IV. TRANSPORTATION ELEMENT

Introduction

The Transportation Element of the City of Shelton Comprehensive Plan serves the important role of identifying the current and future facility needs of Shelton's transportation system. In addition to automobile oriented facilities, the Transportation Element addresses other modes of transportation including air, rail, pedestrian, and bicycle facilities.

As population growth is experienced in and around Shelton and its Urban Growth Area (UGA), the demands placed upon the transportation system can be expected to increase. By identifying those facilities that will require improvements in the future, the City can begin the process of identifying appropriate funding sources to ensure that improvements are made in a timely and cost-effective manner.

The Transportation Element includes an assessment of existing roadways and roadway level-of-service (LOS), transit service, non-motorized facilities, air and rail. Transportation conditions expected to occur over the next 20 years are projected so that future improvements can be identified in the City's Six-Year Transportation Improvement Plan (TIP) and Capital Facilities Plan.

Goals and Policies, presented at the end of the Transportation Element, have been developed to guide how the City will respond to additional growth pressures upon the transportation network. Generally speaking, new development will be required to accept responsibility for its impacts to Shelton's roadways, and play an active role in future transportation improvements. Under the Growth Management Act, any new development that is projected to cause a transportation facility to drop below a locally-adopted LOS standard cannot be permitted unless specific actions are taken to mitigate the projected impacts in a timely manner. In addition, policies to address the impact of growth on existing capacity ensure that an unfair burden is not placed on the single project that causes service to finally fall below the adopted LOS standard. These policies will help to ensure that existing taxpayers are not unfairly burdened with the costs associated with accommodating new population growth in the City of Shelton. It should be recognized, however, that the implementation of such policies can require significant commitment of City resources.

The Transportation Element of the Comprehensive Plan also seeks to understand the impacts of increased population and traffic growth from outside the greater Shelton area. Coordination with the long-range plans of Mason County, the Peninsula Regional Transportation Planning Organization (PRTPO), and the Washington State Department of Transportation (WSDOT), is critical in the development of a meaningful plan for Shelton's future transportation system.

Planning Context

Growth Management Act

Transportation planning at the State, County and local levels is subject to the provisions of the Washington State Growth Management Act (GMA). In addition to requiring consistency with the land use element, the GMA requires that the Transportation Element of the City's Comprehensive Plan include:

- An inventory of facilities by mode of transport
- LOS calculations to aid in determining the existing and future operating conditions of the facilities
- Proposed actions to bring deficient facilities into compliance with adopted LOS standards
- Future traffic forecasts
- Identification of transportation infrastructure needs to meet current and future demands
- Funding analysis for needed improvements, as well as identification of possible additional funding sources
- Identification of intergovernmental coordination efforts
- Identification of Transportation Demand Management (TDM) strategies as available

The Growth Management Act also requires that public facilities must be adequate to support new growth and development or that improvements be made to maintain established levels of service. In terms of transportation impacts, this requirement, also known as concurrency, must be met within six years of development approval. If the existing roads and intersections cannot accommodate new growth without creating unacceptable congestion and delays, then development approval may be conditioned upon the project sponsor making improvements or contributing a pro rated share toward the future improvements necessary to maintain the established levels of service. In addition to construction of new capital facilities, new developments may also be required to support improved transit service, TDM strategies, or Transportation System Management (TSM) strategies.

Land Use Assumptions

In order to serve as a realistic guide to the future transportation needs of the City of Shelton, the Transportation Element must relate directly to both the existing and projected future land uses within Shelton and its UGA.

Because certain land uses can be expected to generate more vehicular traffic and daily trips than others, the proposed locations for future land uses as indicated in the Land Use Element of the Comprehensive Plan, were taken into account in the development of future traffic projections.

Inventory of Existing Facilities and Services

Roadways

Functional Classification

Based on state law, cities and counties are required to adopt a street classification system that is consistent with State and Federal guidelines. ~~In the State of Washington, these requirements are codified in RCW 35.78.010 and RCW 47.26.090.~~ Each local jurisdiction is responsible for defining

its transportation system into the following functional classifications: Freeway, Principal Arterial, Minor Arterial, and Collector. All other roadways are Local Access streets. Figure 11 shows the adopted City of Shelton functional classification for existing roadways. The City of Shelton roadways classifications are summarized as follows.

Freeway/Interstate is a multi-lane, high-speed, high-capacity roadway intended exclusively for motorized traffic. ~~Typically, freeways have two or more lanes for traffic in each direction and road crossings are grade-separated. All access is controlled by interchanges.~~ Within the City of Shelton, US 101 is fully access controlled and classified as a freeway. US 101 provides access to the Olympic Peninsula to the northwest, the Aberdeen/Hoquiam area to the southwest, and Olympia and Interstate 5 (I-5) to the southeast.

Principal Arterial (also called Major Arterial) is an inter-community roadway that connects major community centers and facilities, and is often constructed with limited direct access to abutting land uses. ~~The primary function of Principal Arterials is to provide a high degree of vehicular mobility; however, they may play a minor role in providing land access. Principal Arterials serve high-volume corridors, carrying the greatest portion of through or long-distance traffic within a city, serving inter-community trips that connect major activity centers. On-street parking is limited to improve capacity for through traffic.~~ Generally, Principal Arterials are usually multi-lane facilities and have traffic signals at intersections with other arterials. ~~They typically are provided with sidewalks and planting strips. The selected routes should provide an integrated system for complete circulation of traffic, including ties to the major highways entering the urban area.~~

Principal Arterials serve as key elements to the City of Shelton's transportation network, connecting the City's employment and residential centers. The following roadways are designated as Principal Arterials within the City of Shelton.

- Wallace Kneeland Boulevard, between US 101 and Shelton Springs Road
- Olympic Highway North, between Wallace Kneeland Boulevard and Alder Street
- Alder Street, between Olympic Highway North and First Street
- First Street, between Alder Street and Railroad Avenue
- Railroad Avenue, between US 101 and First Street
- SR 3 (Pine Street/Front Street/Railroad Avenue/First Street/Olympic Highway South), between the northeast UGA boundary and the south UGA boundary

Minor Arterial is an intra-community roadway, bounded by the principal arterial system that connects centers and facilities within the community and serving some through traffic, while providing a greater level of access to abutting properties. They can typically be found in residential, commercial and industrial areas. Minor Arterials connect with other arterial and collector roads extending into the urban area, and tend to serve less concentrated traffic-generating areas, such as neighborhood shopping centers and schools. ~~Minor Arterial streets serve as boundaries to neighborhoods, and generally have greater right-of-way and wider traffic lanes than residential streets. They often have continuous left-turn lanes and are normally provided with sidewalks and planting strips. Provision for on-street parking varies by location. Although the predominant function of Minor Arterial streets is the movement of through traffic, they also provide for considerable local traffic with origins or destinations at points along the corridor.~~

Minor Arterials also play an important role in connecting US 101 and SR 3 and the principal arterials with other arterials, neighborhoods, and commercial centers. The following roadways are classified as Minor Arterials within the City of Shelton:

- N 13th Street/Brockdale Road, between C Street and the northern UGA boundary
- Wallace Kneeland Boulevard, between Shelton Springs Road and Brockdale Road
- John's Prairie Road, between Brockdale Road and the eastern boundary of the UGA
- C Street, between Olympic Highway North and 13th Street
- Arcadia Avenue, between Lake Boulevard and Arcadia Road
- Arcadia Road, between Arcadia Avenue and the eastern UGA boundary

Collector is a roadway designed to fulfill both functions of mobility and land access. Collectors typically serve intra-community trips connecting residential neighborhoods with each other or activity centers, while also providing a high degree of property access within a localized area. Collector roadways serve as the means of connecting neighborhoods into the Principal/Minor Arterial system. They do not carry high volumes of traffic, but are an important means of transporting people to the main roadway system. Additionally, Collectors provide direct services to residential areas, local parks, churches and areas with similar land uses. ~~Collectors may be separated into Major and Minor designations according to the degree of travel between areas and the expected traffic volumes. Typically, right-of-way and paving widths are narrower for Collectors than Arterials. They may only be two lanes wide and are quite often controlled with stop signs. Spacing of Collector roadways is generally less than one mile. The City of Shelton further defines Collectors as Major Collector and Minor Collector~~.

The Major Collectors in the City of Shelton include:

- Shelton-Spring Road, between US 101 and Brockdale Road
- K Street, between Olympic Highway North and Northcliff Road
- Northcliff Road/First Street, between Brockdale Road and Alder Street
- 7th Street/Angleside Road, between Alder Street and Turner Avenue
- Front Street/Kneeland Street, between Railroad Avenue and First Street
- Turner Avenue, between 16th Street and SR 3
- Lake Boulevard/Pioneer Way, between southern UGA boundary and SR 3
- Shelton-Matlock Road, between US 101 and western UGA boundary

Minor Collectors serve the same general function as Major Collectors, but experience lower volumes of traffic. The Minor Collectors in the City of Shelton include:

- Poplar Street, between Tobin Avenue and Fogerty Street
- Tobin Avenue, between Chestnut Street and Poplar Street
- Fogarty Avenue, between Chestnut Street and Poplar Street
- Park Street/Chestnut Street, between Magnolia Street and Fogerty Street

- Magnolia Street, between San Joaquin Avenue and Chestnut Street
- Otter Street, San Joaquin Avenue and Chestnut Street
- San Joaquin Avenue, between Northcliff Road and Otter Street
- 10th Street/Highland Drive, between Wyandotte Avenue and 7th Street
- Wyandotte Avenue/2nd Avenue/Delaware Street, between 10th Street and Pioneer Way
- Fairmount Avenue, between SR 3 and the eastern UGA boundary
- Cascade Avenue/Mason Street/Dickinson Avenue, between SR 3 and Puget Street
- Puget Street, between Dickinson Avenue and Fairmount Avenue
- SR 102/Dayton Airport Road, between US 101 and the western UGA boundary
- W Shelton Valley Road, between Shelton-Matlock Road and the western UGA boundary

Local Access Street is a roadway designed with a primary function of providing access to residents. Typically, local access streets are only a few blocks long and are relatively narrow. All roadways in the City of Shelton that have not been designated as a Freeway, Arterial or a Collector roadway are considered to be local access streets. ~~Local access streets make up the majority of the miles of roadway. Spacing of neighborhood collectors that are local streets but carry higher traffic volumes are typically less than one-half mile.~~

Federal and State Highways

There are three highway facilities within the Shelton UGA: SR 3, US 101, and SR 102. SR 3 runs roughly north-south on the east side of the City near the waterfront, US 101 runs north-south along the west side of the City, and SR 102 runs east-west within the northwest corner of the UGA.

SR 3 begins at milepost 348.95 on US 101 south of the City and runs north to the City of Bremerton and continues northerly through the Kitsap Peninsula to SR 104 and the Hood Canal Bridge. As the highway passes through the City it is a two-lane urban arterial with 5~~6~~ signalized intersections and some sidewalks. The total length of SR 3 within the City limits and UGA is 2.8 miles. Within the city, it is concurrently designated as Olympic Highway South, 1st Street, Railroad Avenue, Front Street, and Pine Street. The posted speed limit is 25 or 30 mph in the study area, depending on location.

~~US 101 begins on the Columbia River near Ilwaco and encircles most of the Olympic Peninsula passing through the City of Shelton and ending at I-5 in the City of Olympia. As the highway passes through the City it is a two-lane roadway with access control. The total length of US 101 within the City limits and UGA is 5.4 miles.~~

US Highway 101 (US 101) is a two-lane highway that runs in a north-south direction through the western portion of the City of Shelton and the UGA. South of SR 102 it is designated a Freeway/Expressway and north of SR 102 it is designated as a Principal Arterial. US 101 serves as the major roadway connection between Shelton and the region. It serves the Olympic Peninsula to the northwest, the Aberdeen-Hoquiam area to the southwest, and Olympia to the southeast. In the vicinity of the study area, US 101 has one lane in each direction.

~~S~~SR 102/Dayton Airport Road is a two-lane, major collector that runs in an east-west direction through the northwest corner of the city of Shelton UGA. SR 102 connects with West Shelton

Matlock Road to the west and US 101 to the east. ~~SR 102 begins at SR 101 on the north side of Sanderson Field and runs westward 2.8 miles to its terminus.~~ It ~~is a 2-lane roadway~~ primarily serves~~ing~~ as access to the Washington State Patrol Training Facility and Washington State Corrections Center. The PRTPO classifies the highway as a roadway of Regional Significance. The total length of SR 102 is 2.5 miles of which 0.6 mile is within the UGA.

