Figure 8-4 and Figure 8-5, respectively.

Table 8-6. Port Orchard Previously Identified Segment Level of Service Deficiencies

Segment ID	Name	Cross Street A	Cross Street B	Functional Classification	V/C	LOS
2005	Bethel	Salmonberry Rd	Lund	Principal Arterial	1.02	F
3025	Tremont St	SR 16 WB ramp	Pottery Ave	Minor Arterial	1.11	F
3026	Tremont St	Pottery Ave	PO Blvd	Minor Arterial	1.13	F

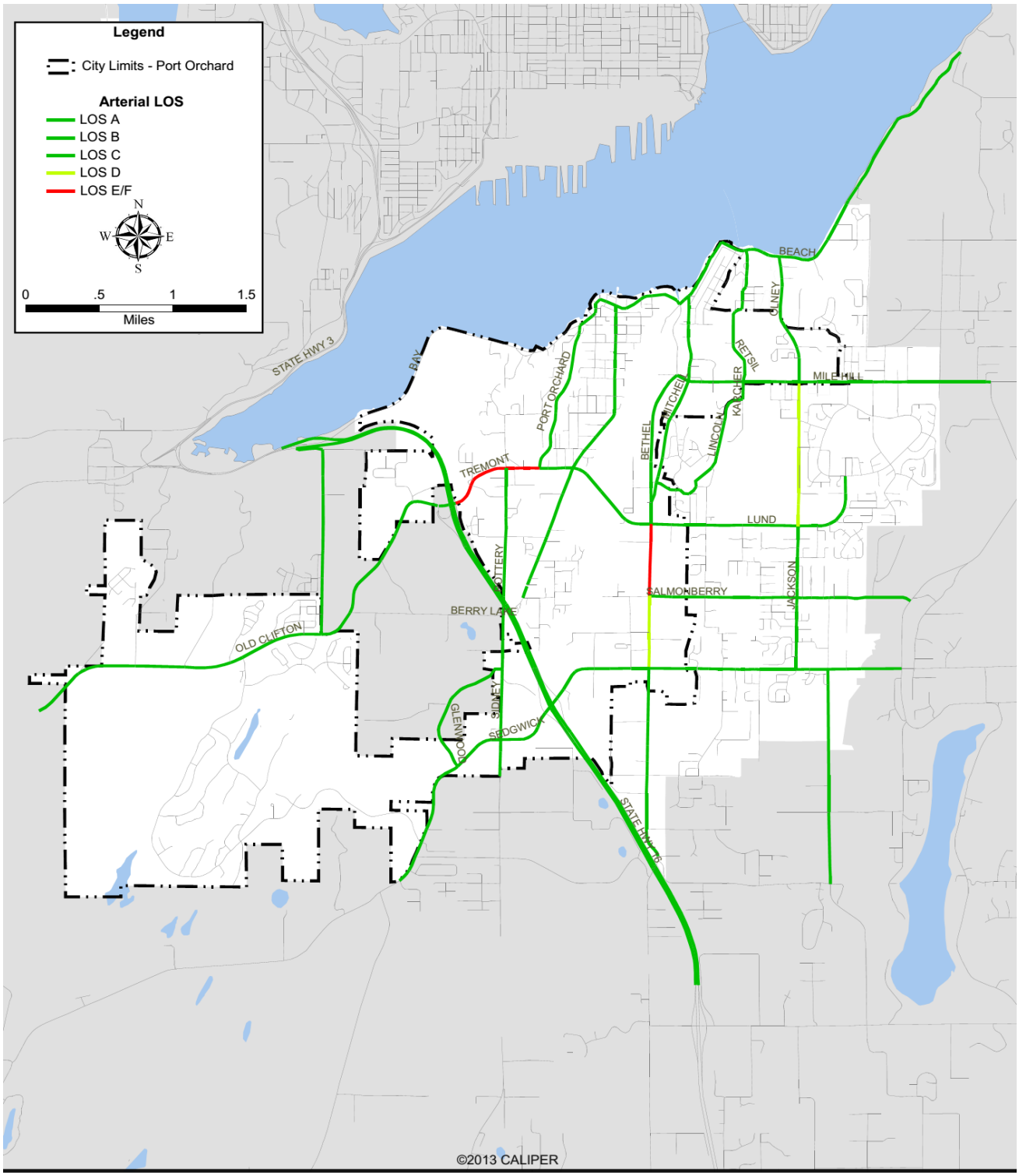


Figure 8-4

Existing Arterial Segment LOS

City of Port Orchard

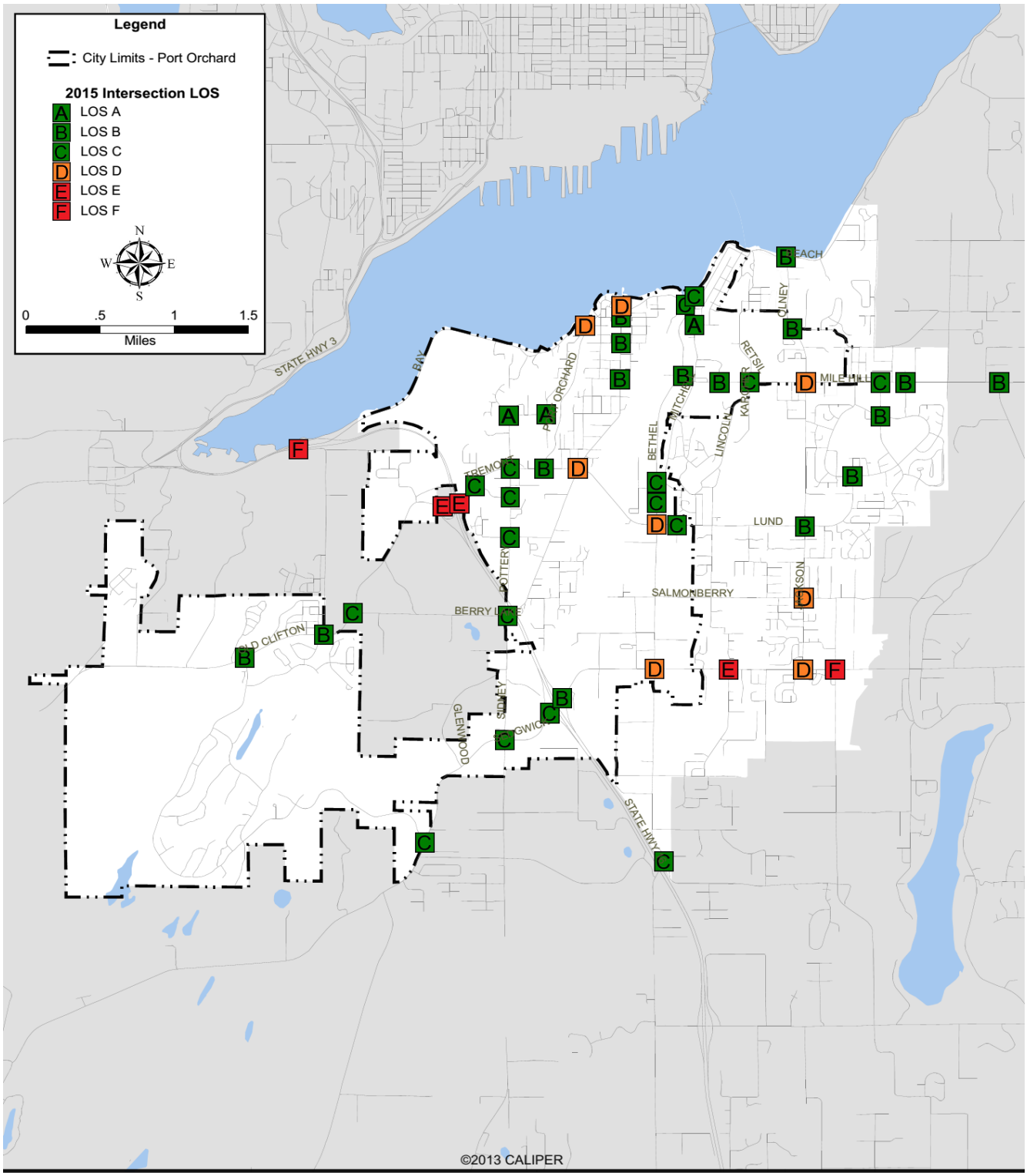


Figure 8-5

Existing Intersection Level of Service

City of Port Orchard

The intersections of Tremont/Old Clifton with the SR 16 ramps are currently operating below the minimum LOS D for City- and state-owned facilities. Three other intersections within the Port Orchard UGA but outside the City also operate below LOS D. These locations are identified in Table 8-7.

Table 8-7. Port Orchard Existing Intersection Level of Service Deficiencies

Intersection	Control Type[1]	Existing Delay[2] (s/veh)	Existing LOS
Within City Limits			
Old Clifton Rd / SR 16 EB ramps	TWSC	44.8	E
Tremont Street W / SR 16 WB ramps	TWSC	42.2	E
Outside City Limits			
SR 16 / Anderson Hill Rd SW	TWSC	>180	F
SE Sedgwick Rd / Converse Ave SE	TWSC	43.6	E
SE Sedgwick Rd / Phillips Rd SE	TWSC	>180	F

[1]TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized
[2]Average control delay for all movements. For TWSC, delay is reported for the movement with the worst (highest) delay.

8.5.2. Actions Necessary to Meet LOS Standards

The 2016-2021 TIP includes two corridor improvement projects which will bring all currently-failing facilities into compliance with LOS standards. See Table 8-8.

Table 8-8. Projects Necessary to Bring Existing Facilities up to LOS Standards

TIP Project ID	Project Title	Description	Impacted Facilities
1.1	Tremont Widening	Corridor widening, sidewalk, bike lane, and new roundabouts at SR 16 ramps	• Tremont segments 3025, 3026 • Old Clifton Rd/SR16 EB ramps • Tremont/SR16 WB ramps
1.4/2.3	Bethel Corridor Reconstruction	Capacity improvements along Bethel corridor, including widening, sidewalks, and bike lane	• Bethel segment 2005

8.6. Traffic Forecast

8.6.1. Land Use Assumptions

Existing Land Use

For the purposes of transportation planning, land use can be stratified into two general categories: households and employment. Residential land use forecasts are often expressed in terms of population, however for travel demand modeling it is helpful to convert population into trip-generating households.

Current population and household estimates are summarized in Table 8-9. These figures represent the most recent PSRC estimates.

Table 8-9. Port Orchard Existing Population Estimate

Total Population	13,150
Total Households	5,231

Source: PSRC 2014

PSRC publishes citywide employment estimates which are stratified into six different categories, consistent with the categories used in the Kitsap County transportation model which formed the foundation of the Port Orchard citywide transportation model. Table 8-10 identifies the modeled employment categories, including their corresponding North American Industry Classification System (NAICS) code(s), number of employees, and share of total citywide employment.

Table 8-10. Port Orchard Existing Employment Estimates

NAICS Code	Classification	Sector	Number	Percent
44, 45	Commercial	Retail	1,503	22.1%
51-56, 61, 62, 71, 72, 81		Finance, Insurance, Real Estate, and Services	3,106	45.6%
Public sector		Government and Education	1,868	27.4%
11, 21, 23	Industry	Construction and Resources	139	2.0%
31-33		Manufacturing	67	1.0%
22, 42, 48, 49		Wholesale Trade, Transportation, and Utilities	128	1.9%
		Total	6,809	100.0%

Source: PSRC 2014

Land Use Growth Forecast

In order to maintain internal consistency with the other elements of the Comprehensive Plan Update, the citywide planning model used land use forecasts which are consistent with PSRC and Kitsap County growth allocations. These forecasts include total citywide and UGA population growth of 8,235 and 6,235, respectively, as shown in Table 8-11**.**

Table 8-11. Port Orchard 2036 Population Growth Forecast

Area	Population Growth	Average Annual Growth Rate
City of Port Orchard	8,235	2.67%
Port Orchard UGA	6,235	1.66%

Source: Kitsap County 2015, BERK Consulting 2015

Kitsap County 20-year employment allocations by employment sector are presented in Table 8-12. The County forecast includes 3,132 new jobs by 2035, which represents a 46 percent increase from 2015.