In 1998, Highway of Statewide Significance (HSS) legislation was passed by the Washington State Legislature and codified as RCW 47.06.140. Highways of Statewide Significance are those facilities deemed to provide and support transportation functions that promote and maintain significant statewide travel and economic linkages. The legislation emphasized that these significant facilities should be planned from a statewide perspective (WSDOT 2002). Thus, LOS requirements for HSS highways are not subject to local standards. Both SR 3 and US 101 are HSS facilities within the City of Shelton.

~~**Traffic Control**~~

~~Traffic signals located within the City of Shelton are owned both by the City and by WSDOT. Signals currently under the jurisdiction of WSDOT are located at the following intersections:~~

- ~~SR 3 and Cascade Avenue~~
- ~~SR 3 (1st Street) and Mill Street~~
- ~~SR 3 (1st Street) and Cota Street~~
- ~~SR 3 (1st Street) and Railroad Avenue~~
- ~~SR 3 and Arcadia Avenue~~
- ~~Olympic Hwy North and Wallace Kneeland Boulevard~~

~~Signals currently under the jurisdiction of the City of Shelton are located at the following intersections:~~

- ~~Railroad Avenue and 4th Street~~
- ~~Railroad Avenue and 7th Street~~
- ~~Alder Street and 7th Street~~
- ~~Olympic Hwy North and K Street~~
- ~~N 13th Street and K Street~~
- ~~Shelton Springs Road and Wallace Kneeland Boulevard~~
- ~~Wallace Kneeland Boulevard and Wal-Mart and Kneeland Plaza entrance~~

Truck Routes

Preferred routes for freight movement for the City of Shelton are illustrated in Figure 12. The figure shows ~~the~~ all the designated truck routes, which apply to semi-tractor trailers, as well as the emergency weight restriction routes. These route designations are based upon the typical origins and destinations of freight transport within the City, as well as identification of roads built to adequate design standards for large trucks. Trucks are restricted to the emergency weight restriction routes when freeze-thaw conditions exist. This prevents excessive degradation to City

streets by restricting heavy vehicle movement at the time when pavement is most vulnerable to damage.

Transit Service

~~The~~ Mason ~~County~~ Transit~~portation~~ Authority (M~~C~~TA) services the transit needs for the citizens of the City of Shelton. ~~Mason Transit~~MTA offers four types of service:

1. **Route Service** – Scheduled fixed route bus service.

2. **Route Deviation** – For citizens with limited mobility that makes it difficult to access transit stops and routes, most schedules allow transit to deviate a limited distance off route. Citizens need to call Mason Transit in advance for this service.

3. **Express Route Service** – This service operates on peak commuter runs between Olympia and Shelton, with limited stops and route deviations.

4. **Dial-A-Ride** - Service is available for customers who experience difficulty using regular routed service. Citizens need to call Mason Transit to make reservations for this service.

At this time, no fares are collected on routes operating within Mason County. A fare of $1.~~0~~50 per one-way trip is collected on routes to and from Olympia, Bremerton and Brinnon in Jefferson County. The "free fare" service is paid for solely from 6/10th of one-cent sales tax revenues levied specifically for transit within Mason County.

All Mason Transit vehicles are equipped with bike racks and with wheelchair lifts. Transit service within the City of Shelton and UGA is summarized in Table IV-1 and is shown ~~in Figure 13~~on the MTA website.

According to MTA's 2015-2020 Transit Development Plan, future service and capital plans include starting "MTA Regional Express Commuter Service," providing additional transportation for riders traveling to and from Olympia and Bremerton via Shelton, and constructing the Belfair Park-and-Ride and North Mason County satellite base of operations.

~~**Port of Shelton**~~

~~**Marine Facilities**~~

~~The Port of Shelton owns and administers a marine facility in the City of Shelton. The port dock, which is leased by the Shelton Yacht Club, is located on the northern portion of Oakland Bay off of SR 3. The Yacht Club facility includes moorage for members and non-members, as well as a small dock for transient moorage. The small visitors dock is also open to the general public for access to Shelton's waterfront.~~

~~The Simpson Timber Company's waterfront operation includes a barge loading facility for hauling sawdust to Tacoma. Log rafts are also assembled and transported from Oakland Bay by the Simpson Timber Company and the Manke Lumber Company via private tugboats.~~

~~A public boat launch owned by the City of Shelton exists near the Yacht Club, where the Pine Street right-of-way extends out to Oakland Bay. The launch is concrete, and not accessible during periods of low tide.~~

Table IV-1: Existing Transit Service

Route Number	Description	Days of Service	Frequency of service
1 and 1X	Shelton to Belfair Via SR 3 (connections to Bremerton)	Monday through Saturday	~~Four Six~~Route 1 has seven round trips ~~per day~~ on weekdays and t~~. T~~hree round trips ~~per day~~ on Saturday. Route 1X has three northbound trips and four southbound trips on weekdays.
2	Shelton to Belfair Via SR 106 (connections to Bremerton)	Monday through Saturday	Three northbound and two southbound trips per day on weekdays. Two trips per day each direction on Saturday.
3 and 3X	Belfair/ Bremerton	Monday through Saturday	Route 3 has nine round trips on weekdays and four on Saturdays. Route 3X has one round trip on weekdays.
4	Belfair Loop	Monday through Saturday	Eight loop trips on weekdays and four loop trips on Saturdays.
5	Shelton South Loop	Monday through Saturday	1~~2~~5 round trips per day ~~(one hour headway)~~on weekdays and 13 on Saturdays.
6 and 6X	Shelton to Olympia/Olympia to Shelton (connections with Intercity, Grays Harbor and Pierce Transit)	Monday through Saturday	Route 6 has 14 trips from Shelton to Olympia each weekdays and eight on Saturdays. It has 13 trips from Olympia to Shelton on weekdays and eight on Saturdays. Route 6X has five trips both Shelton to Olympia and Olympia to Shelton on weekdays. ~~Eight trips per day each direction on weekdays. Four trips per day each direction on Saturday.~~
7	Shelton North Loop	Monday through Saturday	1~~1~~5 round trips per weekday (one hour headway). ~~Five~~ Eight trips per day on Saturday.
8	Shelton to Brinnon (connections with Jefferson Transit)	Monday through Friday	Two round trips per day.
9	~~Civic Center to Kneeland Plaza~~Shelton Central Loop	Monday through ~~Saturday~~Friday	~~Six trips on weekdays. Four trips on Saturday~~Four loop trips on weekdays.
11	Shelton to Lake Cushman	Monday through Saturday	Three roundtrips on weekdays and on Saturdays.

Source: Mason ~~County~~ Transit~~portation Authority~~, ~~Transit System~~ Bus Schedule, ~~effective in 2007~~2016, http://www.masontransit.org/busschedules/. ~~.~~

Port of Shelton

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The Simpson Timber Company's former sawmill ~~waterfront~~ operation include~~d~~s a barge loading facility for hauling sawdust and wood chip to Tacoma. Log rafts are also assembled and transported from Oakland Bay by ~~the Simpson Timber Company and the~~ Manke Lumber Company via private tugboats.

A public boat launch owned by the City of Shelton exists near the Yacht Club, where the Pine Street right-of-way extends out to Oakland Bay. The launch is concrete, and not accessible during periods of low tide.

Air Facilities

The Port of Shelton's Sanderson Field is located in the City's UGA at an elevation of 278 feet, and serves as Mason County's only public airport. The facility was originally developed as a 1,082 acre U.S. Naval Auxiliary Air Station fighter training base during World War II. In 1957, the facility was quitclaimed to the Port of Shelton, and was maintained by the Civil Air Patrol. In 1966, the site was officially named Sanderson Field and has since been managed by the Port of Shelton.

The Airport Master Plan was updated in 1997. While the majority of users of Sanderson Field come from the Mason County area, the airport also serves a customer base from outside the area because it is the only general aviation airport within a radius of 45 statute miles that is capable of handling corporate aircraft.

Rail Service

~~Rail America and the Simpson Logging Railroad (SLR) provide freight service in Mason County and the City of Shelton. Primary operations for Rail America and SLR are centered in the Simpson Plywood Mill. Rail America operates rail lines extending from Grays Harbor County and the City of Aberdeen, northeast through Mason County and the City of Shelton, and continuing northeast to Kitsap County and the City of Bremerton, along tracks owned by the United States Government. The SLR is owned and operated by the Simpson Plywood Mill. SLR track extends from the Simpson Mill westbound through Mason County and then northbound through Grays Harbor County~~The Simpson Logging Railroad ceased operations in 2015 along with operations at the Simpson Lumber Mills. The rail line connected Simpson's waterfront mill at Oakland Bay in Shelton to Mill 5 located in Dayton. Since the railroad ceased operations there have been discussions of utilizing the railway for freight movement, tourism train and tourism type uses, and/or conversion of the line to a multiuse trail. As of the writing of this plan no specific direction has been determined.

Limited Rail America facilities are also available north of Shelton at the Port of Shelton's John's Prairie industrial site. Current use at this site involves the loading of finished Douglas-fir poles for distribution to regional, national, and international markets.

The United States Navy owns the railroad line from the south line of Goldsborough Creek north to Bremerton. Any future projects or development affecting these tracks will require coordination with the United States Navy.

Pedestrian and Bicycle Facilities

The core area of downtown Shelton provides an extensive sidewalk network along most major corridors. The east side of Front Street (SR 3) is the only principal arterial in the central business district (CBD) that does not have a sidewalk, although it does have wide shoulders that permit pedestrian and bicycle traffic. All signalized intersections in the downtown core have pedestrian crossing signals. No formal LOS measurement is currently available for non-motorized facilities, and informal observation indicates that bicycle and pedestrian facilities are not adequate. As the facilities are expanded and continued connections take place, it is expected that they will see additional use.

A number of smaller, informal trail systems link many of the City's neighborhoods with the downtown area, and with natural features such as creeks. A majority of these trails occur on privately owned property. While the level of accessibility and maintenance on these trails is limited, they appear to play an important role in the lives of citizens who use them frequently for recreation and access between neighborhoods and downtown. Formal, maintained, trails exist along Shelton Creek from 7th Street (behind the Timberland Library) to North 13th Street near Mason General Hospital. The City also maintains Ravenna Trail, a trail which connects 7th Street (near its intersection with Angleside Road and Highland Drive) to the Angleside neighborhood.

As part of the Shelton Hills development, sidewalks and bicycle lanes will be provided along all new roadways, and 6 miles of trails will be provided within the development. Trails will connect residential, commercial, and recreation areas within the development, and will link to sidewalk systems along Wallace Kneeland Boulevard, C Street, and K Street.

~~It is anticipated that the City will seek local volunteers or a non-profit group to assist in the preparation of a detailed sidewalk and trail inventory. This will enable the City to identify missing links and prioritize future trail improvements, sidewalk construction, and property acquisition~~The City of Shelton Public Works Department is currently in the development stages of a sidewalk prioritization plan. The plan will lay the groundwork/methodology the Public Works Department will utilize to expand the City's sidewalk system. The City's development standards require most new development to either install sidewalks directly but also, in certain circumstances, allow for the payment of an in-lieu fee to allow for construction of consolidated sidewalk and pedestrian improvements in other areas of the City.

Analysis of Existing Conditions

~~Existing Traffic Volumes~~Study Area Intersections

Study intersections of the transportation analysis were established based on travel patterns determined using the City of Shelton Regional Travel Demand Model. The study area intersections for the transportation analysis includes the following:

1. Wallace Kneeland Boulevard/US 101 southbound ramps
2. Wallace Kneeland Boulevard/US 101 northbound ramps
3. Wallace Kneeland Boulevard/Olympic Highway North
4. Wallace Kneeland Boulevard/Bell Lane (Walmart access)
5. Olympic Highway North/Retail access
6. Shelton Springs Road/Wallace Kneeland Boulevard
7. Brockdale Road/Wallace Kneeland Boulevard/13th Street/Johns Prairie Road
8. 13th Street/Alpine Road/Shelton Springs Road
9. 13th Street/Northcliff Road/K Street
10. 7th Street/Alder Street
11. 7th Street/Railroad Avenue
12. 1st Street/Alder Street
13. Front Street/Pine Street (SR 3)
14. 1st Street/Railroad Avenue (SR 3)
15. 1st Street/Cota Street (SR 3)
16. 1st Street/Turner Avenue (SR 3)
17. Olympic Highway North/C Street
18. Railroad Avenue/US 101 southbound ramps
19. Railroad Avenue/US 101 northbound ramps
20. Fairgrounds Road/US 101
21. Shelton Springs Road/US 101
22. Dayton Airport Road (SR 102)/US 101
23. K Street/Olympic Highway North
24. SR 102 (Dayton Airport Road)/Eells Hills Road
25. Port Access Road/Wallace Kneeland Boulevard Extension (future no action and action alternatives)
26. Relocated US 101 southbound ramp intersection (replaces Intersection #1 in future no action and action alternatives)

27. Wallace Kneeland Boulevard Extension/K Street Extension (future no action and action alternatives)[1]

See Figure 13 for an illustration of the study area intersections. Of the existing 24 intersections, nine have signals and are referred to as signalized intersections, and the remaining 15 are controlled by stop signs and are referred to as unsignalized intersections.

~~The City identified nine critical intersections for LOS analysis within the City Limits. US 101 was additionally identified for highway LOS analysis. Traffic volumes for locations along state highways were obtained from WSDOT. Volumes for other locations were obtained from existing City of Shelton counts, and by additional counts ordered by the City. These counts were completed in 1997 for the intersection of Olympic Highway South and Arcadia Avenue, in 1999 for the intersection of First Street and Railroad Avenue, and in 2002 for the other seven intersections. Figure 14 shows the locations and respective 2002 traffic volumes at selected intersections within the City Limits.~~

Existing PM peak hour turning movement counts were obtained from the Shelton Hills Mixed Use Development Traffic Impact Analysis (SCJ 2013). The counts were conducted between 4:00 and 6:00 PM on a Tuesday, Wednesday, or Thursday in October 2012.

~~An Average Daily Traffic (ADT) count was obtained from WSDOT for US 101 within the City Limits. The most recent count available for this location was taken in 2000, and it indicates a two-directional ADT on US 101 of 15,300 vehicles per day.~~

~~To analyze traffic conditions within the UGA, 11 intersections were identified for LOS analysis. PM peak hour traffic counts for these intersections were taken on a typical weekday of January 2007 with no unusual weather related conditions. Figures 14a and 14b show the locations and respective 2007 traffic volumes of the intersections for the UGA Plan. After reviewing the count data, the volumes for the intersection of Wallace Kneeland Boulevard and Olympic Highway were found to be an anomaly and the 2002 counts were used instead with an adjustment factor. Traffic counts for the intersections on Shelton-Mattlock Road were conducted in 2006 and obtained from WSDOT.~~

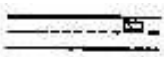
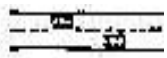
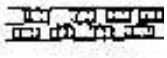
[1] Intersections 25, 26, and 27 relate to Alternatives in the Shelton UGA DEIS. This information will be updated when a Preferred Alternative is chosen.

LOS Analysis

LOS Approach

LOS is a quantitative measure, and is the primary measurement used to determine the operating condition of a roadway segment or intersection. LOS is calculated by comparing the actual number of vehicles using a roadway (volume of traffic) to its carrying capacity. The *Highway Capacity Manual* (HCM, Transportation Research Board 2000) is the recognized source for the techniques used to measure transportation facility performance. Using the HCM procedures, the quality of traffic operation is graded into one of six LOS designations: A, B, C, D, E, or F. LOS A represents the best range of operating conditions and LOS F represents the worst. ~~Table IV-2 summarizes the characteristic traffic flow for the varying LOS.~~

~~Table IV-2: Characteristic Traffic Flow for Varying Levels of Service~~

~~Level of Service~~		~~Characteristic Traffic Flow~~
~~A~~		~~Free flow – Describes a condition of free flow with low volumes and high speeds. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. Stopped delay at intersections is minimal.~~
~~B~~		~~Stable flow – Represents reasonable unimpeded traffic flow operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tensions.~~
~~C~~		~~Stable flow – In the range of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. The selection of speed is now significantly affected by interactions with others in the traffic stream, and maneuvering within the traffic stream required substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.~~
~~D~~		~~Stable flow – Represents high density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.~~
~~E~~		~~Unstable flow – Represents operating conditions at or near the maximum capacity level. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor disturbances within the traffic stream will cause breakdowns~~
~~F~~		~~Forced flow – Describes forced or breakdown flow, where volumes are above theoretical capacity. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point. Queues form behind such locations, and operations within the queue are characterized by stop-and-go waves that are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclical fashion.~~

~~Source: Highway Capacity Manual 1997~~

LOS for intersections is determined by the average amount of delay experienced by vehicles at an intersection. Table IV-~~3~~2 summarizes the LOS criteria for signalized intersections.

Table IV-2~~3~~: LOS Criteria for Signalized Intersections

LOS	Average Delay per Vehicle (seconds/vehicle)
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Source: Transportation Research Board 2000

For two-way stop-controlled intersections, LOS depends on the amount of delay (average delay per vehicle) experienced by drivers on the minor (stop-controlled) approach. All-way stop-controlled intersections require drivers on all approaches to stop before proceeding into the intersection. LOS for all-way stop-controlled intersections is determined by the average delay per vehicle for all movements.

The LOS criteria for stop-controlled intersections have different threshold values than those established for signalized intersections, primarily because drivers expect different levels of performance from distinct types of transportation facilities. In general, stop-controlled intersections are expected to carry lower volumes of traffic than signalized intersections. Thus for the same LOS, a lower level of delay is acceptable at stop-controlled intersections than it is for signalized intersections. Table IV-~~4~~3 summarizes the LOS thresholds for both two-way and all-way stop-controlled intersections.

Table IV-~~4~~3: LOS Criteria for Stop-Controlled Intersections

LOS	Average Delay per Vehicle (seconds/vehicle)
A	≤ 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Source: Transportation Research Board 2000

~~LOS analysis was also performed for US 101, which is a two-lane rural highway. The LOS for two-lane rural highway segments is calculated using average two-way volumes for the peak hour, and the LOS criteria is based on Percent Time Spent Following (PTSF) and the Average Travel Speed, as summarized in Table IV-5. It should be noted, however, that the City may, in~~

~~consultation with WSDOT and the County, be examining the feasibility of adding a new highway interchange to serve the community and/or improvements to SR 3.~~

~~Table IV-5: LOS Criteria for Two-Lane Rural Highways~~

~~LOS~~	~~Average Time Spent Following Another Vehicle (percent)~~	~~Average Travel Speed (miles/hour)~~
~~A~~	~~≤35~~	~~>55~~
~~B~~	~~>35 – 50~~	~~>50 – 55~~
~~C~~	~~>50 – 65~~	~~>45 – 50~~
~~D~~	~~>65 – 80~~	~~>40 – 45~~
~~E~~	~~>80~~	~~≤40~~
~~F~~	~~Applies whenever the flow rate exceeds the segment capacity~~	

~~Source: Transportation Research Board 2000~~

LOS Standard

The City has adopted LOS D as the LOS standard for all City roadways, with the exception of the Olympic Highway/Wallace Kneeland Boulevard intersection, which has an LOS E standard. The LOS standards are consistent with PRTPO standards, and were established through a process of citizen education, discussion, participation and review. WSDOT has adopted LOS D as the standard for US 101 and SR 3.

By adopting minimum LOS standards for the City's roadways, Shelton has committed to an LOS that must be maintained as new development occurs. As new development is proposed and impacts assessed, developers and/or the City must mitigate transportation impacts to ensure that LOS does not fall below the standard. As set forth in GMA, Shelton has developed a Concurrency Management Ordinance based upon this plan, which specifies how definition of impacts and mitigation should take place.

LOS Analysis of Existing Conditions

The LOS analysis was conducted for the study intersections using the software program SIDRA for roundabout controlled intersections and Synchro for all other intersections in the study area.

~~The following assumptions were made for intersection LOS analysis:~~

- ~~Traffic signal timing and phasing – All traffic signals are fully actuated, except possibly Railroad Avenue and 7th Street. WSDOT provided phasing and timing data for signals located at state highways. The City of Bremerton who maintains the City's signals provided the following defaults for the other signals: yellow time = 3.5 seconds; all-red time = 1 second; and minimum cycle length = 60 seconds.~~
- ~~Peak hour factor – A peak hour factor (ratio of the highest 15-minute volume to peak hour volume) of 0.94 was utilized. This value was derived from peak hour traffic counts.~~

- ~~Percent heavy vehicles – Percent of heavy vehicles (percentage of heavy trucks and buses as part of total traffic) of 3 percent was utilized for analysis. This value was derived from traffic mix data included with the 2002 City traffic counts.~~

In the LOS analysis, the following three intersections currently operate below City of Shelton or WSDOT standards during the PM peak hour:

- Intersection #7: Brockdale Road/Wallace Kneeland Boulevard/13th Street/Johns Prairie Road
- Intersection #8: 13th Street/Alpine Road/Shelton Springs Road
- Intersection #10: 7th Street/Alder Street

All other intersections in the study area currently operate at LOS D or better.

Figure 14 and Table IV-4~~IV-6~~ summarize~~s~~ the results of existing intersection LOS within the City Limits~~, which is based upon average delay for all critical traffic movements at an intersection. Thus, specific directions of traffic movements may experience more delay than the composite LOS measure shows~~.

Table IV-5. Existing PM Peak Hour Level of Service Summary

ID	Intersection	Traffic Control	2012 Existing Conditions PM Peak Hour	
			LOS	Delay (seconds)
1	Wallace Kneeland Boulevard/US 101 southbound ramps	Unsignalized	B	13
2	Wallace Kneeland Boulevard/US 101 northbound ramps	Unsignalized	C	16
3	Wallace Kneeland Boulevard/Olympic Highway North	Signalized	D	38
4	Wallace Kneeland Boulevard/Bell Lane (Walmart access)	Signalized	D	44
5	Olympic Highway North/Retail access	Unsignalized	D	30
6	Shelton Springs Road/Wallace Kneeland Boulevard	Signalized	A	9
7	Brockdale Road/Wallace Kneeland Boulevard/13th Street/Johns Prairie Road	Unsignalized	**F**	**62**
8	13th Street/Alpine Road/Shelton Springs Road	Unsignalized	**F**	**113**
9	13th Street/Northcliff Road/K Street	Signalized	B	12
10	7th Street/Alder Street	Signalized	**E**	**59**
11	7th Street/Railroad Avenue	Signalized	B	11
12	1st Street/Alder Street	Unsignalized	C	20
13	Front Street/Pine Street (SR 3)	Unsignalized	D	27
14	1st Street/Railroad Avenue (SR 3)	Signalized	A	7
15	1st Street/Cota Street (SR 3)	Signalized	A	6
16	1st Street/Turner Avenue (SR 3)	Unsignalized	C	17
17	Olympic Highway North/C Street	Unsignalized	C	23
18	Railroad Avenue/US 101 southbound ramps	Unsignalized	C	16
19	Railroad Avenue/US 101 northbound ramps	Unsignalized	B	14
20	Fairgrounds Road/US 101	Unsignalized	B	13
21	Shelton Springs Road/US 101	Unsignalized	D	27
22	Dayton Airport Road (SR 102)/US 101	Unsignalized	C	16
23	K Street/Olympic Highway North	Signalized	A	6
24	SR 102 (Dayton Airport Road)/Eells Hills Road	Unsignalized	A	10

[1] The average delay for all vehicles is reported for signalized intersections. The delay of the worst stop-controlled approach is reported for unsignalized intersections.

Note: Cells highlighted in **grey/bold** exceed the City's LOS standards. The intersection LOS standard is D, except for Intersection #3, which is LOS E.

Table IV-6: Existing (2002) PM Peak Hour Intersection LOS Within City Limits

	Intersection	Traffic Control	Average Delay (sec/veh)	LOS
1	Olympic Highway N and Wallace Kneeland Boulevard	Signal	38	D
2	Olympic Highway N and K Street	Signal	11	B
3	N 13th Street and K Street	Signal	13	B
4	Seventh Street and Alder Street	Signal	20	C
5	First Street and Railroad Avenue	Signal	8	A
6	First Street and Turner Avenue	Eastbound Stop Controlled	37	E
7	First Street and Mill Street	Signal	21	C
8	SR 3 and Arcadia Avenue	Signal	16	B
9	Seventh Street and Railroad Avenue	Signal	8	A

Analysis shows that under 2002 existing conditions, all City intersections studied operate at LOS D or better, with the exception of the unsignalized intersection at First Street and Turner Avenue. However, traffic signals on First Street at both Mill Street and Railroad Avenue may provide adequate gaps for the westbound traffic at this location.