Table 8-12. Port Orchard 2036 Employment Growth Forecast

NAICS Code	Classification	Sector	2015 Employment	Net Growth, 2015-2036	2036 Employment
44, 45	Commercial	Retail	1,503	211	1,714
51-56, 61, 62, 71, 72, 81		Finance, Insurance, Real Estate, and Services	3,106	2,013	5,119
Public sector		Government and Education	1,868	347	2,215
11, 21, 23	Industry	Construction and Resources	139	176	315
31-33		Manufacturing	67	250	317
22, 42, 48, 49		Wholesale Trade, Transportation, and Utilities	128	135	263
		Total	6,809	3,132	9,941

Source: Kitsap County 2014, BERK Consulting 2014

Land Use Growth Distribution

The geographic units or Transportation Analysis Zones (TAZs) used to geographically represent the land use in and around Port Orchard are consistent with the structure developed by Kitsap County for the countywide planning model. A total of 60 internal TAZs were used to represent the City and UGA. Residential land use is represented in the traffic model in terms of single-family and multi-family dwelling units while employment is modeled using the categories defined in Table 8-12. The

citywide base year household and employment estimates described above were checked against TAZ-based GIS data provided by Kitsap County and minor revisions were made to reconcile the latest land use estimates with Kitsap County's geospatial data. Citywide housing and employment growth forecasts were spatially distributed to the modeled TAZs using zoning and land capacity analysis geospatial data.

8.6.2. Traffic Forecasting Model

Background

The Port Orchard model was developed in TransCAD 6.0 software and its underlying structure is based on Kitsap County's county travel demand model. Travel demand is represented in terms of PM peak hour vehicle trips. The base year model was calibrated to match intersection turning movement counts collected at 49 locations throughout the City in June of 2015.

Network Development

An inventory of existing transportation facilities was developed through review of field data and aerial and satellite photography. The network inventory was used to verify and expand street network data provided by Kitsap County in order to ensure that the citywide model accurately represented (1) the City's arterial street system, (2) local streets which are outside the scope of the countywide model, and (3) regionally significant routes including state highways SR 16, SR 160, and SR 166. See Figure 8-6.

Modeled link and node capacities and volume-delay functions were held consistent with the Kitsap County model.

Traffic Analysis Zone Structure

The function of a Traffic Analysis Zone (TAZ) in a travel demand model is to generate vehicle trips to and from the roadway network. In general internal TAZs are specific geographic areas that are associated with specific land use data. The land use data associated with a TAZ determines the number of trips that the TAZ produces to or attracts from the other TAZs in the model. The planning model's traffic analysis zone (TAZ) structure consists of 60 zones, of which 55 are internal to the Port Orchard area. See Figure 8-7.

There are 5 external zones surrounding the modeled study area. These zones are designed to incorporate trips that are generated to and/or from points outside the network. Although these are labeled zones, they actually represent links to regions outside the model and do not represent a defined area. These zones do not reflect any land use assumptions; only vehicle trips. Trips to and from each external zone are determined from actual traffic counts and future trips are based on historical growth records. These external zones play a two-part role in the model: (1) only a certain portion of the trips in an external zone interact with TAZ's within the model, and (2) the remainder of the trips in any external zone interact with other external zones outlying the study area. These trips are called through trips since they have neither an origin nor destination within the study area yet they pass through the study area, impacting the network.

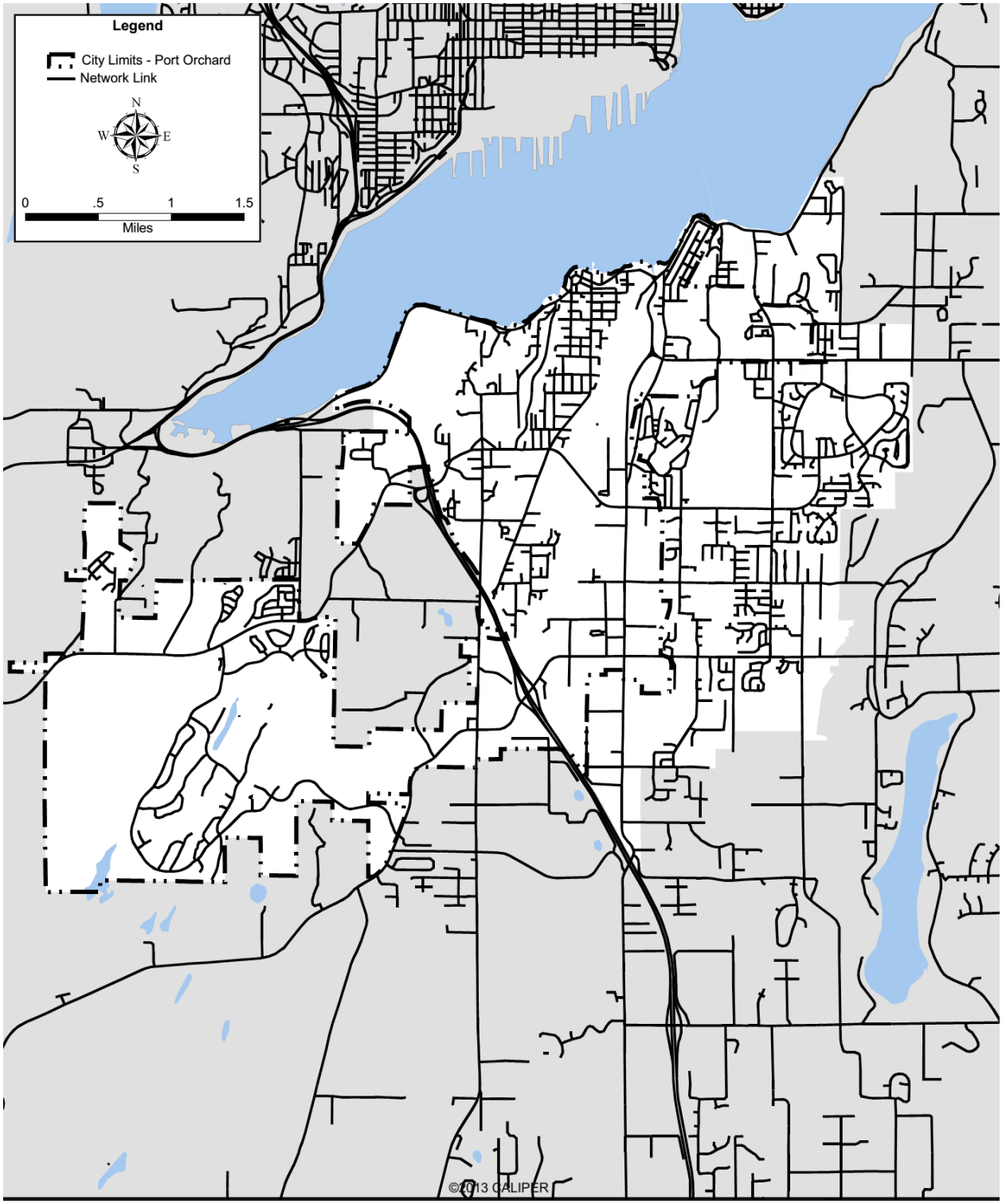


Figure 8-6

Planning Model Street Network

City of Port Orchard

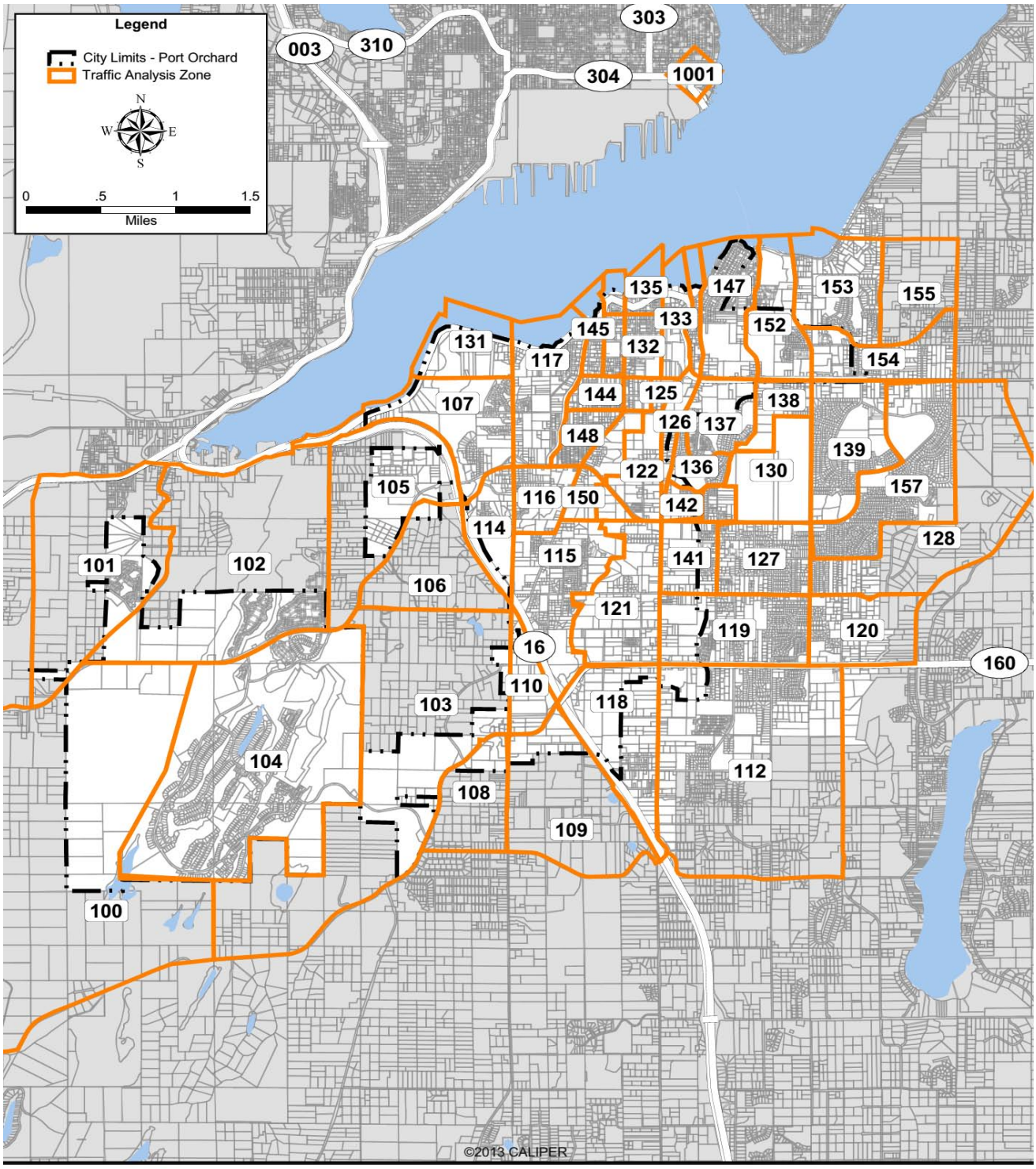


Figure 8-7

Traffic Analysis Zones

City of Port Orchard

Trip Generation

Trips are generated by land uses and are assigned a trip type. In general, three basic trip types are represented in the travel demand model:

- Home-Based Work (HBW): Trips with one end at the traveler's home and the other end at the traveler's place of employment
- Home-Based Other (HBO): Trips with one end at the traveler's home and the other end at somewhere other than the traveler's place of employment, e.g. shopping trips
- Non-Home-Based (NHB): Trips without an end at the traveler's home

Trip generation rates used in the Port Orchard model are based on Kitsap County and ITE trip generation rates and are representative of PM peak hour vehicle trips. Table 8-13 displays the trip generation rates used in the model. Trip generation for external TAZs was based on current and historical WSDOT and Kitsap County traffic volumes.

Table 8-13. Trip Generation Rates

Land Use Code	Units	Total	Origins			Destinations		
			HBW	HBO	NHB	HBW	HBO	NHB
Single-Family Residential	Households	0.7964	0.0324	0.2061	0.0837	0.1502	0.2664	0.0576
Multi-Family Residential	Households	0.5032	0.0189	0.1197	0.0486	0.0762	0.2056	0.0342
Retail	Employees	1.4496	0.1235	0.4885	0.1554	0.0540	0.4866	0.1415
Finance, Insurance, Real Estate, and Services	Employees	0.5859	0.0671	0.1523	0.0945	0.0080	0.1470	0.1170
Government and Education	Employees	0.9318	0.0950	0.1931	0.3080	0.0034	0.0609	0.2715
Wholesale Trade, Transportation, and Utilities	Employees	0.5755	0.0610	0.0840	0.2380	0.0048	0.0287	0.1590
Manufacturing	Employees	0.3280	0.0330	0.0310	0.1400	0.0030	0.0170	0.1040
Construction and Resources	Employees	0.3510	0.0390	0.0360	0.1670	0.0010	0.0110	0.0970

Source: ITE 2012; TSI 2015

Trip Distribution

Trips are distributed between TAZs using a gravity model, which is based on the gravitational theory that the attraction between two bodies is directly proportional to the bodies' masses and inversely proportional to the distance between the bodies. For the purposes of transportation modeling, a TAZ's "mass" is represented by the number of trips generated (produced by or attracted to) the TAZ while the distance factor is represented by route travel time.