Table IV-7 summarizes the results of the existing intersection LOS analysis within the Shelton UGA. This analysis shows that under existing conditions (2007), all intersections operate at LOS D or better, with the exception of the stop controlled intersection at N Shelton Spring Road/W Alpine Way and N 13th Street. The westbound approach on W Alpine Way is operating at LOS F during the PM peak hour.

Table IV-7: Existing (2007) PM Peak Hour Intersection LOS Within Shelton UGA

	Intersection	Traffic Control	Average Delay (sec/veh)	LOS
U1	E Wallace Kneeland Boulevard and Olympic Highway N	Signal	31	C[1]
U2	E Wallace Kneeland Boulevard and N Shelton Spring Road	Signal	7	A
U3	N Shelton Spring Road /W Alpine Way and N 13th Street	Eastbound/ Westbound Stop Controlled	59	F
U4	E Wallace Kneeland Boulevard and N 13th Street	All-way Stop Controlled	16	C
U5	E Batstone Cutoff Road and E Brockdale Road	Eastbound/ Westbound Stop Controlled	19	C
U6	E Shelton Spring Road and E Island Lake Drive	Southbound Stop Controlled	12	B

	Intersection	Traffic Control	Average Delay (sec/veh)	LOS
U7	E Shelton Spring Road and US 101	Westbound Stop Controlled	14	B
U8	W Sanderson Way and US 101	Eastbound Stop Controlled	12	B
U9	W Dayton Airport Road/SR 102 and US 101	Eastbound Stop Controlled	11	B
U10	Shelton-Matlock Road and US 101 Northbound Ramps	Northbound Stop Controlled	14	B
U11	Shelton-Matlock Road and US 101 Southbound Ramps	Northbound Stop Controlled	16	B

[1]The new version of the LOS analysis software resulted in an improved LOS as compared to the 2002 analysis.

LOS of US 101

LOS analysis of US 101, adjacent to the City of Shelton, was based upon the average two-way hourly volume of 638 vehicles per hour. Typical heavy vehicle percentages of 6 percent trucks and 3 percent recreational vehicles were assumed. The terrain is rolling with truck passing lanes.

Analysis of these existing conditions on US 101 indicates that it operates at LOS D, with an average travel speed of 40 miles per hour. The posted speed is 60 mph, and 45 mph west of the Wallace Kneeland overpass.

Accident Summary

Identification of the highest accident locations in the City of Shelton is based upon four years (1998 through 2001) of accident data collected and compiled by the WSDOT Transportation Data Office. This WSDOT database records accidents only by location, not by type or severity. A total of 712 accidents (average 178 per year) were recorded for the City over the four-year period. Table IV-8 summarizes the intersections that experienced an average of one accident per year or higher during that time.

The City has also identified the intersection of SR 3 (1st Street) and Park Street as a location with high accident potential. This is due primarily to poor sight distance at this intersection combined with a significant number of semi-tractor trailer trucks that pass through this location heading to and from Mill Street.

Table IV-8: Highest Accident Locations Within Shelton City Limits

Intersection		Four-Year Accident Total (1998 – 2001)	Average No. Accidents per Year
Wallace Kneeland Boulevard	Olympic Highway N	19	4.75
Wallace Kneeland Boulevard	Shelton Springs Road	19	4.75
7th Street	Railroad Avenue	18	4.5
K Street	Olympic Highway N	15	3.75

Intersection		Four-Year Accident Total (1998 – 2001)	Average No. Accidents per Year
4th Street	Railroad Avenue	13	3.25
1st Street	Alder Street	11	2.75
7th Street	Alder Street	10	2.5
4th Street	Cedar Street	8	2
13th Street	Alpine Way	7	1.75
13th Street	Shelton Springs Road	7	1.75
1st Street	Pine Street	7	1.75
3rd Street	Alder Street	7	1.75
4th Street	Franklin Street	7	1.75
5th Street	Franklin Street	7	1.75
1st Street	Park Street	6	1.5
4th Street	Alder Street	6	1.5
5th Street	Railroad Avenue	6	1.5
8th Street	Railroad Avenue	6	1.5
A Street	Olympic Highway N	6	1.5
B Street	Olympic Highway N.	6	1.5
10th Street	Railroad Avenue	5	1.25
13th Street	K Street	5	1.25
1st Street	Franklin Street	5	1.25
2nd Street	Cota Street	5	1.25
5th Street	Cedar Street	5	1.25
7th Street	Cedar Street	5	1.25
7th Street	Franklin Street	5	1.25
Arcadia Avenue	Summit Drive	5	1.25
Batstone Cutoff Road	Brockdale Road	5	1.25
Pioneer Way	Harvard Street	5	1.25
Wallace Kneeland Boulevard	Kneeland Plaza Access	5	1.25
Wallace Kneeland Boulevard	Wal-Mart Parking Lot	5	1.25

The five-year (2002 through 2006) accident data for the analysis intersections in the Shelton UGA was compiled and provide by the WSDOT Transportation Data Office. Table IV-9 summarizes the intersections that experienced an average of one accident per year or higher during that time. As shown in Table IV-8 and IV-9, the intersection of E Wallace Kneeland Boulevard and Olympic Highway N and intersection of E Wallace Kneeland Boulevard and N Shelton Springs Road both experienced a substantial increase in the accident rate from 1998 to 2006.

Table IV-9: Intersection Accidents Within Shelton UGA

Intersection		Five-Year Accident Total (2002 – 2006)	Average No. Accidents per Year
E Wallace Kneeland Boulevard	Olympic Highway N	51	10.2
E Wallace Kneeland Boulevard	N Shelton Springs Road	34	6.8
E Wallace Kneeland Boulevard	N 13th Street	22	4.4
Shelton-Matlock Road	US 101 Southbound On-Ramp	13	2.6
E Shelton Spring Road	US 101	6	1.2
N Shelton Spring Road	N 13th Street	5	1
W Dayton Airport Road/SR 102	US 101	5	1

Summary of Existing Deficiencies

All signalized intersections were found to be operating at acceptable LOS during the weekday PM peak hour, except the unsignalized intersection at 1st Street and Turner Avenue. The LOS of US 101 was also found to be adequate.

Though LOS at the intersection of 1st Street and Park Street meets the City's adopted standard, it has been identified as a high accident location. The recommended Transportation Plan should address the safety issues at this location.

Under 2007 existing conditions, the intersection LOS analysis performed for the UGA Plan shows that all intersections operate at LOS D or better, with the exception of the stop controlled intersection at N Shelton Spring Road/W Alpine Way and N 13th Street.

Roadway conditions on many of the arterials and throughout downtown have not been upgraded to urban standards (i.e., curb, gutter, sidewalks, road surface, and closed drainage). While these conditions do not affect the LOS, they do influence the perception of the community. Lack of sidewalks deters pedestrians and bicyclists from utilizing other viable modes of transportation.

Analysis of Future Conditions

Traffic Volume Forecasts for 2004 Comprehensive Plan

Analysis of future conditions required that traffic volumes be forecast for the years 2008 and 2022. Traffic growth tends to slightly exceed population growth depending on the area. The Shelton area is isolated and the commercial and residential areas are very small in size and traffic volumes would be anticipated to closely approximate population growth. An analysis of population growth over the 1990 to 2000 time period showed a 1.7% growth rate. The City of Shelton *Water System Comprehensive Plan* (October 2002) and the *Water and Sewer Regional Plan* (November 2001 and thereafter amended in 2005 and 2006) assumed a population growth rate of 2%. Based on this analysis a 2% traffic volume growth rate was assumed for City intersections. Examination of historical traffic trends in the area indicates that 2% represents the upper end of the range of likely growth rates.

Figure 15 presents the projected intersection traffic volumes for 2008, and Figure 16 presents the projected intersection traffic volumes for 2022, based on the assumed 2% growth rate.

~~Applying the growth rate assumption to US 101 results in projected ADT volumes of 17,300 vehicle per day in 2008, and 22,800 vehicles per day in 2022.~~

~~Traffic Volume Forecasts for UGA Plan~~

~~Two analysis periods were selected to analyze future traffic conditions for the UGA, a short range, year 2013 consistent with a 6-year plan analysis and a long range, year 2025 consistent with Mason County's long-range population forecasts. A growth rate of 2 percent was used consistent with the Comprehensive Plan for the short-range analysis, which would also be more consistent with current growth. This growth rate was applied to current 2007 traffic volumes. Figures 14a and 15a present the projected intersection traffic volumes for 2013.~~

~~After completion of the Shelton Comprehensive Plan, Mason County distributed population targets for the 2005 to 2025 period. Analyzing the City of Shelton's target population, assigned by the County, a growth rate for build out would be 3% per year. However most of the long-range growth would occur within the UGA rather then throughout the City, thus a more detailed analysis of the appropriate growth rate for each of the analysis intersections was conducted. The UGA area was segregated and employment and residential unit development were considered. Seven zones were created as follows: east of Northcliff Road and south of John's Prairie, surrounding Island Lake, Sanderson Field, west of the US 101 and south of Sanderson Field and north of Goose Lake, south of Goose Lake, surrounding the Shelton Mattlock and US 101 interchange, and south of the City. The growth in trips for each area was determined and then applied as appropriate for each of the analysis intersections. Growth rates varying from 3% to 4% were used. In some cases additional trips were assigned to an intersection based on selected roadways providing access to a large UGA growth area.~~

~~The long-range growth rates were applied to current 2007 traffic volumes. Figures 14a and 16a present the projected intersection traffic volumes for 2025, based on these growth rate assumptions.~~

Future LOS With No Additional Improvements

Intersection LOS[2]

The project team obtained year 2036 vehicle volumes for the study intersections from the City of Shelton Regional Travel Demand Model. This model used 2036 household and employment estimates to generate vehicle trips and assigned those trips to roadways within Mason County and the City of Shelton and its UGA.

Traffic volumes for the study area intersections are generally expected to increase between 2012 and 2036 due to regional population and employment growth. The anticipated 2036 LOS conditions are shown in Figure 15 and Table IV-6. The following intersections are expected to operate below City of Shelton or WSDOT standards:

- Intersection #5: Olympic Highway North/Retail access
- Intersection #11: 7th Street/Railroad Avenue
- Intersection #13: Front Street/Pine Street (SR 3)

[2] This analysis is based on Alternative 2 of the Shelton UGA Draft Environmental Impact Statement. The information will be updated when a Preferred Alternative is chosen.

- Intersection #19: Railroad Avenue/US 101 northbound ramps
- Intersection #22: SR 102 (Dayton Airport Road) and US 101
- Intersection #24: SR 102 (Dayton Airport Road) and Eells Hill Road

All other intersections in the study area would operate at LOS D or better.

Table IV-6. 2036 Peak Hour Level of Service Summary[3]

ID	Intersection	2036 Traffic Control	2036 Alternative 1 (No Action) PM Peak Hour		2036 Alternative 2 Peak Hour		2036 Alternative 3 Peak Hour	
			LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)
1	US 101 southbound ramps and Wallace Kneeland Boulevard	*	*	*	*	*	*	*
2	US 101 northbound ramps and Wallace Kneeland Boulevard	Signalized	C	32	D	49	D	54
3	Olympic Highway and Wallace Kneeland Boulevard	Signalized	C	32	D	40	D	41
4	Bell Lane and Wallace Kneeland Boulevard	Signalized	B	13	B	20	B	19
5	Olympic Highway North/Retail access	Unsignalized	**E**	**41**	**F**	**50**	**F**	**55**
6	Shelton Springs Road and Wallace Kneeland Boulevard	Signalized	A	9	C	35	C	25
7	13th Street and Wallace Kneeland Boulevard/Johns Prairie Road	Signalized	D	38	D	48	D	44
8	13th Street and Shelton Springs Road/Alpine Way	Signalized	C	27	B	19	B	19
9	13th Street and K Street/Northcliff Road	Signalized	A	9	A	10	C	30
10	7th Street and Alder Street	Signalized	B	19	B	19	B	19
11	7th Street and Railroad Avenue	Signalized	**F**	**117**	**F**	**133**	**F**	**154**
12	Alder Street and Northcliff Road	Signalized	A	10	A	9	A	7
13	Front Street and Pine Street (SR 3)	Unsignalized	**F**	**>300**	**F**	**>300**	**F**	**>300**
14	1st Street and Railroad Avenue (SR 3)	Signalized	B	11	B	11	B	12
15	1st Street and Cota Street (SR 3)	Signalized	A	6	A	6	A	6
16	1st Street/Olympic Highway and Turner Avenue (SR 3)	Signalized	B	10	B	10	B	11

[3] This information is based on analysis of Alternative 2 in the Shelton UGA Draft Environmental Impact Statement. It will be updated when a Preferred Alternative is chosen.

Table IV-6. 2036 Peak Hour Level of Service Summary[3]

ID	Intersection	2036 Traffic Control	2036 Alternative 1 (No Action) PM Peak Hour		2036 Alternative 2 Peak Hour		2036 Alternative 3 Peak Hour	
			LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)
17	Olympic Highway and C Street	Signalized	A	6	A	5	A	4
18	US 101 southbound ramps and Railroad Avenue	Signalized	C	22	D	35	C	34
19	US 101 northbound off-ramp/on-ramp and Railroad Avenue	Signalized	**E**	**73**	**E**	**80**	**E**	**77**
20	US 101 and Fairgrounds Road	*	*	*	*	*	*	*
21	US 101 and Shelton Springs Road	Signalized	B	14	C	22	D	37
22	US 101 and SR 102 (Dayton Airport Road)	Signalized	C	21	**E**	**58**	**F**	**87**
23	Olympic Highway and K Street	Signalized	C	22	D	43	C	34
24	SR 102 (Dayton Airport Road) and Eells Hill Road	Unsignalized	C	22	**F**	**>300**	**F**	**>300**
25	Port Access Road and Wallace Kneeland Boulevard Extension	Roundabout	D**	27**	D**	30**	D**	27**
26	Relocated southbound ramps	Roundabout	C**	21**	D**	34**	D**	33**
27	Wallace Kneeland Extension and K Street Extension	Unsignalized	C	21	D	30	D	31

[1] The average delay for all vehicles is reported for signalized intersections. The delay of the worst stop-controlled approach is reported for unsignalized intersections.

*Intersection #1 will be replaced in the future with Intersection #26, and Intersection #20 will be replaced in the future with Intersection #25.

**Volume to capacity ratios for Intersection #25 for Alternatives 1, 2 and 3 are 1.01, 1.04, and 0.99, respectively. Volume to capacity ratios for Intersection #26 for Alternatives 1, 2 and 3 are 0.83, 0.98, and 0.98, respectively

Note: Cells highlighted in **grey/bold** exceed the City's LOS standards. The intersection LOS standard is D, except for Intersection #3, which is LOS E.

~~The results of future intersection LOS analysis are summarized in Table IV-10 for intersections within the City Limits and in Table IV-11 for intersections within the UGA. The assumptions utilized for analysis were the same as those utilized for analysis of existing conditions.~~

~~**LOS of US 101**~~

~~Highway LOS analysis was conducted for future conditions using the traffic volumes projected for the years 2008 and 2022, and assuming that the vehicle percentages and other geometric assumptions will be the same as existing conditions. Analysis showed that based upon these numbers, in 2008 US 101 will operate at LOS D with an average travel speed of 40 mph, and in 2022 the highway will operate at LOS E with an average travel speed of 39 miles per hour. Though the 2022 conditions are projected to be LOS E, the calculated measures are very close to LOS D. Since somewhat aggressive growth rate assumptions were utilized to estimate future conditions, future traffic growth should be carefully monitored before making any decisions to improve this section of highway.~~

Table IV-10: Future PM Peak Hour Intersection LOS Within Shelton with No Additional Improvements

	Intersection	Traffic Control	Year 2008		Year 2022	
			Average Delay	LOS	Average Delay	LOS
1	Olympic Highway N and Wallace Kneeland Boulevard	Signal	54	D	103	F
2	Olympic Highway N and K Street	Signal	12	B	13	B
3	N 13th Street and K Street	Signal	14	B	18	B
4	7th Street and Alder Street	Signal	32	C	85	F
5	1st Street and Railroad Avenue	Signal	9	A	15	B
6	1st Street and Turner Avenue	Eastbound Stop Controlled	55	F	271	F
7	1st Street and Mill Street	Signal	26	C	74	E
8	SR 3 and Arcadia Avenue	Signal	19	B	34	C
9	7th Street and Railroad Avenue	Signal	9	A	11	B

Table IV-11: Future PM Peak Hour Intersection LOS Within Shelton UGA with No Additional Improvements

	Intersection	Traffic Control	Year 2013		Year 2025	
			Average Delay	LOS	Average Delay	LOS
U1	E Wallace Kneeland Boulevard and Olympic Highway N	Signal	35	D[1]	105	F
U2	E Wallace Kneeland Boulevard and N Shelton Spring Road	Signal	8	A	43	D
U3	N Shelton Spring Road/W Alpine Way and N 13th Street	Eastbound/ Westbound Stop Controlled	131	F	>180	F
U4	E Wallace Kneeland Boulevard and N 13th Street	All-way Stop Controlled	21	C	>180	F
U5	E Batstone Cutoff Road and E Brockdale Road	Eastbound/ Westbound Stop Controlled	24	C	>180	F
U6	E Shelton Spring Road and E Island Lake Drive	Southbound Stop Controlled	13	B	29	D
U7	E Shelton Spring Road and US 101	Westbound Stop Controlled	15	B	21	C

	Intersection	Traffic Control	Year 2013		Year 2025	
			Average Delay	LOS	Average Delay	LOS
U8	W Sanderson Way and US 101	Eastbound Stop Controlled	13	B	16	C
U9	W Dayton Airport Road/SR 102 and US 101	Eastbound Stop Controlled	12	B	15	B
U10	Shelton-Matlock Road and US 101 Northbound Ramps	Northbound Stop Controlled	15	C	62	F
U11	Shelton-Matlock Road and US 101 Southbound Ramps	Northbound Stop Controlled	20	C	147	F

[1]The new version of the LOS analysis software resulted in an improved LOS as compared to the 2002 analysis.

Summary of Future Deficiencies

Analysis shows LOS at the stop controlled intersection of First Street and Turner Avenue, which has been identified as an existing deficiency, to degrade to poorer conditions with increased future volumes. The projected increases in traffic volumes do not result in any additional intersections to fall below the LOS standard by 2008. However, by 2022, analysis shows that the intersections of Seventh Street with Alder Street will drop to LOS F; and that the intersection First Street and Mill Street will drop to LOS E. Since conditions at these three intersections are projected to fall below the established LOS standard, improvement of these locations should be included in the Recommended Transportation Plan. The intersection of Olympic Highway North with Wallace Kneeland Boulevard will also drop to LOS F. However this intersection is owned by WSDOT as part of the US 101 interchange. US 101 is a HSS Highway and is therefore exempt from City LOS standards. Proposed improvements to meet the WSDOT LOS standard are suggested in this element for city staff discussions with WSDOT.

As shown in Table IV-11, the analysis for the UGA Plan shows that LOS at the intersection of N Shelton Spring Road/W Alpine Way and N 13th Street, which was identified as an existing deficiency, would degrade to poorer conditions with increased future volumes. The projected increases in traffic volumes would not result in any additional intersections falling below the LOS standard by 2013. By the 2025, the LOS analysis shows that five additional intersections would exceed the LOS standard. These include the intersections of E Wallace Kneeland Boulevard and Olympic Highway North (LOS F), E Wallace Kneeland Boulevard and N 13th Street (LOS F), E Batstone Cutoff Road and E Brockdale Road (LOS F), and Shelton-Matlock Road and US 101 Southbound and Northbound Ramps (LOS F). However, US 101 is a HSS highway within the City and thus is exempt from the City LOS standards. The intersections that would exceed the Shelton LOS standards are listed below.

- ~~E Wallace Kneeland Boulevard and Olympic Highway North (Projected deficiency by 2025[4]) (Olympic Highway is a HSS highway exempt from City LOS standards)~~
- ~~N Shelton Spring Road/W Alpine Way and N 13th Street (Existing deficiency)~~
- ~~E Wallace Kneeland Boulevard and N 13th Street (Projected deficiency by 2025)~~
- ~~E Batstone Cutoff Road and E Brockdale Road (Projected deficiency by 2025)~~
- ~~Shelton-Matlock Road and US 101 Southbound and Northbound Ramps (HSS highway exempt from City LOS standard)~~

[4] ~~This intersection was identified for 2022 improvement in the City intersection analysis above.~~

Recommended Transportation Plan

Recommended ~~Roadway~~ Transportation Improvements

Tables IV-~~12~~7 and IV-8 summarize~~s~~ the ~~roadway~~ transportation improvements recommended to address the existing and projected future ~~roadway~~ transportation deficiencies ~~that have been~~ identified for the City of Shelton. The lowest cost improvements were sought that would ensure that existing and future roadway capacity will be sufficient to meet the City's LOS standards, and to improve roadway safety. Table IV-7 shows the six-year Transportation Plan for 2017 through 2022. These projects all have cost estimates identified. Table IV-~~XX813~~ and Table IV-~~XX~~9 show ~~s~~ the twenty-year Transportation Plan, 2017-2036~~7.~~, which includes projects anticipated to be needed as growth occurs.

~~Table IV-12: 20-Year Recommended Transportation Improvements~~

~~Location~~	~~Problem~~	~~Recommended Improvements~~
~~1st Street (SR 3) and Turner Avenue~~	~~Traffic demand on westbound approach exceeds the LOS for TWSC intersections. (Existing deficiency)~~	~~Install a traffic signal at 1st St and Turner Ave; signal coordination; railroad synchronization.~~
~~1st Street and Park Street~~	~~Poor sight distance and significant presence of large trucks heading to and from Mill St result in high accident frequency. (Existing deficiency)~~	~~Close Park St along the north side of Kneeland Park and provide alternate street route along the west side of the park to Turner Ave, providing a better route to accommodate trucks and eliminating the sight distance problem.~~
~~Olympic Highway N and Wallace Kneeland Boulevard~~	~~Substantial demand for eastbound right-turn and northbound left-turn traffic. (Projected deficiency by 2022) (This is a highway of statewide significant exempt from city LOS standards.)~~	~~Construct an eastbound right-turn lane and an additional northbound left-turn lane. This project is compatible with a future WSDOT two-lane US 101 overpass widening.~~
~~7th Street and Alder Street~~	~~Substantial demand for eastbound through and right-turn traffic. (Projected deficiency by 2022)~~	~~Construct right-turn lane, and improve the signal.~~
~~1st Street (SR 3) and Mill Street~~	~~Insufficient lane capacity for southbound through and right-turn traffic. (Projected deficiency by 2022)~~	~~Remove and replace 1st Avenue parking, rechannelize and realign left-turn radius, upgrade signal.~~

Table IV-7: Six-Year Transportation Plan, 2017-2022

Project Name	Location	Description	Plan Priority Number	Estimated Project Cost
Downtown Creeks Sidewalks ("Franklin Street Improvements")	5th Street to 8th Street	Replace sidewalk capping creek, additional curb cuts for disabled access. Lighting, landscaping, and pedestrian/school safety enhancements	3	$345,000
Evergreen Safe Routes to School	8th Street to 10th Street	Construct/Improve pedestrian sidewalks, curbs, gutters, ramps, signage, educational materials and events	4	$509,596

Project Name	Location	Description	Plan Priority Number	Estimated Project Cost
SR 3/ Pine Street Entryway Corridor Improvement		Entryway corridor improvements, Trail, Transportation Amenities	5	$150,000
SR3/Pine Street - Park and Ride	Railroad Trestle to Old WWTP Site	Park & Ride Lot	6	$200,000
North Shelton Interchange Upgrade	SR 101 to Wallace-Kneeland	Widening, channelization improvement, and signal	7	$3,200,000
Front Street / Kneeland Street 5427	Pine Street to 1st Street	Widen, drainage, sidewalks, lighting, channelization, landscaping, Turning Radius Improvement, culvert replacement	8	$2,500,000
Signalization at Alpine Way / S.S. Rd / N. 13th St Alpine Way Intersection			9	$200,000
Railroad Avenue West	7th Street to 12th Street	Pavement Stabilization, Replacement, and/or Rehabilitation. ADA access upgrades.	10	$580,000
Railroad Avenue	First Street to 7th Street	Pavement Stabilization, Replacement, and/or Rehabilitation. ADA access upgrades and Intersection Improvements potentially including	11	$580,000