The gravity model calculates the attractiveness between any two TAZs using the following utility function:

$f(U) = a * (U^b) * (e^{cU})$

In the utility function, the independent variable U is defined as travel time between zones. The parameters a, b, and c are calibration factors which influence the weight of travel time in the gravity model. The gravity parameters used in the Port Orchard model are shown in Table 8-14. These parameters were based on the values used in the Kitsap County model and guidance from *NCHRP Report 716* (TRB 2012). They were further refined using 2010 Census commute travel time data for the Port Orchard Census County Division (CCD).

Table 8-14. Trip Distribution Gravity Model Parameters

Trip Purpose	Model Parameter		
	a	b	c
Home-Based Work (HBW)	241.7	-2.401	0.1111
Home-Based Other (HBO)	500.0	-2.402	0.1500
Non-Home Based (NHB)	1000	-2.402	0.1950

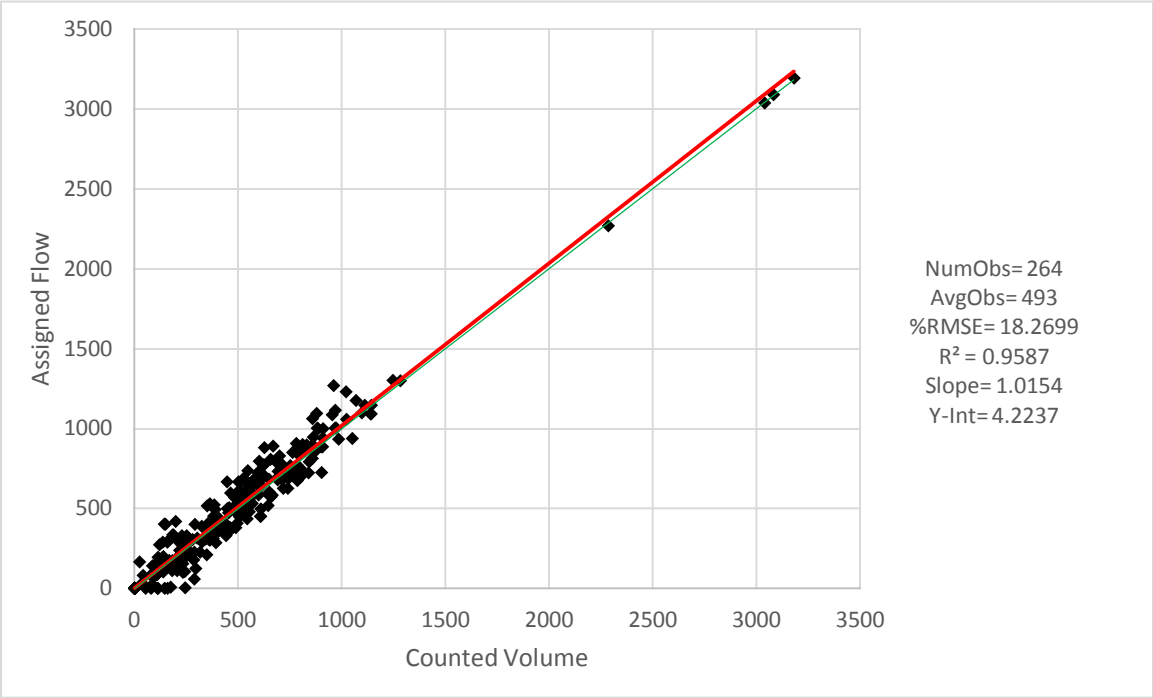
Traffic Assignment

Trips were assigned to the street network using an equilibrium assignment process which routed vehicle trips from origin to destination along the calculated shortest travel time route, iteratively updating travel time as vehicle demand induces congestion throughout the network. As travel time was updated, shortest paths were recalculated and traffic re-assigned. The process continued until the model found an equilibrium condition.

Calibration

The base year model was calibrated based on guidance from FHWA's *Travel Model Validation and Reasonableness Checking Manual Second Edition* (FHWA 2010). Assigned link volume was measured against link volume counts which were derived from the 2015 PM peak hour intersection turning movement counts. Calibration statistics and a scatterplot of assigned vs. counted volume are shown in Figure 8-8.

Figure 8-8. Calibration Statistics, 2015 Citywide Planning Model



Forecasting Future Travel Demand

For the 20-year planning horizon (2036), the model used land use forecasts consistent with the updated Land Use Element. Historical growth rates were applied to all roadways external to the City that function as connections between Port Orchard and the surrounding region.

An initial traffic forecast scenario assumed that the existing street network will be maintained with no improvements in the next 20 years. This "no build" condition was used to identify locations where improvements will be necessary to maintain minimum LOS standards. A proposed street network improvement list was then developed and the improvement projects were tested in the model to identify growth-driven improvement projects.

8.7. Future System Needs

8.7.1. Forecasted LOS Deficiencies

Based on the citywide transportation model, the intersections and street segments identified in Table 8-15 and Table 8-16 will have LOS deficiency by 2036 if no improvements are made to the existing street network.

Table 8-15. 2036 Segment Level of Service Deficiencies - Without Improvement

Segment ID	Name	Cross Street A	Cross Street B	Functional Classification	V/C	LOS
2004	Bethel	Sedgwick Rd	Salmonberry	Principal Arterial	1.30	F
2005	Bethel	Salmonberry Rd	Lund	Principal Arterial	1.56	F
2006	Bethel	Lund Ave	Mitchell Rd	Principal Arterial	1.10	F
3005	Bethel Rd	Bielmeier Rd	Sedgwick (SR160)	Minor Arterial	0.95	E
3006	Jackson Ave	Sedgwick (SR160)	Salmonberry Rd	Minor Arterial	1.04	F
3007	Jackson Ave	Salmonberry Rd	Lund Ave	Minor Arterial	1.01	F
3009	Lund Ave	Sidney Ave	Bethel	Minor Arterial	0.90	E
3010	Lund Ave	Bethel	Jackson	Minor Arterial	0.93	E
3019	Sidney Ave	Sedgwick Rd	Glenwood Rd	Minor Arterial	0.92	E
3020	Sidney Ave	Glenwood Rd	Berry Lake Rd	Minor Arterial	1.11	F
3025	Tremont St	SR 16 WB ramp	Pottery Ave	Minor Arterial	1.22	F
3026	Tremont St	Pottery Ave	PO Blvd	Minor Arterial	1.42	F
4006	Lund Ave	Jackson Ave	Madrona Dr	Urban Collector	0.93	E
4009	Old Clifton	City limits	Anderson Hill Rd	Urban Collector	1.03	F
4010	Old Clifton	Anderson Hill Rd	SR 16	Urban Collector	1.02	F

Table 8-16. 2036 Intersection Level of Service Deficiencies - Without Improvement

Intersection	Control Type[1]	2036 Delay[2] (s/veh)	2036 LOS
Bay St / Port Orchard Blvd	TWSC	>180	F
Bethel / Lund	Signal	100.3	F
Bethel / Sedgwick	Signal	73.1	E
Mile Hill / Jackson Ave	Signal	61.1	E
Old Clifton / Anderson Hill Rd	TWSC	72.3	F
Old Clifton / Berry Lake Rd	TWSC	>180	F
Old Clifton / SR 16 EB ramps	TWSC	168.6	F
Pottery Ave / Lippert	TWSC	>180	F
Sedgwick / SR 16 WB ramps	Signal	79.8	E
Sidney / Berry Lake Rd	TWSC	>180	F
Tremont / Sidney	Signal	104.9	F
Tremont / SR 16 WB ramps	TWSC	>180	F
Outside City Limits			
Bethel / Bielmeier	TWSC	76.6	F
Jackson / Salmonberry	TWSC	>180	F
Sedgwick / Converse	TWSC	>180	F
Sedgwick / Phillips	TWSC	>180	F
SR 16 / Anderson Hill Rd	TWSC	>180	F

[1]TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized
[2]Average control delay for all movements. For TWSC, delay is reported for the movement with the worst (highest) delay.

The locations of forecasted arterial and intersection LOS deficiencies in and near the City are shown in Figure 8-9.

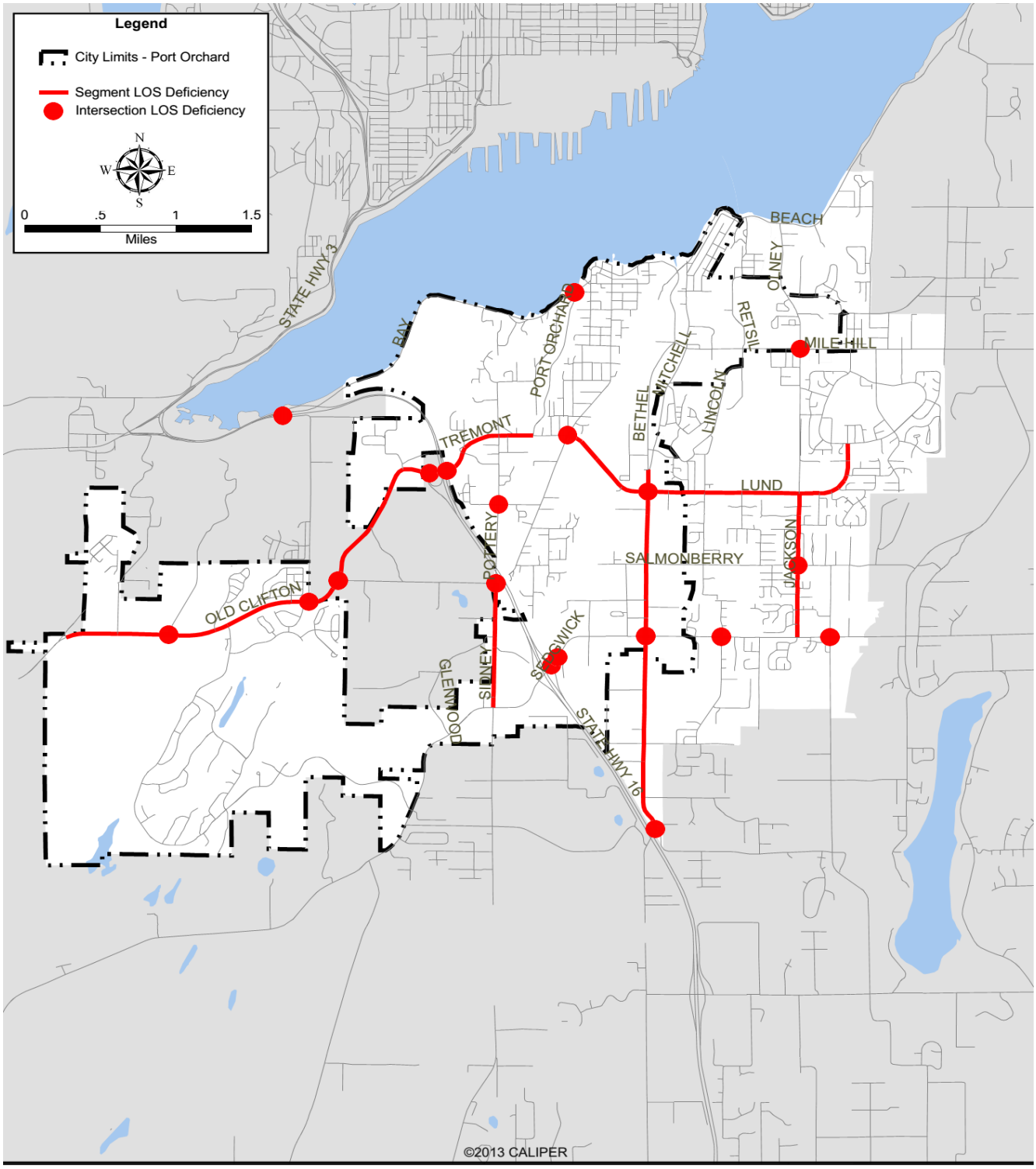


Figure 8-9

TSI Transportation Solutions, Inc.

2036 LOS Deficiencies Without Improvement

City of Port Orchard

8.7.2. Actions Necessary to Maintain LOS Standards

The projects identified in Table 8-17 are necessary to maintain acceptable LOS in 2036 with forecasted traffic growth. Project numbers are included for projects which are included in the transportation component of the City's 2016-2021 Transportation Improvement Plan (TIP). The projects identified in Table 8-17 are shown graphically in Figure 8-10.

The intersection of Old Clifton and McCormick Woods Drive has been identified as a location which will not fail the minimum LOS standard but where safety concerns will arise with increased vehicle and nonmotorized traffic at the existing two-way stop controlled intersection. This intersection has been included in Table 8-17 and Figure 8-10 as a necessary project for safety reasons.