Table IV-8: Twenty-Year Transportation Plan, 2017-2036~~7~~

Project Name	Location	Description	Plan Priority Number
Olympic Highway North / Alder & 7th Intersection		Add right turn lane, signal replacement, drainage, sidewalk, and lightings	12
Wallace Kneeland Boulevard/John's Prarie Rd	Shelton Springs Rd to E. City Limits	Full depth rebuild and structural enhancement, and intersection improvements including signalization and channelization	13
Olympic Highway North	"C" Street to Wallace-Kneeland	Full depth rebuild and structural enhancement	14
Turner Avenue 5434	1st Street to 16th Street	Paving, signal, channelization, sidewalks, drainage, lighting & path	15
1st Street Bridge Improvements 5427		Bridge replacement, creek bed stabilization, deck widening, & channelization	16
SR 3 / 1st Street	Pioneer Way to Railroad Ave	Pavement, sidewalks, drainage, landscaping, and intersection improvements, including channelization and signalization	17
Alder Street / Olympic Highway North 5465	1st Street to "C" Street	Paving stabilization, widening, channelization, lighting, sidewalks, and intersection improvements including channelization and signalization	18
Non-Motorized Plan (bicycle/Trail/Sidewalk)	Citywide		19
Truck Route	Citywide		20

Project Name	Location	Description	Plan Priority Number
Cedar Street	1st Street to 5th Street	Concrete road slab stabilization, sidewalks, drainage, lighting, channelization, and landscaping, Paving	21
Cota Street	Front Street to 12th Street	Drainage, lighting, channelization, sidewalks, landscaping, Pavement, and road base	22
Railroad Avenue Corridor Study 5460	11th Street to W City Limits		23
N. Shelton Traffic Circ & Rd Classification Analysis			24
Magnolia Street 5431 from: San Joaquine St to: Chestnut St	San Joaquine Street to Chestnut Street	Widening, drainage, guard rail, retainment wall, ROW acq, & pedestrian walkway	25
7th Street	Park Street to Alder Street	Widening, channelization improvement, and signal	26
Cota Street City Parking Lot Improvements		Improve ADA access, drainage, and surfacing.	27
Evergreen Square Parking Lot Improvements		Improve ADA access, drainage, and surfacing.	28
5th Street	Cota Street to Alder Street	Stabilization, overlay, sidewalks, drainage, lighting, & channelization	29
Seventh Street 5426	Turner Ave to Wyandotte Street	Sidewalks, storm drainage, minor roadway reconstruction	30
Wallace-Kneeland Blvd / N. 13th Intersection 5439		Signalization and intersection improvements	31
Mill Street	1st Street to Simpson Gate	Pavement, drainage, sidewalks, channelization, street lighting, and landscaping	32
Signage Improvement Plan	Citywide	Update/Upgrade regulatory and warning signage to current standards where applicable.	33
Franklin Street	1st Street to 4th Street	Concrete slab stabilization, paving, drainage, sidewalks, and landscaping	34
Park Street	1st Street to 7th Street	Roadway improvements including widening, sidewalk, curb & gutter, and drainage.	35
Angleside Rd 5426	7th Street to Turner Street	Guard rail, pedestrian walkway, intersection reconstruction, ROW acq., pavement, road base, and sidewalks	36
N. 13th	Northcliff Rd to Wallace-Kneeland	Pavement stabilization, widening, drainage, landscaping, and intersection improvements including channelization and signalization	37
Brockdale Road	Wallace-Kneeland to N City Limits	Pavement stabilization, widening, drainage, landscaping, and intersection improvements including channelization and signalization	38
Deegan Road Extension		Construction of a new connector road between the southerly end of Deegan Rd and the vicinity of the Grandview Heights neighborhood	39

In addition to the projects listed in the six-year and twenty-year Transportation Plans, a number of roadway improvements are planned as part of the Shelton Hills development and the Wallace Kneeland Boulevard interchange project. These are listed in Table IV-9 below.

Table IV-9: Future Roadway Improvements

DEIS ID	Intersection/Roadway Segment	Improvement
1	Wallace Kneeland Boulevard/US 101 southbound ramps	Construct southbound US 101 ramps at new location (new intersection #26)
2	Wallace Kneeland Boulevard/US 101 northbound ramps	Add traffic signal, second northbound right-turn lane, second westbound through lane, northbound slip lane, eastbound left-turn lane, second eastbound through lane, and second northbound left-turn lane
3	Wallace Kneeland Boulevard/Olympic Highway North	Add third eastbound through lane and northbound left-turn lane, and redesign southbound approach
4	Wallace Kneeland Boulevard/Bell Lane (Walmart access)	Restripe northbound and southbound approaches, and add third eastbound through lane
5	Olympic Highway North/Retail access	N/A
6	Shelton Springs Road/Wallace Kneeland Boulevard	Add westbound through lane and eastbound right-turn lane
7	Brockdale Road/Wallace Kneeland Boulevard/13th Street/Johns Prairie Road	Add traffic signal, southbound right-turn lane, northbound right-turn lane, and westbound through lane
8	13th Street/Alpine Road/Shelton Springs Road	Add traffic signal and southbound through lane
9	13th Street/Northcliff Road/K Street	Add northbound right-turn lane
10	7th Street/Alder Street	Add eastbound right-turn lane and restripe northbound approach
11	7th Street/Railroad Avenue	Restripe northbound approach and construct Railroad Avenue Road Diet (change inside eastbound and westbound through lanes to two-way center left-turn lane)
12	1st Street/Alder Street	Add traffic signal
13	Front Street/Pine Street (SR 3)	Add northbound right-turn lane and westbound left-turn lane
14	1st Street/Railroad Avenue (SR 3)	Construct Railroad Avenue Road Diet (change inside eastbound/westbound through lanes to two-way center left-turn lane)
15	1st Street/Cota Street (SR 3)	N/A
16	1st Street/Turner Avenue (SR 3)	Add traffic signal
17	Olympic Highway North/C Street	Add traffic signal
18	Railroad Avenue/US 101 southbound ramps	Add traffic signal, northbound right-turn lane, and eastbound right-turn Lane
19	Railroad Avenue/US 101 northbound ramps	Add traffic signal and northbound right-turn lane

20	Fairgrounds Road/US 101	Construct Port access at new location (new intersection #25), and add northbound through lane and southbound through lane on US 101
21	Shelton Springs Road/US 101	Add traffic signal, northbound through lane, southbound through lane, and westbound right-turn lane
22	Dayton Airport Road (SR 102)/US 101	Add traffic signal, northbound through lane, southbound right-turn lane, and eastbound left-turn lane
23	K Street/Olympic Highway North	N/A
24	SR 102 (Dayton Airport Road)/Eells Hills Road	N/A
25	Port Access Road/Wallace Kneeland Boulevard Extension (future no action and action alternatives)	New Intersection – Roundabout
26	Relocated US 101 southbound ramps/Wallace Kneeland Boulevard Extension (replaces #1 in future no action and action alternatives)	New Intersection – Roundabout (replaces Intersection #1)
27	Wallace Kneeland Boulevard Extension/K Street Extension	New Intersection
N/A	Wallace Kneeland Boulevard/US 101 southbound ramps	Extend Wallace Kneeland Boulevard from existing southbound US 101 ramps to proposed southbound US 101 ramps

Source: SCJ 2013

The peak-hour level of service was analyzed for 2036, assuming the list of transportation improvements listed in Table IV-9 above. The results are summarized in Table IV-10 below.[5]

(Alternative 1 Analysis)

The following intersections are expected to operate below City of Shelton or WSDOT standards:

- Intersection #5: Olympic Highway North/Retail access
- Intersection #11: 7th Street/Railroad Avenue
- Intersection #13: Front Street/Pine Street (SR 3)
- Intersection #19: Railroad Avenue/US 101 northbound ramps

All other intersections in the study area would operate at LOS D or better.

~~LOS analyses were conducted for these improvements to ensure that the results in all locations meet the City's LOS standard. Table IV-13 summarizes the projected 2022 LOS at the intersections with the proposed improvements.~~

[5] This analysis will be updated when a Preferred Alternative is chosen in the Shelton UGA Environmental Impact Statement.

~~**Table IV-13: 2022 PM Peak Hour Intersection LOS with Recommended Projects**~~

~~Intersection~~	~~Without Improvement~~		~~With Recommended Project~~	
	~~Avg. Delay (sec/veh)~~	~~LOS~~	~~Avg. Delay (sec/veh)~~	~~LOS~~
~~Olympic Highway N and Wallace Kneeland Boulevard~~	~~103~~	~~F~~	~~44~~	~~D~~
~~Seventh Street and Alder Street~~	~~85~~	~~F~~	~~29~~	~~C~~
~~First Street (SR 3) and Turner Avenue~~	~~271~~	~~F~~	~~20~~	~~C~~
~~First Street (SR 3) and Mill Street~~	~~74~~	~~E~~	~~39~~	~~D~~

Table IV-10: 2036 PM Peak Hour Level of Service Summary[6]

ID	Intersection	2012 Traffic Control	2012 Existing Conditions PM Peak Hour		2036 Traffic Control	2036 Alternative 1 (No Action) PM Peak Hour	
			LOS	Delay (seconds)		LOS	Delay (seconds)
1	Wallace Kneeland Boulevard/US 101 southbound ramps	Unsignalized	B	13	*	*	*
2	Wallace Kneeland Boulevard/US 101 northbound ramps	Unsignalized	C	16	Signalized	C	32
3	Wallace Kneeland Boulevard/Olympic Highway North	Signalized	D	38	Signalized	C	32
4	Wallace Kneeland Boulevard/Bell Lane (Walmart access)	Signalized	D	44	Signalized	B	13
5	Olympic Highway North/Retail access	Unsignalized	D	30	Unsignalized	**E**	**41**
6	Shelton Springs Road/Wallace Kneeland Boulevard	Signalized	A	9	Signalized	A	9
7	Brockdale Road/Wallace Kneeland Boulevard/13th Street/Johns Prairie Road	Unsignalized	**F**	**62**	Signalized	D	38
8	13th Street/Alpine Road/Shelton Springs Road	Unsignalized	**F**	**113**	Signalized	C	27
9	13th Street/Northcliff Road/K Street	Signalized	B	12	Signalized	A	9

[6] Analysis will be updated when a Preferred Alternative is chosen in the Shelton UGA Environmental Impact Statement.

10	7th Street/Alder Street	Signalized	**E**	**59**	Signalized	B	19
11	7th Street/Railroad Avenue	Signalized	B	11	Signalized	**F**	**117**
12	1st Street/Alder Street	Unsignalized	C	20	Signalized	A	10
13	Front Street/Pine Street (SR 3)	Unsignalized	C	27	Unsignalized	**F**	**>300**
14	1st Street/Railroad Avenue (SR 3)	Signalized	A	7	Signalized	B	11
15	1st Street/Cota Street (SR 3)	Signalized	A	6	Signalized	A	6
16	1st Street/Turner Avenue (SR 3)	Unsignalized	C	17	Signalized	B	10
17	Olympic Highway North/C Street	Unsignalized	C	23	Signalized	A	6
18	Railroad Avenue/US 101 southbound ramps	Unsignalized	C	16	Signalized	C	22
19	Railroad Avenue/US 101 northbound ramps	Unsignalized	B	14	Signalized	**E**	**73**
20	Fairgrounds Road/US 101	Unsignalized	B	13	*	*	*
21	Shelton Springs Road/US 101	Unsignalized	D	27	Signalized	B	14
22	Dayton Airport Road (SR 102)/US 101	Unsignalized	C	16	Signalized	C	21
23	K Street/Olympic Highway North	Signalized	A	6	Signalized	C	22
24	SR 102 (Dayton Airport Road)/Eells Hills Road	Unsignalized	A	10	Unsignalized	C	22
25	Port Access Road/Wallace Kneeland Boulevard Extension (future no action and action alternatives)	Signalized	**	**	Roundabout	D***	27***
26	Relocated US 101 southbound ramps/Wallace Kneeland Boulevard Extension (replaces #1 in future no action and action alternatives)	Signalized	**	**	Roundabout	C***	21***
27	Wallace Kneeland Boulevard Extension/K Street Extension	Unsignalized	**	**	Unsignalized	C	21

1 The average delay for all vehicles is reported for signalized intersections. The delay of the worst stop-controlled approach is reported for unsignalized intersections.

*Intersection #1 will be replaced in the future with Intersection #26, and Intersection #20 will be replaced in the future with Intersection #25.

**Intersections #25, #26, and #27 do not exist under 2012 existing conditions, but will exist in 2036.

***Under 2036 Alternative 1 (No Action), Intersection #25 would have a volume to capacity (v/c) ratio of 1.01 and Intersection #26 would have a v/c ratio of 0.83.

Note: Cells highlighted in grey/bold exceed the City's LOS standards. The intersection LOS standard is D, except for Intersection #3, which is LOS E.

(Alternative 2 Analysis)

The following intersections are expected to operate below City of Shelton or WSDOT standards, or would have increased delay in 2036:

- Intersection #5: Olympic Highway North/Retail access
- Intersection #11: 7th Street/Railroad Avenue
- Intersection #22: SR 102 (Dayton Airport Road) and US 101
- Intersection #24: SR 102 (Dayton Airport Road) and Eells Hill Road
- Intersection #13: Front Street/Pine Street (SR 3)
- Intersection #19: Railroad Avenue/ US 101 northbound ramps

All other intersections in the study area would operate at LOS D or better.

(Analysis under Alternative 3)

the following intersections are expected to operate below City of Shelton or WSDOT standards, or would have increased delay in 2036

- Intersection #5: Olympic Highway North/Retail access
- Intersection #11: 7th Street/Railroad Avenue
- Intersection #22: SR 102 (Dayton Airport Road)/US 101
- Intersection #24: SR 102 (Dayton Airport Road)/Eells Hill Road
- Intersection #13: Front Street/Pine Street (SR 3)
- Intersection #19: Railroad Avenue/ US 101 northbound ramps

All other intersections in the study area would operate at LOS D or better.

~~For each of the analyzed intersections, Figure 17 shows the location, existing traffic control, existing and 2022 LOS, and where applicable, 2022 LOS with recommended transportation improvements. The figure shows that the recommended projects will address all identified LOS deficiencies.~~

~~An additional urban roadway analysis was conducted for SR 3. The roadway segment LOS was analyzed based on the methodology from the Highway Capacity Manual for Urban Streets. The LOS analysis results for SR 3 are shown in Table IV-14.~~

Table IV-14: SR 3 Roadway Segment LOS

Roadway	Existing Conditions		Year 2008		Year 2022		Year 2022 with Improvements[1]	
	Speed	LOS	Speed	LOS	Speed	LOS	Speed	LOS
SR 3 Northbound	23.7	B	23.1	B	15.1	C	16.9	C
SR 3 Southbound	22.0	B	21.0	B	15.8	C	18.4	C

[1] Along SR 3 the one-way couplet as proposed in the Transportation Plan was assumed to have been implemented for the Year 2022 with Improvements analysis.

Recommended Roadway Improvements for UGA Plan

Table IV-15 summarizes the roadway improvements recommended to address the existing and 6-year intersection deficiencies. The lowest cost improvements were sought that would ensure that existing and future roadway capacity will be sufficient to meet the City's LOS standards, and to improve roadway safety.

Table IV-15: 6-Year Recommended Transportation Improvements for UGA Plan

Location	Problem	Recommended Improvements	
N Shelton Spring Road/W Alpine Way and N 13th Street	Traffic demand on eastbound and westbound approaches causes the intersection to exceed the City LOS standard for stop-controlled intersections. (Existing deficiency)	Change the intersection control to all-way stop control. Restripe northbound approach to 2 lane approach instead of existing 3-lane approach for safety reasons.	

LOS analyses were conducted for these 6-year improvements to ensure that the results at this location would meet the City's LOS standard. Table IV-16 summarizes the projected 2013 LOS at the intersection with the proposed improvements.

Table IV-16: 2013 PM Peak Hour Intersection LOS with 6-Year Recommended Improvements

Intersection	Without Improvement			With Recommended Improvements		
	Traffic Control	Avg. Delay (sec/veh)	LOS	Traffic Control	Avg. Delay (sec/veh)	LOS
N Shelton Spring Road/W Alpine Way and N 13th Street	Eastbound/ Westbound Stop Controlled	131	F	All-way Stop Controlled	19	C

Table IV-17 summarizes the roadway improvements recommended to address the 20-year intersection deficiencies. The lowest cost improvements were sought that would ensure existing and future roadway capacity will be sufficient to meet the City's LOS standards, and to improve roadway safety. The intersection of Shelton-Matlock Road and the US-101 Southbound and Northbound Ramps involves a HSS Highway and does not need to meet the City's LOS standard. The E. Wallace Kneeland Boulevard and Olympic Highway north intersection is under WSDOT jurisdiction and is not subject to local LOS standards. However, proposed improvements for HSS locations are suggested for discussion with WSDOT.

Table IV-17: 20-Year Recommended Transportation Improvements for UGA Plan

Location	Problem	Recommended Improvements
N Shelton Spring Road/W Alpine Way and N 13th Street	Traffic demand on eastbound and westbound approaches causes the intersection to exceed the City LOS standard for stop-controlled intersections. (Existing deficiency)	Install a traffic signal with northbound and southbound left-turn protected phases. Construct an eastbound right-turn lane.

Location	Problem	Recommended Improvements
E Wallace Kneeland Boulevard and Olympic Highway N	Substantial demand for eastbound right-turn and northbound left-turn traffic. (Projected deficiency by 2022 and 2025) (HSS highway exempt from City LOS standard)	Construct an eastbound right-turn lane and an additional northbound left-turn lane. This project is compatible with a future WSDOT two-lane US-101 overpass widening. The improvement is also consistent with the recommended improvement for the year 2022, shown in Table IV-12.
E Wallace Kneeland Boulevard and N 13th Street	Traffic demand at the intersection causes the intersection to exceed the City LOS standard for all-way stop-controlled intersections. (Projected deficiency by 2025)	Install a traffic signal with eastbound and westbound left-turn protected phases.
E Batstone Cutoff Road and E Brockdale Road	Traffic demand on eastbound and westbound approaches causes the intersection to exceed the City LOS standard for stop-controlled intersections. (Projected deficiency by 2025)	Construct a northbound left-turn lane and a southbound left-turn lane. Install a traffic signal.
Shelton-Matlock Road and US 101 Southbound Ramps	Traffic demand on southbound off-ramp causes the intersection to exceed the WSDOT LOS standard for stop-controlled intersections. (HSS highway exempt from City LOS standard)	Construct a northbound right-turn lane, and a northbound to southbound left-turn acceleration lane.
Shelton-Matlock Road and US 101 Northbound Ramps	Traffic demand on northbound off-ramp causes the intersection to exceed the WSDOT LOS standard for stop-controlled intersections. (HSS highway exempt from City LOS standard)	Construct a northbound right-turn lane.

LOS analyses were conducted for these 20-year improvements to ensure that the results at these locations would meet the City's LOS standard. Table IV-18 summarizes the projected 2025 LOS at the intersections with the proposed improvements.

Table IV-18: 2025 PM Peak Hour Intersection LOS with 20-Year Recommended Improvements

Intersection	Without Improvement			With Recommended Improvements		
	Traffic Control	Avg. Delay (sec/veh)	LOS	Traffic Control	Avg. Delay (sec/veh)	LOS
N Shelton Spring Road/W Alpine Way and N 13th Street	Eastbound/ Westbound Stop Controlled	>180	F	Signal	29	C
E Wallace Kneeland Boulevard and Olympic Highway N	Signal	105	F	Signal	47	D
E Wallace Kneeland Boulevard and N 13th Street	All-way Stop Controlled	>180	F	Signal	41	D
E Batstone Cutoff Road and E Brockdale Road	Eastbound/ Westbound Stop Controlled	>180	F	Signal	13	B

Intersection	Without Improvement			With Recommended Improvements		
	Traffic Control	Avg. Delay (sec/veh)	LOS	Traffic Control	Avg. Delay (sec/veh)	LOS
Shelton-Matlock Road and US 101 Southbound Ramps	Northbound Stop Controlled	147	F	Northbound Stop Controlled	27	D
Shelton-Matlock Road and US 101 Northbound Ramps	Northbound Stop Controlled	62	F	Northbound Stop Controlled	20	C

Roadway Connections

The adequacy of the connectivity and circulation of the City's roadway system was evaluated, with consideration of the following issues:

- Safety: A street network deficient in connectivity results in longer emergency vehicle response times. In some areas where cul-de-sac, dead-end or closed loop streets dominate, emergency access is made more difficult because of the lack of direct routes. Furthermore, lack of connection in a street network tends to concentrate traffic onto fewer intersections and roadway segments.
- Traffic congestion: When local trips are forced to use the arterial system because the local street system does not provide connectivity, they increase traffic and delay on the regional system. Traffic congestion will lead to higher levels of driver frustration and accident frequencies.
- Trip length: A lack of local street connections limits personal travel options, forcing longer routes for local trips such as those to schools, to other neighborhoods, and to shopping.
- Alternative travel modes: A lack of local street connections also limits other modes of travel such as walking, bicycling, and transit, since automobiles are the most convenient mode in areas where limited street connections require longer trips.
- Service delivery: A lack of local street connections increases the number of delivery trips and causes inefficient trip routes. It also causes inefficient school bus routes. Unnecessary longer trips consume more energy and increase fuel emissions, which is particularly significant for large trucks and buses.
- Utility distribution: The degree of street connectivity also affects utility distribution costs, since utility lines are normally laid within street right-of-way. Options for utility distribution are limited on nearby dead-end streets, and easement acquisition normally drives up costs.

Based upon these considerations, location of existing development, and the expected location of future development, a number of new roadway connections are recommended for the City of Shelton. Proposed connections are shown schematically in Figure ~~18~~16. Actual alignment of a roadway would be determined at pre-design, and the exact location would be established to accommodate development, topographical constraints, and environmental constraints in the most cost-effective manner possible. The proposed connections are described as follows.

Within the southwest quadrant of the City, additional connections are recommended to address planned future residential development in the Beverly Heights neighborhood. The extension of

University Avenue to the east will provide improved access to Pioneer Way and Lake Boulevard. The extension of University Avenue to the west provides a west access point to this neighborhood and a shorter route between southern Shelton and US 101.

The roadways proposed in the northwest quadrant of the City, west of US 101, would serve commercial development planned in this area. The proposed north-south connection of this area to C Street is particularly important as it provides a needed secondary access to the area.

A roadway connection between Olympic Highway N and Wallace Kneeland Boulevard is proposed along the existing electrical transmission lines. Addition of this roadway will reduce congestion at the intersection of Wallace Kneeland Boulevard with Olympic Highway N, and on Wallace Kneeland Boulevard in front of the retail mall.

In the northeast quadrant of the City, roadway connections are proposed to address planned future residential development northeast of Northcliff Road. The extension of Burns Avenue north to John's Prairie Road, extension of Alpine Way to east to Capitol Hill Road, and the other proposed east-west roadways will provide an adequate roadway system to serve traffic in this area. In the east quadrant of the UGA, a roadway connection between John's Prairie Road and Capitol Hill Road would serve industrial and residential developments planned in this area.

In the neighborhood bordered to the west by Magnolia Road and to the south by San Joaquin Road, the only roadway that provides access in and out of the area is San Joaquin Road to the east. The presence of steep bluffs between this area and SR 3 to the south makes provision of secondary access to this area very difficult. Thus the extension of Capital Hill Road to the northeast, ultimately connecting to SR 3 to the east, is recommended to provide this neighborhood with secondary access.

It is expected that the construction of new roadways will be privately funded, in conjunction with the development of the adjacent properties. In addition to the roadway connections proposed within the City UGA, Mason County has proposed a roadway connection between John's Prairie Road and Mason Lake Road in the 2005 Comprehensive Plan, which is also shown in Figure 16~~18~~.

Functional Classification

20-year land use projections and identification of potential development areas indicate that new arterials will be necessary to serve future growth. While the identification of the exact location of these facilities is not appropriate at the planning-level analysis conducted for this Transportation Element, the need for additional facilities can be reasonably identified in a generalized manner.

Figure 17~~19~~ shows dashed lines indicating areas where new functionally classified roadways are recommended under projected future conditions. The existing functionally classified roadways are shown in this figure as well. The proposed lines are not intended to define an actual route, but rather to indicate the potential need for additional north/south or east/west arterial routes. To the greatest extent possible given topographic constraints, the new functionally classified roadways should attempt to provide a grid system.

Freight Routes

Trucking activities in the City of Shelton are a major concern. Roadway projects, particularly those in the vicinity of the Simpson mill, need to take large vehicles into account to the greatest extent

possible in the design of new facilities. The widening of SR 3 north of Pioneer Way/Mill Street, including a new bridge, would enhance trucking operations.