The list of necessary improvements also includes two new roundabouts on SR 160 east of SR 16. These intersections will provide access to commercial development along the SR 160 corridor and are required to maintain LOS standards with forecasted traffic growth along the corridor.

Table 8-17. Projects Necessary to Mitigate Growth-Related LOS Deficiencies

Plan #	Project Name	From/To	Est.Cost ($$$)	Description
1.1	Tremont Street Widening	SR 16 / Port Orchard Blvd	17,500	Widen Tremont from two travel lanes to four travel lanes with median, sidewalks, bike lanes, and roundabouts at SR 16 ramps
1.3	Sedgwick (SR 160) Reconstruction	SR 16 / Bethel	3,063	Corridor plan will determine specific improvements; planning model indicates need for intersection improvements (new roundabouts) at SR 16 ramps
1.4 2.3	Bethel Corridor Reconstruction	Mile Hill Dr (SR 166) / 1,000 ft south of Sedgwick	24,750	Corridor plan needed to determine specific improvements; planning model indicates need for 3 lane (incl. TWLTL) from Sedgwick to Salmonberry, 5 lane (continuous TWLTL) from Salmonberry to Mitchell, and sidewalks and bike lanes from Mitchell to Mile Hill Dr. Intersection improvements at Sedgwick and at Lund (incl. protected/permitted LT phasing).
1.5	Anderson Hill/Clifton Intersection		1,000	Intersection improvements
1.6	Old Clifton/ Campus Parkway Intersection		1,000	Intersection improvements
2.1 2.2	Sedgwick Road West	SR 16 / Sidney Ave	4,624	Widen to 3 lanes (continuous TWLTL), sidewalks, and bike lanes
2.4	SR160 Roundabout #1	Between Bravo Terr & Geiger Rd	1,481	New roundabout
2.5	SR160	Between Geiger	1,481	New roundabout

	Roundabout #2	Rd and Ramsey Rd		
2.8	Sidney Ave Widening	SR 16 overpass / Sedgwick Rd	6,262	Widen to 3 lanes (continuous TWLTL), sidewalks, and bike lanes
2.10	Old Clifton Rd Shoulder and Ped. Improvements	SR 16 overpass / City Limits	2,000	Widen to 4 lanes with grade-separated pedestrian path
2.11	Old Clifton Rd / McCormick Woods Dr Intersection Improvements		1,000	New roundabout[1]
n/a	Lund Ave Sidewalks	Bethel / Jackson	1,325	Complete sidewalks
n/a	Tremont / Sidney Signal Improvements		100	Signal improvements including protected/permitted LT phasing
n/a	Pottery / Lippert Intersection Improvements		1,000	Intersection improvements (signal)
n/a	Mile Hill / Jackson Signal Improvements		100	Improve signal phasing to include protected/permitted LT phasing
n/a	Bay St / Port Orchard Blvd Intersection Improvements		1,000	Intersection improvements (roundabout/signal)
n/a	Jackson Ave Widening (outside City)	Sedgwick / Lund	7,920	Widen to 3 lanes (continuous TWLTL) + sidewalks
		Total Estimated Cost	75,606	

[1]Intersection improvements recommended for safety reasons. Intersection is not forecasted to fail LOS standard but will meet signalization warrant.

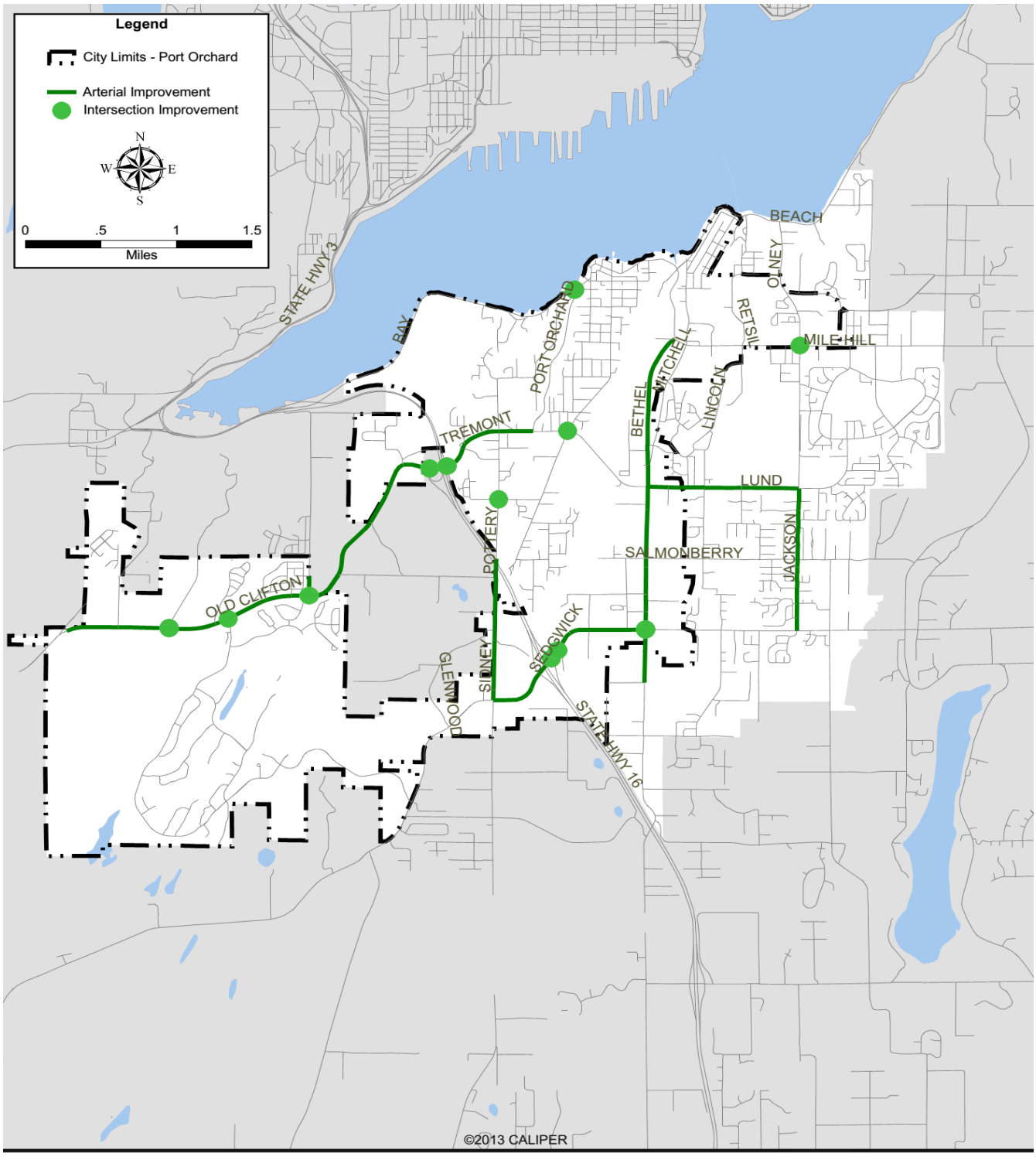


Figure 8-10

TSI Transportation Solutions, Inc.

Projects Necessary to Mitigate 2036 Deficiencies

City of Port Orchard

Tables 8-18 and 8-19 identify all of the intersections and street segments that are deficient in the 2036 without-improvements condition and describes how they meet standards under the 2036 with-improvement condition.

Table 8-18 identifies 5 intersections outside the City which are forecasted to fail by 2036. Intersection operations at Bethel and Bielmeier will be improved by redistribution of traffic associated with other improvements throughout the network. The other failing intersections will continue to fail. Improvements to these intersections are not included in this citywide LOS analysis.

Table 8-18. 2036 Intersection Level of Service Deficiencies - With Improvement

Intersection	2036 No Improvement			2036 With Improvement		
	Control Type[1]	Delay[2] (s/veh)	LOS	Control Type	Delay (s/veh)	LOS
Bay St / Port Orchard Blvd	TWSC	>180	F	RAB	10.7	B
Bethel / Lund	Signal	100.3	F	Signal	41.2	D
Bethel / Sedgwick	Signal	73.1	E	Signal	49.8	D
Mile Hill / Jackson Ave	Signal	61.1	E	Signal	37.4	D
Old Clifton / Anderson Hill Rd	TWSC	72.3	F	RAB	7.4	A
Old Clifton / Berry Lake Rd	TWSC	>180	F	TWSC	28.8	C
Old Clifton / SR 16 EB ramps	TWSC	168.6	F	RAB	14.5	B
Pottery Ave / Lippert	TWSC	>180	F	Signal	5.0	A
Sedgwick / SR 16 WB ramps	Signal	79.8	E	RAB	25.6	C
Sidney / Berry Lake Rd	TWSC	>180	F	TWSC	29.2	D
Tremont / Sidney	Signal	104.9	F	Signal	33.7	C
Tremont / SR 16 WB ramps	TWSC	>180	F	RAB	9.7	A
Outside City Limits						
Bethel / Bielmeier	TWSC	76.6	F	TWSC	23.9	C
Jackson / Salmonberry	TWSC	>180	F	TWSC	>180	F
Sedgwick / Converse	TWSC	>180	F	TWSC	>180	F
Sedgwick / Phillips	TWSC	>180	F	TWSC	>180	F
SR 16 / Anderson Hill Rd	TWSC	>180	F	TWSC	>180	F

Table 8-19. 2036 Segment Level of Service Deficiencies - With Improvement

Name	Cross Street A	Cross Street B	2036 No Improvement		2036 With Improvement	
			V/C	LOS	V/C	LOS
Bethel	Sedgwick Rd	Salmonberry	1.30	F	0.83	D
Bethel	Salmonberry Rd	Lund	1.56	F	0.59	A
Bethel	Lund Ave	Mitchell Rd	1.10	F	0.54	A
Bethel	Bielmeier Rd	Sedgwick (SR160)	0.95	E	0.84	D
Jackson Ave	Sedgwick (SR160)	Salmonberry Rd	1.04	F	0.83	D
Jackson Ave	Salmonberry Rd	Lund Ave	1.01	F	0.81	D
Lund Ave	Sidney Ave	Bethel	0.90	E	0.90	D
Lund Ave	Bethel	Jackson	0.93	E	0.86	D
Sidney Ave	Sedgwick Rd	Glenwood Rd	0.92	E	0.60	B
Sidney Ave	Glenwood Rd	Berry Lake Rd	1.11	F	0.74	C
Tremont St	SR 16 WB ramp	Pottery Ave	1.22	F	0.74	C
Tremont St	Pottery Ave	PO Blvd	1.42	F	0.90	D
Lund Ave	Jackson Ave	Madrona Dr	0.93	E	0.43	A
Old Clifton	City limits	Anderson Hill Rd	1.03	F	0.76	C
Old Clifton	Anderson Hill Rd	SR 16	1.02	F	0.82	D

[1]TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized
[2]Average control delay for all movements. For TWSC, delay is reported for the movement with the worst (highest) delay.

8.8. Transportation Demand Management

Travel Demand Management (TDM) is comprised of a broad range of programs, policies, regulations, and in some capital projects that are intended to reduce travel by automobile or to reduce travel in general. For instance, providing preferential parking and/or cost subsides for carpool users reduces the number of automobiles on the road, while allowing employees to work from home eliminates travel altogether. Some TDM programs are mandated or implemented at the State level, such as Washington's Commute Trip Reduction Act and WSDOT's HOV/Toll Lane Program. Others are regional, including vanpool/rideshare programs administered by transit agencies such as Kitsap Transit. Larger cities have sufficient resources to implement bike share and other capital intensive programs.

Cities like Port Orchard can support state and regional efforts, but can have more influence on travel demand through integrated land use and transportation planning that results in compact mixed-use centers with strong internal non-motorized connectivity and access to regional transit. The subarea plans for these centers that follow the adoption of the Comprehensive Plan should include consideration of non-motorized connectivity standards, a balanced mix of housing, employment, and local services to minimize trips outside of the center. Parking regulations for the centers should consider establishing maximum parking ratios, rather than minimums. Design standards for businesses should include provisions for employees that commute on foot or bicycle and include bicycle storage, changing rooms, and shower facilities. These facilities could be shared in compact or urban village settings.

Other TDM actions the City could consider are included in the following section on TDM effectiveness. There is no one size fits all approach, and for the City of Port Orchard, a combination of small actions at the individual development scale will likely be more cost-effective than citywide programs that may be effective in one part of the city and not in another. Large-scale City sponsored programmatic TDM measures should be considered with caution and partnerships with adjacent jurisdictions and regional partners should be pursued instead.

Overview

TDM activities produce wide-ranging benefits to individuals and the transportation system as a whole, reducing traffic congestion, vehicle emissions, and fuel consumptions while supporting physical activity and enhanced safety. TDM makes existing transportation investments perform better, extends the life of existing infrastructure, and can improve outcomes for new transportation investments. (*Regional TDM Action Plan, 2013-2018 — Puget Sound Regional Council)*

Before presenting some of the key references on TDM effectiveness, some general comments can be made about TDM effectiveness:

One Size Does Not Fit All – TDM effectiveness is highly dependent on the application setting, complementary strategies, nature of the travel market segment being targeted, and even the "vigor" with which TDM is implemented and promoted. Unlike many physical improvements, TDM strategies require some amount of education and outreach. This is all to say that the transferability of TDM strategy effectiveness is highly dependent on local conditions. Some of the more subjective evaluation findings on why a given TDM initiative was more successful in one location over another

are issues such as the presence of a local champion, a history of alternative transportation, and the appropriate selection of a target market of travelers. So, to use another cliché, there is "no one recipe for success" when it comes to TDM effectiveness. There are "ingredients" such as parking pricing that are correlated to program success. However, correlation does not prove causality.

TDM Impacts are Largely Localized – TDM effectiveness is most readily measured at a localized level, and this appears to be where the greatest impacts can be found. TDM is applied to specific worksites, developments, employment centers, venues, or activity centers. Localities with well-defined travel markets tend to produce the most readily available and significant impacts. When the impact of TDM at a broader geographic level is sought, for example at the corridor, city-wide, or regional level, the localized nature of TDM effectiveness diffuses the results at a broader scale. One study of implementing mandatory trip reduction programs in the Twin Cities, with strong parking management in a mixed use setting, showed that the programs would reduce vehicle trips by 8 to 27 percent at affected worksites translating to only a 2 percent peak period traffic reduction on the adjacent interstate. However, small changes in demand (total demand or the spatial or temporal distribution of travel demand) can significantly affect traffic flow in congested locations and times. Likewise, the benefits of demand management accrue to both those who switch to sustainable modes as well as all travelers, including solo drivers (in terms of reduced delay, improved air quality, safety, etc.).

Travelers Respond to Their Wallets - Most evaluation studies point to the overwhelming effectiveness of financial incentives and disincentives to manage demand. At one level, this makes sense as price influences demand in a classic microeconomic analysis. Cordon pricing in London and Stockholm have reduced traffic volumes entering the city center by as much as 20%. Parking pricing is another widely accepted demand management technique. Adding or increasing parking charges at worksites can produce dramatic mode shifts, as reported in Shoup's seminal reference, The High Cost of Free Parking. However, these examples relate to key disincentives to car use. In the U.S., TDM programs focused on modest financial incentives have been highly effective in inducing a shift to more sustainable modes. These incentive programs are often in the form of "Try-It-You'll-Like-It" inducements. For example, the Atlanta Clean Air Campaign's Cash for Commuters offers drive-alone commuters a daily cash incentive ($3/day) for using an alternative mode (carpool, vanpool, transit, bike, walking) for up to 90 days. An independent evaluation showed that the incentive caused 1,800 commuters to switch modes, resulting in 1,300 fewer vehicle trips and 30,000 VMT on the region's highways. More importantly, over 70% of incentive recipients continued their new commute mode after the subsidy lapsed, and half were still using a non-drive alone mode one year later. In the Netherlands, congestion management efforts have resorted to paying commuters to stay off backed-up highways during the peak, so-called Rush Hour Avoidance. Financial levers, even modest amounts, can influence travel behavior in a very significant manner.

Parking Influences Travel Choices - Parking management is another widely accepted strategy to effectively change travel behavior, especially mode shift, time shift, and location shift. Parking pricing was mentioned above, but parking supply management can be effective as well. If parking is tight, meaning that all cars cannot be accommodated if everyone drives alone, commuters will adapt by sharing rides, shifting to transit, or even bicycling or walking if the distance allows. One study of developer TDM requirements revealed an 11 to 21 percent reduction in parking demand among worksites with aggressive TDM programs. Travel demand can be influenced by time of day

and short- vs. long-term parking rates to reduce travel, including cruising for parking, during congested periods.

Packaging is Key - TDM strategies are most effective when packaged into logical, complementary packages to realize synergistic effects. On the other hand, some strategies do not complement one another. One example of an unintended consequence from traditional TDM is flex-time and carpooling. Some employers who implement flex-time strategies as an employee perk or to address congestion at parking entrances have found that this can also serve to discourage ridesharing arrangements, which tend to do better with set work hours. At the same time, flexibility could reduce the peak period volumes and improve flow without changing mode split. Looking at some newer strategies, such as HOT lanes, efficiency improvements can also work to discourage some ridesharing arrangements. HOT lane projects which need to raise vehicle occupancy requirements from 2+ to 3+ in order to create sufficient capacity to sell may serve to break apart existing two-person carpools who choose to drive alone in the mixed flow lanes rather than pay a toll or find another rider.

But complementary measures can lead to greater results than strategies implemented alone. The effect of many TDM strategies is multiplicative: the impact of any one measure on VMT reduction or mode shift might be modest, but the combined effects from improving upon several, complementary measures can be substantial. For example, systems management improvements, such as ramp metering, can be complemented with provisions for HOV bypass lanes, employer trip reduction programs in the corridor, and traveler information that includes HOV time savings among the traffic statistics provided. One study concluded that employer TDM programs that combined incentives and improved commute alternatives experienced an average trip reduction of almost 25%, where those implementing incentives alone realized a 16.4% reduction and alternatives alone 8.5%. As one international TDM study put it: "Experience throughout the Organisation for Economic Co-operation and Development (OECD) region has shown that… packaged, complementary solutions are usually more effective than a single measure."

TDM is Not a Solution to All Transportation Problems – TDM can be highly effective at a relatively low cost (as compared to capacity enhancements) when applied in the right place, at the right time for the right travel market. However, TDM, in and of itself, is not adequate to solve congestion, air quality, energy, and other urban woes. Too often the expectations are unstated or disconnected from allocated resources and incompatible policies (e.g., developers are required to build a minimum number of parking spaces, often offered for free to employees and customers, that serves to generate even more driving). As mentioned above, TDM is most effective, or at least most measurable, at the localized level. The impact of TDM at a corridor or regional level is very hard to evaluate. Modeling and simulation, such as that done using employer trip reduction data to show the likely impact of TDM on I-5 in Seattle, suggests that aggressive and relatively widespread TDM programs at a local level can have a measurable and significant impact on a corridor. However, it is very difficult to measure empirically given issues of multiple influences, externalities, and causality. This clearly points to the need to carefully marry TDM strategies to smart infrastructure enhancements, such as ATM. When efficiency improvements are combined with efforts to reduce peak demand, the greatest impacts should be realized.

Traditional TDM

- HOV/HOT/ Managed Lanes
- Employer Trip Reduction Programs
- Alternative Work Arrangements
- School-based Trip Reduction
- Event-based Trip Reduction
- Recreation-based Trip Reduction
- Car-sharing
- Vanpool Programs

Land Use/Active Transportation

- Developer Trip Reduction
- Land Use Strategies
- Car-free or Access-restricted Zones
- Bicycle Facilities and Programs
- Pedestrian Facilities and Continuity

Transit

- Transit Service Improvements
- Transit Prioritization/BRT
- Transit Fare Discounts
- Park and Ride Lots

Parking

- Parking Information
- Parking Supply Management
- Parking Pricing

Pricing

- Cordon Pricing

- Congestion Pricing
- General Financial Incentives
- VMT Tax

Systems Management

- Ramp Metering
- Integrated Corridor Management
- Traveler Information
- Eco-driving

Other Impacts

The sections above have discussed the documented impacts of TDM on travel behavior, traffic, and air quality. This section suggests that TDM can have a positive impact on other policy objectives, such as goods movement, land use, livability, and economic development. Unfortunately, very little empirical research exists documenting the impact of TDM strategies toward these policies in a comprehensive, systematic, and comparative manner. As such, individual case studies are summarized below:

Goods movement – A strategy of consolidated deliveries has been shown to reduce the number of delivery vehicles, in places like Burgos, Spain, but other impacts have not been documented, such as congestion reduction. A delivery scheme in two French cities, using electric vehicles, reduced related CO2 by 58%. Pricing strategies, on the other hand, have been proven to be quite effective. Truck tolling in Germany has resulted in a small shift from truck to rail and a reduction in empty deadheading trips. Peak period fees (Pier Pass) at the Port of Los Angeles have reduced congestion in the terminal areas and have reduced midday truck volumes on I-710.

Land use – TDM is often used as a mitigation strategy to reduce the additional trips generated by new development, and success cases revealing trip reductions on the order of 10-25% are fairly abundant. Land use and design issues, as a longer-term strategy, have the potential to increase non-automobile modes, as revealed in comparisons of the mode split between towns with and without good bike, pedestrian, and transit infrastructure.

Livability – Measuring the impact of TDM on livability can be a subjective process. But livability might be seen as the product of several other effective roles for TDM, namely reduced congestion, increased safety, improved environment, and healthy economic conditions. Mostly, livability can be associated with increased travel choices, a fundamental purpose of demand management.

Economic Development – In mitigating the negative impacts associated with growth (congestion, air pollution, energy consumption, reduced safety), TDM can improve the attractiveness of a region or city to prosper economically. As seen in cases such as Lund, Sweden, and the Sustainable Travel Town pilots in the U.K., economic growth can be decoupled from traffic growth. In Lund, the region

grew substantially (population and employment) during a period when TDM was being implemented, reducing VMT by 1-2% overall. The growth in travel demand was met by increases in transit use and bicycling.

FHWA-HOP-12-035, INTEGRATING DEMAND MANAGEMENT INTO THE TRANSPORTATION PLANNING PROCESS: A DESK REFERENCE, August 31, 2012

8.9. Financial Analysis and Concurrency

The State of Washington's Growth Management Act (GMA) requires that a jurisdiction's transportation plan contain a funding analysis of the transportation projects it recommends. The analysis should cover funding needs, funding resources, and it should include a multi-year financing plan. The purpose of this requirement is to insure that each jurisdiction's transportation plan is affordable and achievable. If a funding analysis reveals that a plan is not affordable or achievable, the plan must discuss how additional funds will be raised, or how land use assumptions will be reassessed.

The City of Port Orchard is including the financial element in this transportation plan in compliance with the GMA as well as to provide a guide to the City for implementation of this plan.

8.9.1. Federal Revenue Sources

The Fixing America's Surface Transportation (FAST) Act (P.L. 114-94), was signed into law by President Obama on December 4, 2015. Funding surface transportation programs at $305 billion for fiscal years (FY) 2016 through 2020, the FAST Act replaces the Moving Ahead for Progress in the 21st Century Act (MAP-21) as the latest long-term highway authorization.

The FAST Act largely maintains much of the policy and programmatic framework established by MAP-21. It includes increased funding for the performance-based Surface Transportation Block Grant Program (STBGP) and makes an additional $116.4 billion available to locally-owned infrastructure.

FAST Act Overview in Washington

The five-year FAST Act was signed into law by President Obama on December 4, 2015, and covers from October 1, 2015 through September 30, 2020. The FAST Act funds surface transportation programs at $305 billion for federal fiscal years (FFY) 2016 through 2020. The state can expect to receive almost $3.6 billion in Federal Highway Administration funds via the FAST Act, starting with $687 million in 2016 and growing to $750 million by 2020.

In October 2012, Governor Christine Gregoire convened a Steering Committee to recommend how to distribute the highway funds between the State and local governments. The Committee met twice and agreed to maintain an overall split of 66/34 (66% State / 34% Local).

8.9.2. Other Existing Transportation Revenue Services

Funding for road improvements are comprised of numerous sources of revenue. A summary of these sources is shown in Table 8-22.

Table 8-22. Possible Transportation Revenue Sources

Street Fund	The Street Fund for the City is comprised of revenue from the motor vehicle excise fuel tax and a portion of property tax revenue. It is allocated to the City based on the number of residents within the corporate limits. These funds can be used only for road projects.
Current Expense	The City has supplemented the Street Fund with Current Expense money in previous years. Current Expense funds are have many sources including business taxes, local retail sales and use tax, property taxes, and motor vehicle excise tax.
Transportation Impact Fee Program	In 2015 the City adopted a transportation impact fee, a financing tool which allows the collection of revenue to offset the traffic impacts of new development. The impact fee rate is based the net new PM peak hour trips generated by a development and is set at $2,552.24 per vehicle trip.
Transportation Improvement Account (TIA)	The Transportation Improvement Board (TIB) is a Washington State Department of Transportation (WSDOT) organization used to distribute funds for road projects. The TIA funds are from a 1.3-cent motor vehicle fuel tax and are used for achieving a balanced transportation system. Multi-agency projects are a requirement.
Urban Arterial Trust Account (UATA)	The TIB administers this program which is funded by a 1.74-cent motor vehicle fuel tax. The program funds projects which reduce congestion and improve safety, geometrics and structural concerns.
FAST Act	Fixing America's Surface Transportation (FAST) Act funds are federal funds to allow road improvements. These are programmed through the Metropolitan Planning Organization and the Puget Sound Regional Council. These funds are managed by WSDOT.
Grants	Numerous infrastructure and transportation grants from local, state, federal, and private sources may be identified to assist with the funding of the Port Orchard transportation improvements.

8.9.3. Nonmotorized Revenue Sources

Safe Routes to School

Washington State offers competitive grants to local jurisdictions through the federal Safe Routes to School program. The programs aim to increase the ability of young students to walk and bike to school on their own by providing non-motorized infrastructure between schools and residential areas and on the streets fronting schools. A call for funding requests is made during the biennium state budget cycles.

By partnering with South Kitsap School District, Port Orchard can identify neighborhoods and streets most in need of non-motorized infrastructure and develop stronger grant applications.

Other Nonmotorized Funding Sources

Washington State and the federal government offer a number of competitive grant funding sources for non-motorized infrastructure, including trails, sidewalks, crossing improvements, and transit station amenities.

- Washington State Recreation and Conservation Office: http://www.rco.wa.gov/grants/index.shtml
- Puget Sound Regional Council Transportation Improvement Program: http://www.psrc.org/transportation/tip/amendments/applications/
- United States Department of Transportation TIGER Discretionary Grants: http://www.transportation.gov/tiger
- Federal Transportation Administration Bicycle Funding Opportunities: http://www.fta.dot.gov/13747_14400.html
- Federal Highway Administration Transportation Alternatives Program: http://www.fhwa.dot.gov/environment/transportation_alternatives/
- Federal Highway Administration Recreational Trails Program: http://www.fhwa.dot.gov/environment/recreational_trails/

Local funding from the City's general funds, a transportation impact fee, and a local transportation benefit district are also options.

8.9.4. Revenue Forecast

The projected revenues for the City's Street Operation and Street Capital funds are shown in Table 8-23. Approximately 42 percent of funding for the City's Transportation Capital Facilities Plan will come from Intergovernmental Revenue. Transportation Impact Fees and other miscellaneous revenue are expected to fund approximately 7 percent. The City may consider implementing new revenue sources, such as a TBD (discussed above), if deemed appropriate and necessary in the future. The remainder of the Transportation Capital Facilities Plan will be funded by transfers from other City unrestricted revenue sources and issuing debt as needed. This strategy ensures that the City can accomplish the transportation plan and use the available funding options efficiently.

This forecast was prepared by projecting historic trends from the City's financial records. It was then adjusted based on a projected growth of 1% to 3% per year, depending on other known factors that could influence the specific category of revenue.

Table 8-23. Port Orchard Transportation Revenue Forecast 2016 to 2036 ($000)

Funding Source	Description	Revenue Forecast			
		Short Range 2016 - 2021	%	Long Range 2022 - 2036	%
Street Operating Fund - Unrestricted					
Licenses & Permits	Right of way encroachment permit fees	$0	0%	$0	0%
Intergovernmental Revenue	City Share of motor vehicle fuel tax (MVFT)	$1,615,000	21%	$3,800,000	20%
Charges for Services	Fees for services rendered by transportation operations staff including plan review and construction inspection	$0	0%	$0	0%
Miscellaneous	Other sources of unrestricted revenue	$60,000	1%	$168,000	1%
Transfers/Other	Transfers to support transportation operations, maintenance and administration	$6,000,000	78%	$16,000,000	79%
TOTAL - Street Operating		**$7,675,000**	**100%**	**$19,168,000**	**100%**
Street Capital Fund - Restricted					
Intergovernmental Revenue *	Grants & Fuel Tax	$17,785,000	54%	$200,000	1%
Miscellaneous***	Transportation Impact fees, SEPA Mitigation fees, developer contributions, interest	$4,925,825	15%	$13,792,310	99%
Transfers In	Transfers to support capital projects	$2,471,000	7%	$0	0%
Other - New Debt, other new funding sources	Bonds, Low Interest Loans, Possible Transportation Benefit District	$ $17,068,175	40%	$19,363,690	58%
TOTAL - Street Capital		**$42,250,000**	**100%**	**$33,356,000**	**100%**

* Includes grants and direct appropriations

** Out of $2 million per year for total revenue from source, assumes 50% for street capital projects

*** Includes estimated 10% increase in transportation impact fee amounts due to planned TIF update in 2015

8.9.5. Capital Costs for Recommended Improvements

There are several capacity related improvements within the Port Orchard Planning Area that are necessary to maintain minimum levels of service. Table 8-24 identifies the capacity-related improvements that will be necessary to maintain level of service standards in the short term

(through 2022). Additional capacity-related improvements will be necessary to meet level of service standards for the long range forecast (2036).

The capacity-related improvements identified in Table 8-25 will be necessary to meet GMA level of service standards in 2036.

Table 8-24. Previously Identified Projects Necessary to Address Growth

Plan #	Project Title	From/To	Estimated Cost ($$$)
1.1	Tremont Widening	SR 16 / Port Orchard Blvd	17,500
1.4/2.3	Bethel Corridor Reconstruction	Mile Hill Dr (SR 166) / 1,000 ft south of Sedgwick	24,750
		Total Estimated Cost	42,250

Table 8-25. Projects Necessary to Mitigate Future Growth-Related LOS Deficiencies

Plan #	Project Name	From/To	Estimated Cost ($$$)
1.3	Sedgwick (SR 160) Reconstruction	SR 16 / Bethel	3,063
1.5	Anderson Hill/Clifton Intersection		1,000
1.6	Old Clifton/ Campus Parkway Intersection		1,000
2.1 2.2	Sedgwick Road West	SR 16 / Sidney Ave	4,624
2.4	SR160 Roundabout #1	Between Bravo Terr & Geiger Rd	1,481
2.5	SR160 Roundabout #2	Between Geiger Rd and Ramsey Rd	1,481
2.8	Sidney Ave Widening	SR 16 overpass / Sedgwick Rd	6,262
2.10	Old Clifton Rd Shoulder and Ped. Improvements	SR 16 overpass / City Limits	2,000
2.11	Old Clifton Rd / McCormick Woods Dr Intersection Improvements		1,000
n/a	Lund Ave Sidewalks	Bethel / Jackson	1,325
n/a	Tremont / Sidney Signal Improvements		100
n/a	Pottery / Lippert Intersection Improvements		1,000
n/a	Mile Hill / Jackson Signal Improvements		100
n/a	Bay St / Port Orchard Blvd Intersection Improvements		1,000
n/a	Jackson Ave Widening (outside City)	Sedgwick / Lund	7,920
		Total Estimated Cost	33,356

[1]Intersection improvements recommended for safety reasons. Intersection is not forecasted to fail LOS standard but will meet signalization warrant

8.9.6. Summary of Costs and Revenues

Based on the revenues and costs listed above, the proposed transportation element improvements are affordable within the City's expected revenues for transportation capital costs. Table 8-26 summarizes costs and revenues for the short and long range forecasts analyzed in the transportation element. It is important to note that the revenues portrayed include the proceeds of additional debt issues. This is based upon an assumption that additional debt will be necessary to fully fund the transportation improvement program. The new debt is assumed to be bond debt issued over 20 years at 4.5% interest. However, it should also be noted that the City has not made any assumptions related to grant funding or other low interest loans such as from Federal or State programs. The City has traditionally been able to tap these sources, and continuing to do so would reduce the need for new bond issues which similarly could produce more favorable terms for the City's transportation program.

The proposed Transportation Capital Facilities Plan, including both short and long range improvement lists, is estimated to cost $75,606,000. Proposed improvements and expected revenues are therefore balanced as shown in the Table 8-26 below.

Table 8-26. Summary of Capital Costs and Revenues

Category	Short Range 2016-2021	%	Long Range 2022-2036	%	Total 2016-2036	%
Projected Revenues	$42,250,000	100%	$33,356,000	100%	$75,606,000	100%
Predictable sources	$25,181,825	60%	$13,992,310	42%	$39,174,135	52%
Debt sources	$17,068,175	40%	$19,363,690	58%	$36,431,865	48%
Projected Expenditures	$42,250,000	100%	$33,356,000	100%	$75,606,000	100%

The proposed financial strategy relies upon a conservative assumption for state and federal grants and an assumption that additional city debt may be necessary to balance the plan financially. If state and federal grant availability increases over the planning period the reliance on future debt financing will be reduced.

8.10. Intergovernmental Coordination

The City of Port Orchard works to maintain positive relationship with neighboring jurisdictions, regional agencies and service providers, and state and federal governments. The City has a shared interest and concern in maintaining a vital local and regional economy, and a high quality of life for its citizens, which depend on transportation mobility across jurisdiction boundaries. The City has agreements in place that demonstrate its active commitment to working with Kitsap County, other regional partners and state and federal agencies to address transportation issues, share information and solve problems. The development and ongoing monitoring of the City's Comprehensive Plan demonstrates that commitment. The Growth Management Act requires that plans between neighboring jurisdictions maintain a level of consistency through coordination of planning efforts.

Increasingly, Port Orchard's transportation system functions as an integral part of a larger regional system – of roadways, transit routes, park and ride lots, ferry routes, and non-motorized facilities that allow walking and/or biking the first and final mile, and making connections in between.

The development of this Plan depended on land use forecasts provided by the Puget Sound Regional Council. Coordination efforts are expected to be ongoing with:

- Washington State Department of Transportation (WSDOT) on the recommended revisions to the City's Roadway Functional Classification System, the addition of new truck routes to the state Freight and Goods Transportation System (FGTS), and needed improvements on designated State Routes within the city;

- Kitsap Transit on Transportation Demand Management activities by major employment sites, providing access to ferry and transit facilities and services, and on maintaining and expanding transit service quality within the City;
- Kitsap County to address the needs of travel across jurisdiction limits, including mitigating the impacts of land use development outside the City, providing for needed street improvements in annexation areas, and furthering the expansion of the regional non-motorized trail system.

Lastly, the City anticipates a certification review of this Comprehensive Transportation Plan Element by the Puget Sound Regional Council to ensure its conformity with the adopted regional Vision 2040 plan.

8.11. Transportation Goals and Policies

The goals and policies for transportation provide the primary foundation for this Transportation Chapter and support the overall vision of the Comprehensive plan. These goals and policies are organized under the following categories: general transportation goals; transit goals, non-motorized goals; vehicular travel and roadways; performance standards; linkages with other elements; and community character.

State Objectives: Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans. [RCW 36.70A.020 (3)]

General Transportation Goals

Goal 1. Encourage development of an efficient multi-modal transportation system based on local, municipal, tribes, countywide, and regional priorities in coordination with existing comprehensive and corridor development plans.

Policy TR-1 Implement the roadway design standards, including acquisition of right-of-way as needed, as defined in the City's transportation Capital Facilities plans and Port Orchard Road Standards.

Policy TR-2 Implement necessary transportation improvements as development in the City occurs, consistent with the City's Concurrency policies and SEPA requirements.

Policy TR-3 Require new development and redevelopment to incorporate transit, pedestrian and other non-motorized transportation improvements, including bus shelters and/or pullouts, sidewalks, pathways, crosswalks, and bicycle lanes.

Policy TR-4 Prioritize transportation improvements, including non-motorized transportation and mass transit facilities, within designated centers of local importance.

Goal 2. Provide a safe, comfortable and reliable transportation system.

Policy TR-5 Control the location and spacing of commercial driveways and the design of parking lots to avoid traffic and pedestrian accidents, confusing circulation patterns, and line-of-sight obstructions.

Policy TR-6 Designate and clearly demarcate appropriate routes for through truck traffic, hazardous materials transport, and oversized traffic.

Policy TR-7 Require new development and redevelopment to incorporate appropriate street lighting as defined in the Port Orchard City Road Standards.

Policy TR-8 Include sidewalks as required in the Port Orchard City Road Standards.

Goal 3. Develop a funding strategy and financing plan to meet the multi-modal and programmatic needs identified in the transportation element.

Policy TR-9 Provide sufficient flexibility in the funding process to maximize the ability of local government to develop partnerships with federal and regional governments, other jurisdictions and the private sector to optimize funding sources for transportation projects.

Policy TR-10 Establish public/private partnership programs for funding the needed transportation improvements. Private sector funding generated within the City should primarily be allocated to improvements in or adjacent to Urban Growth Areas near the City.

Policy TR-11 Require developers to provide on-site and off-site road, safety, and other transportation improvements where necessary to serve the needs of the proposed developments and mitigate the impacts of their development on the surrounding neighborhoods.

Policy TR-12 Consider potential funding mechanisms such as, creation of a Port Orchard Traffic Impact Fee (TIF Program), establishment of a Transportation Benefit District (TBD), Proportional Share Mitigation via SEPA, grant funding, and Road Improvement Districts.

Policy TR-13 Work with Washington State Department of Transportation, Kitsap Transit, and the private sector to seek additional state and federal grant revenues for infrastructure improvements.

Policy TR-14 Allow phased development of transportation improvements.

Goal 4. Ensure the citizens and businesses in South Kitsap have the opportunity to participate in the development of transportation planning policy.

Policy TR-15 Establish and maintain a program for accessing and responding to local, community, and residential neighborhood traffic control concerns.

Policy TR-16 Maintain a transparent prioritization process for the development of the Port Orchard Six-Year Transportation Improvement Program.

Goal 5. Develop and implement Transportation programs within the City to assist in the application, monitoring, and review of transportation goals and policies.

Policy TR-17 Monitor the success of Transportation Demand Management (TDM) and Commute Trip Reduction Program (CTR) for the City of Port Orchard and the entire South Kitsap Area in coordination with Kitsap County.

Policy TR-18 Develop one or more Transportation Management Programs (TMP) for the major development components of the City or communities within Port Orchard.

Policy TR-19 Encourage TMPs to be developed for commercial, business park, and industrial uses within the City.

Transit and Non-Motorized Goals

Goal 6. Provide a range of infrastructure incentives to encourage the use of non-single-occupancy vehicle modes of travel.

Policy TR-20 Provide preferential treatments for transit, such as queue bypass lanes, traffic signal modifications, and safe, convenient, transit stops.

Goal 7. Work with Kitsap Transit to provide increased transit service to the City as development occurs.

Policy TR-21 Identify possible corridors for future mass transit development such bus rapid transit, etc.

Policy TR-22 Encourage new development and redevelopment to include provision for bus pullout lanes, bicycle storage facilities, and safe, attractive transit shelters where appropriate.

Policy TR-23 Support efforts to expand usage and infrastructure for mass transportation. Promote public/private partnerships, joint-use facilities, and Transit Oriented Developments within the City and adjacent Urban Growth Areas.

Policy TR-24 Encourage installation of bicycle racks on buses and other transit vehicles.

Policy TR-25 Work closely with Kitsap Transit in development of Park and Ride locations within and adjacent to the City. Ensure that land use and the site development are compatible with the goals and policies of the community.

Policy TR-26 Park-and-Ride locations should be close to areas of housing, preferably within the City or adjacent Urban Growth Area boundary.

Policy TR-27 Work closely with Kitsap Transit in the development of Transfer Centers and Multi-Modal Terminal locations within and adjacent to the City. Encourage and ensure that land use and site development are compatible with the goals and policies of the community.

Goal 8. Create a Transit Oriented Development (TOD) program in coordination with Kitsap Transit, Port Orchard Public Works Department, the Kitsap County Public Works Department, Port Orchard Planning Department and the Kitsap County Department of Community Development, with a special focus on the City's approved centers of local importance.

Policy TR-28 Work with Kitsap Transit to develop a model Transit Oriented Development ordinance, policy, and development regulations to ensure that the program is compatible with the goals and policies of the community.

Policy TR-29 Throughout the City, promote pedestrian and transit oriented development that includes access to alternative transportation and, in the interest of safety and convenience, includes features such as lighting, pedestrian buffers, and sidewalks.

Policy TR-30 Develop site-specific Transit Oriented Development standards and incentives for the City's approved centers of local importance, to encourage development and redevelopment that efficiently utilizes existing public services and that provides a diverse mix of land uses accessible by transit to center visitors and residents.

Goal 9. Work with Kitsap Transit to establish and designate convenient park and ride locations.

Policy TR-31 Give priority to establishing park and ride lots in existing parking lots.

Policy TR-32 Form partnerships with community organizations along easily accessible arterials that have underutilized or dormant parking during traditional commuting hours (i.e. churches, movie theaters, etc.).

Policy TR-33 Support development of park-and-ride lots to serve the transportation needs of the City and adjacent Urban Growth Areas.

Policy TR-34 Encourage park and ride lots within the City and adjacent Urban Growth Areas that are near residential areas.

Goal 10. Promote pedestrian, bicycle and other non-motorized travel.

Policy TR-35 Require that internal streets make provision for non-motorized transportation opportunities, consistent with Port Orchard City Road design standards or approved variances.

Policy TR-36 Require new development within the city to provide internal trails or paths that connect residential, neighborhood commercial, business parks, and other land uses within the city.

Policy TR-37 Ensure that trails and paths provide convenient connections within City.

Policy TR-38 Require new development and redevelopment to provide safe neighborhood walking and biking routes to schools.

Policy TR-39 Adopt and require Kitsap County Bicycle Facilities Plan or similar recommended design standards for development of bicycle improvements including surfacing materials, signage, striping, drainage, barriers, bridges, lighting, parking facilities, width, grade separation, design speed, sight distances and horizontal and vertical clearances.

Policy TR-40 Maintain existing and create new, engineered bike lanes.

Policy TR-41 Require new development and redevelopment to comply with adopted street standards that require bike lanes on identified bike routes.

Policy TR-42 Promote completion of "Mosquito Fleet" trail and pedestrian path components along Beach Drive. Require new development or redevelopment to provide paved shoulders along Beach Drive within Port Orchard City Limits extending to E. Ahlstrom Road.

Policy TR-43 Require all new development and redevelopment projects to install frontage improvements, including new sidewalks, and bike lanes along Bay Street and Bethel Avenue.

Policy TR-44 All new developments and redevelopment projects along the waterfront shall be encouraged to install a minimum 10-foot wide boardwalk adjacent to the shoreline, to be dedicated to the City, along the entire width of the property.

Goal 11. Work to decrease the number of single-occupant vehicle (SOV) trips generated within the City, and support a mix of land uses to help internalize traffic within the City and to provide a relatively balanced use of transportation capacity during peak travel periods.

Policy TR-45 Emphasize moving people rather than vehicles by providing a variety of ways to commute to work.

Goal 12. Create a walking and bicycling network for Port Orchard that prioritizes safety, connectivity, convenience, and cost effectiveness.

Policy TR-46 Increase the share of Port Orchard residents who bike and walk to work and school, and who walk and bike for social and recreational purposes.

Policy TR-47 Prioritize walking and bicycling paths which connect schools, centers of local importance, grocery stores and shopping centers, and parks.

Policy TR-48 Prioritize the walking and bicycling paths that will serve the greatest numbers of residents and businesses and facilitate economic development opportunities.

Policy TR-49 Develop a program to collect data on nonmotorized traffic volumes on a regular basis and to report collisions involving people walking and bicycling.

Policy TR-50 Integrate walking and bicycling facilities with other transportation options, include park-and-ride lots, parking facilities at public parks, and transit stops.

Policy TR-51 The design of intersections on designated walking and bicycle routes shall prioritize people walking and bicycling through intersection geometry, signal phasing, pavement materials, and other means.

Policy TR-52 Within centers of local importance, on arterial streets there should be a designated pedestrian crossing at least every 500 feet or less.

Policy TR-53 Consider creative options for protecting walking and bicycle facilities from vehicle traffic, such as with parked cars or planters.

Goal 13. Create a citywide pedestrian and bicycle network for Port Orchard.

Policy TR-54 "On street - arterial" shall be assigned to any trail designated in public right-of-way with more than three vehicle traffic lanes, where AADWT is more than 5,000, or at the discretion of the Public Works director. Maximum speed limits on arterial streets with this designation shall be 30 miles per hour. The following standards apply to such trails.

Walking

Option 1: Sidewalks at least 6 feet wide on both sides of the street.

Option 2: One sidewalk at least 10 feet wide on one side of the street.

At intersections people walking are prioritized with improved signal timing, curb ramps, and curb bulbs. At mid-block, crossings shall be user-activated flashing beacons. Preferably, crosswalks are paved with materials that contrast in color and texture with standard roadway pavement.

Bicycling

Option 1: One-way bicycle lanes at least 6 feet wide on both sides of the street located curbside. Preferably they have a visual or physical safety buffer of at least 2 feet from vehicle lanes, in which case the bicycle lane can be narrowed to 5 feet.

Option 2: One 10 feet wide two-way bicycle lane with a buffer of at least 2 feet on one side of the street.

Option 3: One-way (at least 5 feet wide on both sides of the street) or two-way (at least 10 feet wide on one side of the street) bicycle lanes raised up from the roadway on the outside of the curb and adjacent to the sidewalk.

At intersections bicycle paths are marked by painted lanes and signage shall indicate the presence of people bicycling. Enhanced treatments, such as bicycle traffic signals or pavement sensors for bicycles, shall be installed where vehicle traffic is significant.

Policy TR-55 "On street – residential" shall be applied to trails designated in public right-of-way with two or less vehicle traffic lanes AND where the predominant surrounding land uses are residential. Maximum speed limits on residential streets with this designation shall be 20 miles per hour. The following standards apply to such trails.

Walking

Option 1: One sidewalk at least 6 feet wide on one side of the street. At intersections there are curb ramps.

Option 2: Road shoulders at least 8 feet wide on at least one side of the street. Parking is prohibited in the road shoulder designated for walking.

At intersections there are painted crosswalks.

Bicycling

Option 1: One-way bicycle lanes at least 5 feet wide on both sides of the street and preferably curbside.

Option 2: There are no dedicated bicycle lanes, but pavement markings and street signage indicate people bicycling share the road with people driving. Preferably there are also speed bumps, roundabouts, and other traffic calming features.

Policy TR-56 "Off street" shall be applied to trails designated in public right-of-way or access easements where the predominant surrounding land uses are rural, residential, or greenbelt. The following standards apply to such trails.

Paved and continuous multi-use trail at least 12 feet wide separated from vehicle traffic. If parallel to a roadway, it shall have a landscaped buffer with trees that is at least 4 feet wide. Pedestrian-scale lighting illuminates the trail at night where appropriate. Preferably, there are other amenities spaced along the trail like seating areas, waste bins, and wayfinding signage.

Enhancement Option 1: Signage and pavement markings indicate separate areas for people walking and people using wheeled devices.

Enhancement Option 2: Grade separation and rolled curb separates areas for people walking and people using wheeled devices.

Policy TR-57 Where right-of-way is unavailable and traffic volumes permit, the City shall consider road diets (reduction and/or narrowing of vehicle lanes) to meet the trail standards.

Goal 14. Integrate walking and bicycle facilities into private development in a way that minimizes impacts on the development process and property owners.

Policy TR-58 Set minimum bicycle parking quantities and secure bicycle parking and storage standards for private development.

Policy TR-59 As much as possible, locate nonmotorized transportation facilities within existing public right-of-way.

Policy TR-60 Nonmotorized connections between residential and commercial developments should be required. Through paths shall be required between residential subdivisions, large commercial parcels, and through the ends of dead-end streets where applicable.

Policy TR-61 Limit the number of driveways crossing citywide walking and bicycling facilities.

Policy TR-62 Design nonmotorized transportation facilities to safely accommodate business deliveries and freight traffic.

Goal 15. Commit to an implementation plan and partner with other local jurisdictions, including Kitsap County and the Port of Bremerton, to complete the trail network outside of the City's jurisdiction.

Policy TR-63 Build out the trail network on a mile-by-mile basis during major street rehabilitations.

Policy TR-64 Pursue local, state, and federal funding options for design and construction of nonmotorized transportation facilities.

Policy TR-65 Partner with Kitsap County in design and funding to complete the trail network in the Port Orchard Urban Growth Area prior to a planned annexation. Encourage Kitsap County to complete the trail network in unincorporated areas outside of the Urban Growth Area, as these trails would still serve Port Orchard residents.

Policy TR-66 Partner with South Kitsap School District to pursue non-motorized infrastructure funding through the Safe Routes to School funding. Prioritize projects that will help students walk and bike to schools.

Policy TR-67 Set a goal towards implementation of this plan, such as completing the trail network within 10 years or building at least two miles per year.

Goal 16. Design and implement enforcement and education programs that promote the safety of people walking and bicycling.

Policy TR-68 The Police Department should conduct traffic patrols when students are arriving to and departing from schools to emphasize traffic safety.

Policy TR-69 Install speed cameras in school speed zones to enforce 20 mile per hour speed limits when they are applicable.

Policy TR-70 Post route and safety information about walking and bicycling facilities on the City website, at local schools, at community centers, at transit centers, and other places of public gathering.

Policy TR-71 Designate a Public Works, Community Development, or Police Department position as a "street safety officer", or contract with a private outreach firm, to teach public education on street safety for school groups, community organizations, and to organize community events.

Policy TR-72 Promote participation in walk/bike to school and work days.

Vehicular Travel and Roadways

Goal 17. To provide an adequate system of arterials and collector streets which connect the City and adjacent development areas to the State highway system and adjacent arterials.

Policy TR-73 Plan, design, and implement roadway widening and intersection improvements needed to provide additional capacity, and resolve potential operations and safety issues. Ensure that designs address non-motorized travel within and to/from the City.

Policy TR-74 Develop a collector road system to provide for access and circulation between the various developments in and adjacent to the City. Design the collector road system to reduce the potential need for local traffic to use the arterials.

Policy TR-75 Phase street and arterial improvements to meet the anticipated traffic generation of each development within the City.

Policy TR-76 Wherever possible, require that industrial, commercial or multi-family development has access from a collector road. Minimize through-traffic on local residential streets.

Policy TR-77 When allowed, encourage access consolidation onto all streets to better utilize the roadway system.

Policy TR-78 Encourage whenever possible, reciprocal access agreements between adjacent compatible developments.

Policy TR-79 Reduce speed while maintaining connectivity on neighborhood streets using street design devices such as curb bulbs, "median obstacles", chicanes, traffic circles, speed tables, or other measures proven safe and effective at reducing travel speeds.

Policy TR-80 Minimize local street widths and crossing distances.

Goal 18. Provide aesthetically pleasing streets.

Policy TR-81 Develop design guidelines and standards for street wise landscaping, sidewalks, and maintenance within new developments.

Policy TR-82 Street Design Guidelines: Reflect the more urban nature of roadways within the City and within residential developments by encouraging, where appropriate, crosswalks and sidewalks, street trees and landscaping, traffic-calming strategies.

Policy TR-83 Minimize impacts of road construction on environmentally sensitive areas by properly managing damaging stormwater runoff and minimize and pollution from road use and maintenance.

Policy TR-84 Where possible for new development and redevelopment, require underground relocation or the under-grounding of overhead utilities to reduce the need for removal and maintenance of roadside vegetation.

Goal 19. Recognize the importance of easily accessible, attractive, and well dispersed parking as a valuable community asset.

Policy TR-85 Implement safety standards for interior parking and circulation for development in the City.

Policy TR-86 Consider reduction of parking requirements if a development provides alternatives for multi-modal uses such as Transportation Demand Management measures.

Policy TR-87 Consider reciprocal parking agreements and joint development of off-street parking facilities between adjacent and compatible developments.

Policy TR-88 Discourage parking on arterials within the City unless absolutely necessary.

Policy TR-89 Encourage the development of a public / private joint-use parking garage to facilitate downtown parking requirements.

Policy TR-90 Coordinate parking and transportation planning and projects with the Port of Bremerton in order to make the best use of the waterfront.

Performance Standards

Goal 20. Improve connectivity and mobility within the City through the identification and implementation of improvements that maintain Level of Service standards.

Policy TR-91 Review large land development applications and mitigation requirements as they occur over time based on traffic analyses using up-to-date traffic data.

Policy TR-92 Establish standards for local roads and monitor cut-through, non-local traffic. Establish a process for increasing control responses based on the severity of the disturbance to the neighborhood.

Goal 21. Promote environmentally sensitive and "Green" transportation solutions.

Policy TR-93 Encourage transit providers and organizations with large fleets of vehicles to utilize "Green" fuel and reduce emissions/air pollution including through the establishment of idling policies.

Goal 22. Support and reinforce coordination between land use and transportation.

Policy TR-94 Promote creation of coordinated corridor development plans for Tremont Street, Bay Street/Beach Drive (SR-166), Sedgwick Road (SR-160) and Mile Hill Drive/SR-166.

Policy TR-95 Promote application and development of a Bethel Road Corridor Development Plan for Bethel Road SE extending from Beach Drive (SR 166) to the State Route 16 overpass.

Policy TR-96 Make transportation improvements available to support planned growth and adopted levels of service concurrent with development. "Concurrent" shall mean that improvement or strategies are in place at the time of development, or that a financial commitment has been made.

Policy TR-97 Implement the Road Design Standards shown on the City's transportation plan and acquire needed right-of-way.

Policy TR-98 Require dedication of anticipated right-of-way for any land use approvals of developments for all roadways.

Goal 23. Require implementation of the Bethel Road Corridor Development Plan.

Policy TR-99 Work with Kitsap Transit to focus transit funding of proposed transit improvements on Bethel Road Corridor.

Policy TR-100 Promote separated bicycle lanes, separated sidewalks, and Access Management Plans as proposed in the Bethel Road Corridor Plan.

Policy TR-101 Seek funding for widening and improvements along Bethel Avenue.

Goal 24. Provide a transportation system that will support economic development.

Policy TR-102 Establish and identify through clear signage, a truck and oversized load route.

Policy TR-103 Apply appropriate street design standards for industrial and commercial districts, which allow for the easy movement of goods and services.

Community Character

Goal 25. Develop transportation improvements that respect the natural and community character and are consistent with both the short- and long-term vision of the Comprehensive Plan.

Policy TR-104 Restore / create unique neighborhood aesthetics via formation of distinctive streetscapes and traffic controlling devices.

Policy TR-105 Minimize the impacts of traffic on residential neighborhoods by discouraging the use of local access streets by non-local traffic.

Policy TR-106 Prohibit commercial development from utilizing local residential roads as access points.

Policy TR-107 Analyze accident data to determine where safety related improvements are necessary. Prioritize and implement safety related improvements during the transportation planning process.

Policy TR-108 Install sidewalks along Bay Street, Bethel Avenue, and side streets where none currently exist. Sidewalks should be on both sides of the street in the Downtown Gateways.

Policy TR-109 Enhance current crosswalks on Bay Street to increase pedestrian safety.

Policy TR-110 Encourage easements and interconnectivity between properties for vehicles and pedestrians.

Policy TR-111 Encourage bicycle commuting with a waterfront pathway that minimizes conflict with vehicles.

Policy TR-112 Provide street wise landscaping on City streets.

Recommended Actions

- Budget annually for at least one improvement to street landscaping including parkways, traffic islands and pedestrian ways.
- Develop design guidelines and standards for landscaping, sidewalks, and maintenance within new developments.
- Develop a bikeway and pedestrian plan consistent with the Kitsap County Greenways Plan.

PSRC Multicounty Transportation Goals and Policies

GREATER OPTIONS AND MOBILITY GOAL

Goal: The city will invest in transportation systems that offer greater options, mobility, and access in support of the city's growth strategy.

MOBILITY OPTIONS

T-: Increase the proportion of trips made by transportation modes other than driving alone.

T-: Integrate transportation systems to make it easy for people to move from one mode or technology to another.

T-: Promote the mobility of people and goods through a multi-modal transportation system consistent with regional priorities and VISION 2040.

T-: Address the needs of non-driving populations in the development and management of local and regional transportation systems.

T-: Site and design transit facilities to enable access for pedestrian and bicycle patrons.

T-: Encourage local street connections between existing developments and new developments to provide an efficient network of travel route options for pedestrians, bicycles, autos, and emergency vehicles

T-: Support effective management of regional air, marine and rail transportation capacity and address future capacity needs in cooperation with responsible agencies, affected communities, and users.

TRANSPORTATION DEMAND MANAGEMENT

T-: The city should reduce the need for new capital improvements through investments in operations, demand management strategies, and system management activities including: transit,

vanpools, broadband communication systems, providing for flexible work schedules, and public transit subsidies.

T-: The city should consider local transportation demand management programs (education and/or local regulations) to reduce the impacts of high traffic generators not addressed by the Washington State Commute Trip Reduction Act including: recreational facilities, schools, and other high traffic generating uses.

T-: The city should support the reduction of vehicle ownership in the city by supporting "ride share" and on-demand car/bike services.

OPERATIONS, MAINTENANCE, MANAGEMENT, AND SAFETY GOAL

Goal: As a high priority, the city will, maintain, preserve, and operate its transportation system in a safe and functional state.

- **Maintenance, Preservation, Operations, Transportation Systems Management, Safety and Financial Policies**

MAINTENANCE AND PRESERVATION

T-: Maintain and operate the city's transportation systems to provide safe, efficient, and reliable movement of people, goods, and services.

T-: Protect the investment in the existing system and lower overall life-cycle costs through effective maintenance and preservation programs.

T-: Prioritize essential maintenance, preservation, and safety improvements of the existing transportation system to protect mobility and avoid more costly replacement projects.

TRANSPORTATION SYSTEMS MANAGEMENT

T-: Maintain a citywide concurrency monitoring system to determine how transportation investments are performing over time.

T-: Design or redesign roads and streets, including retrofit projects, to accommodate a range of motorized and non-motorized travel modes in order to reduce injuries and fatalities and to encourage non-motorized travel. The design should include well-defined, safe and appealing spaces for pedestrians and bicyclists.

T-: Apply technologies, programs and other strategies that optimize the use of existing infrastructure in order to improve mobility, reduce congestion, increase energy-efficiency, and reduce the need for new infrastructure.

T-: Strive to increase the efficiency of the current transportation system to move goods, services, and people to and within the city before adding additional capacity.

T-: Protect the transportation system against major disruptions by developing prevention and recovery strategies and by coordinating disaster response plans.

SAFETY

T-: Continue to improve the safety of the transportation system to achieve the state's goal of zero deaths and disabling injuries.

T- Provide education on safe biking and walking.

T-: Enforce motorized and non-motorized safety laws

FINANCIAL

T-: Emphasize transportation investments that provide and encourage alternatives to single-occupancy vehicle travel and increase travel options, especially to and within commercial and mixed use areas and along corridors served by transit.

T-: Prioritize investments in transportation facilities and services that support compact, pedestrian- and transit-oriented development.

T-: Focus on investments that produce the greatest net benefits to people and minimize the environmental impacts of transportation.

T-: Encourage public and private sector partnerships to identify and implement improvements to personal mobility.

T-: Consider transportation financing methods that sustain maintenance, preservation, and operation of facilities

T-: Consider transportation impact fees for the expansion of multi-modal transportation capital facilities necessary to support growth.

T- Consider local financing methods that sustain or expand local transit service.

T-: If projected funding is inadequate to finance needed capital facilities that provide adequate levels of service, adjust the level of service, the planned growth, and/or the sources of revenue to maintain a balance between available revenue and needed capital facilities. The city should first consider identifying additional funding, then adjusting level-of-service standards, before considering reassessment of land use assumptions.

T-: A multiyear financing plan should serve as the basis for the six-year transportation improvement program and should be coordinated with the state's six-year transportation improvement program.

SUSTAINABILITY GOAL

Goal: The city's transportation system is well-designed and managed to minimize the negative impacts of transportation on the natural environment, to promote public health and safety, and achieve optimum efficiency.

- **Sustainability AND Natural Environment, Human Health and Safety, Environmental Justice Polices**

SUSTAINABILITY AND NATURAL ENVIRONMENT

T-: Foster a less polluting system that reduces the negative effects of transportation infrastructure and operation on the climate and natural environment, including the use of rain gardens or other techniques to reduce pollutants in storm drains.

T-: Seek the development and implementation of transportation modes and technologies that are energy-efficient and improve system performance.

T-: Design and operate transportation facilities in a manner that is compatible with and integrated into the natural and built environment including features, such as natural drainage, native and water wise plantings, and local design themes.

T-: Promote the expanded use of alternative fuel vehicles by converting public fleets, applying public incentive programs, and providing for electric vehicle charging stations throughout the city.

T-: Plan and develop a citywide transportation system that reduces greenhouse gas emissions by shortening trip length or replacing vehicle trips with other modes of transportation to decrease vehicle miles traveled.

HUMAN HEALTH AND SAFETY

T-: Develop a transportation system that minimizes negative impacts to human health, including exposure to environmental toxins generated by vehicle emissions

T-: Provide opportunities for an active, healthy lifestyle by integrating the needs of pedestrians and bicyclists in the local and regional transportation plans and systems.

T-: Develop a transportation system that minimizes negative impacts to human health from vehicle emissions, noise, or a lack of non-motorized options.

ENVIRONMENTAL JUSTICE

T-: Implement transportation programs and projects in ways that prevent or minimize negative impacts to low-income, minority, and special needs populations.

T-: Ensure mobility choices for people with special transportation needs, including persons with disabilities, the elderly and the young, and low-income populations.