Roadway Upgrades

The City's road improvement priorities are included in a 6-Year Transportation Plan (TIP). The purpose of most of the projects is to upgrade the roadways to urban standards, which should include provision of sidewalks and/or guardrail; improvement of drainage, channelization, and/or lighting; slope stabilization; widening; and/or signalization. ~~A copy of the most recent TIP is included in the Appendix.~~

Transit

It is the policy of the City of Shelton to work cooperatively with the Mason ~~County~~ Transit~~portation~~ Authority (M~~C~~TA) to maintain an acceptable level of transit service throughout the planning period. It is the stated mission of the M~~C~~TA to develop a coordinated system of affordable public transportation that operates within financial limits, maximizes the use of existing transportation resources including volunteers, and is available in most areas of Mason County. The M~~C~~TA Board welcomes public input regarding service needs and it is expected that service route and schedule changes will continue to be made in the future as demand warrants. Through the careful identification of route needs based upon public comment, it is expected that the M~~C~~TA will continue to provide for adequate transit service for Shelton and the Urban Growth Area.

The M~~C~~TA ~~Comprehensive Transit Plan 1995-2000~~2015-2020 Transit Development Plan identifies many projects and improvements that will aid in the maintenance of adequate transportation service levels throughout the County. In addition to future expansion goals, major service development goals presented in the plan include:

- Development of a new schedule for the local Shelton area
- Acquisition of new vehicles to replace currently leased vehicles
- Installation of shelters at key locations in and outside Shelton
- Installation of route signs on primary system routes
- Conducting several service studies, including a Park & Ride study
- Establishing additional connections to Kitsap and Jefferson Counties

Bicycle and Pedestrian Paths

Providing access for bicyclists and pedestrians is an important aspect of Shelton's future transportation system. The Shelton Vision Statement and Forested Hillsides Strategy reinforce the importance of developing formal links between Shelton's neighborhoods and downtown as a key element of Shelton's small town atmosphere.

Due to the fact that many of the existing informal trail areas along Shelton's hillsides that were identified during the development of the Forested Hillsides Strategy are privately owned, securing ownership or access easements along these corridors represents a key step in the process of developing a comprehensive, effective trail system.

The Parks Comprehensive Plan includes a schematic proposed trails plan, and it is likely that specific LOS guidelines for pedestrian trails and bicycle facilities will be developed in conjunction with the future Parks and Recreation Plan update.

A list of priority pedestrian improvement projects may be fund in the City's 6-Year Transportation Improvement Plan. In addition, the Shelton Public Works Department is in the process of drafting a sidewalk prioritization plan.

Transportation Demand Management Strategies

Transportation Demand Management (TDM) addresses traffic congestion by focusing on reducing travel demand rather than adding more roads and facilities. TDM consists of strategies that seek to maximize the efficiency of the transportation system by reducing demand on the system. The results of successful TDM can include:

- Travelers switch from single-occupancy-vehicle (SOV) to HOV modes such as transit, vanpools or carpools.
- Travelers switch from driving to non-motorized modes such as bicycling or walking.
- Travelers change the time they make trips from more congested to less congested times of day.
- Travelers eliminate trips altogether through such means as compressed workweeks, consolidation of errands, or use of telecommunications.
- Shared access in commercial districts

While Shelton and Mason County remain rural in nature when compared with much of the Puget Sound basin, efforts to reduce the number of single occupancy vehicles on Shelton's roadways should be encouraged. Coordination with local and regional transit providers, promotion of transit services and facilities such as park and ride lots or vanpools, as well as the provision of safe, well marked, pedestrian and bicycle facilities will aid in achieving transportation demand management goals at a scale appropriate to Shelton.

The City can promote TDM through administration of land use and zoning policies and/or investments that seek to generate fewer vehicle trips that may include. Strategies can include, but are not limited to, the following:

- parking management;
- trip reduction agreements;
- restricted access to facilities and activity centers; and
- transit-oriented and pedestrian-friendly design; and

~~work with Simpson Timber regarding train schedules and crossing policies.~~

Transportation Finance

Concurrency Management System

For those roadways projected to operate below the established LOS standards under future conditions, the City shall enforce the concurrency management guidelines developed as a part of the implementation of the Comprehensive Plan. The concurrency management guidelines adopted by the City ensure that any existing facilities that function below the established standard receive priority in the City's Transportation Improvement Program. These guidelines also ensure that new development does not occur in a manner that places the entire cost burden for needed improvements upon the taxpayers of Shelton. Specific actions are required by developers to ensure that deficient facilities are targeted for improvement to achieve the minimum adopted LOS standard.

Funding of Improvements

~~Capital Facilities Element of the Comprehensive Plan provides for specific financing information related to the funding of future transportation improvements within the City of Shelton.~~

The cost of funding capacity improvements over the next 20 years is estimated at approximately $66.5 million. Almost $9 million is secured for projects over the next six years, as demonstrated in the 2017-2022 Transportation Improvement Plan, although approximately 40% of this funding goes to ongoing maintenance and operational improvements.

Shelton uses three sources of revenue to fund transportation capacity projects. If continued at their current rate, transportation impact fees will cover approximately 50% of the cost of capacity improvements. The rest of the funding for capacity projects will need to come from outside funds, such as grants or developer contributions, and city sources. A summary of projected transportation funding for capacity improvements in shown in ~~the t~~Table ~~below~~ IV-11 (all figures in 2017 dollars):

Table IV-11: Projected Transportation Funding for Capacity Improvements

Projected Cost of Capacity Improvements 2016-2036	$66.5 million
Projected Revenue – Transportation Impact fees	$33.3 million
Projected Revenue – City sources	$7.1 million
Projected Revenue – Outside sources	$11.7 million
Projected Funding Gap	$14.4 million

The projected revenues above are conservatively estimated, based revenues staying constant over the 20-year period. However, as growth occurs the City will have increased tax revenues, which could be used to fund transportation improvements in greater measure. Over the next 20-years transportation planning will review and update revenue sources annually through the Transportation Improvement Plan process. Increasing the transportation impact fee could bring in additional revenues, as could securing grant funding tied to per capita assessments. In 2016 the City implemented a Transportation Benefit District, which is used primarily for operations and maintenance projects. As revenues grow from this source, it could free up other city funds for transportation capacity projects. If the City is unable to fully fund its transportation improvements, it will reassess its level of service standards and land use plan.

Intergovernmental Coordination

Intergovernmental coordination is a key aspect of the development and implementation of this comprehensive plan. As Shelton and Mason County continue to grow, coordination within the county and the region will become increasingly important. In an effort to develop a positive working relationship with both Mason County and the other counties that make up the PRTPO, the City of Shelton has participated in opportunities to share products and information.

State of Washington

The Washington Transportation Plan (WTP) presents the State of Washington's strategy for implementation programs and budget development over a 20-year planning horizon. The WTP contains an overview of the current conditions of the statewide transportation system, as well as an assessment of the State's future transportation investment needs. The WTP policy framework sets the course for meeting those future needs. The goals of the WTP are grouped into three major categories: Vibrant Communities, Vital Economy, and Sustainable Environment.

- Under Vibrant Communities, goals are directed at maintaining and operating the transportation system to provide all citizens access to basic services; providing seamless multimodal statewide transportation system with minimal congestion; providing a transportation system that is safe and secure; and building communities through community-based design and collaborative decision-making.
- Under Vital Economy, goals are directed toward promoting the State's general prosperity through competitive freight movement and support for tourism.
- Under Sustainable Environment, goals are directed toward stewardship of the environment through maintenance of air quality, water quality, habitats, watershed quality, and connectivity; and by reuse and recycling resource materials.

The WTP addresses the essential and interconnected roles of the Regional Planning Organizations and their local jurisdictions, and the important transportation issues of tribal governments in Washington State. It highlights the role of WSDOT to maintain, preserve and improve the transportation system while meeting the other societal defined above. Although not included in the current update, future updates of the WTP will include a 10-year prioritized implementation plan for meeting the transportation needs of the people of Washington State.

The City of Shelton will continue to cooperate and coordinate with the State of Washington in meeting planning goals, and will identify the impacts that development inside the City will have on the statewide transportation system.

Peninsula Regional Transportation Plan

The goals and policies in this Transportation Element work to support the goals and policies within the PRTPO. The City of Shelton has actively participated in the technical analysis and policy approvals for the Regional Transportation Plan, through attending meetings, conducting City-wide surveys, and reviewing drafts, participating in PRTPO's open house for public comment. The City will continue to ensure that transportation planning efforts are coordinated with and consistent with the Regional Plan.

Mason County

In addition to coordination with PRTPO, the Transportation Element of the Shelton Comprehensive Plan reflects the Countywide Planning Policies with their emphasis upon building an efficient multi-modal transportation system, based on regional priorities. The policies build on the Regional Transportation Plan. These intergovernmental coordination policies express the commitment to coordinate regional and local plans through Peninsula Regional Transportation Planning Organization. During the development of the Transportation Element, Mason County and the City of Shelton have shared their drafts of the Transportation Goals and Policies, demonstrating a commitment towards a cooperative planning effort.

In addition, the City should cooperate with Mason County and the State of Washington in identifying the impacts that development outside the City will have on the City of Shelton's transportation facilities. It is recognized that development in the Urban Growth Area may be subject to the City's concurrency guidelines, and vice versa, and that the two entities should cooperate in performing capacity evaluations and concurrency implementation. Traffic volume increases on City/UGA streets leading to County roads outside the UGA are not anticipated to result in level of service problems for those roadways within the County's jurisdiction.

Transportation Goals and Policies

Introduction

The identification of Shelton's current and future transportation needs is highly dependent on how the City desires its transportation system to look and operate. This dependency requires clear definition of the City's goals, and specific policy commitments to achieve those goals. The City of Shelton's Plan Advisory Committee Vision Statement 2010, adopted by the City Commission in January 1993 and updated in 2003, defines Shelton's transportation goals and provides some basis for transportation policy development. The goals and policies were developed based upon the revised Vision Statement 2010, discussions with the City's original Planning Advisory Committee, City staff, local citizens and review of transportation goals and policies developed by other jurisdictions.

Shelton's transportation goals and policies provide the foundation of the transportation element. They define a framework that can be used in determining what is deficient and what isn't, and provide the direction needed for determining when improvements are necessary, and when they are not.

Transportation goals are grouped into the following major subject areas;

- General
- Transportation and Land Use
- Circulation
- Coordination
- Transit-Ridesharing and Non-Motorized Transportation
- Neighborhood Protection

- Parking Management
- Transportation LOS
- Concurrency Management
- Financing and Implementation
- Transportation Demand Management
- Transportation System Management

The following goals and policies apply to all new development unless otherwise noted.

General

T1. Establish an effective transportation planning process in Shelton.

T1a. Provide a transportation planning, funding and implementation framework that distributes costs and benefits equitably, assures adequate provision of necessary infrastructure, includes ample opportunity for public participation, and offers reasonable levels of certainty regarding transportation system development.

T1b. Give primary consideration during planning, development, maintenance and administration of the City's transportation system to the implementation of the City's land use plan and regional growth strategy.

T2. Support a safe, comfortable and reliable transportation system, providing adequate mobility for all people, goods and services.

T2a. Encourage a range of viable transportation alternatives to assure mobility for Shelton citizens and workers.

Transportation and Land Use

T3. Encourage compatibility between transportation facilities and surrounding land uses.

T3a. The City's transportation system shall be planned and designed to support growth and economic vitality in accordance with this Comprehensive Plan.

T3b. The City shall require new development and redevelopment to incorporate transit, pedestrian, and non-motorized transportation supportive measures proportionate to the scale of proposed development, during the development review process, including measures such as:

- Providing adequate sidewalks, pathways and crosswalks that allow for access by all persons;
- Minimizing walking distances between buildings and streets, sidewalks, and transit stops;
- Clustering buildings;
- Preserving and extending the connectivity of the pedestrian, bicycle and grid street system;

- Incorporating traffic calming measures in neighborhoods, as appropriate, to reduce speeds and crossing distances;
- Promote shared access; and
- Designing transit access into new developments, as appropriate, considering stops and shelters as part of the overall project, when recommended by the Mason County Transit Authority.

T3c. Public and private development projects shall be designed to be accessible to all citizens and by many different modes of travel.

T3d. The City should explore strategies to improve traffic flow on 1st Street~~Avenue~~ including, but not limited to, establishing one-way couplets, utilizing round abouts, etc..

T4. Secure adequate land for rights-of-way, including land needed for future roadway and trail system improvements.

T4a. The City shall emphasize planning of land uses that minimizes the demand for travel by providing for a mixture of compatible, complementary uses in reasonable proximity to each other.

T4b. The City shall approve the vacation of City rights-of-way only when it can be demonstrated that such a vacation would significantly advance other City goals and objectives, and that the vacated property will never be needed for public purposes.

T4c. Review proposed new developments to avoid the isolation of nearby properties from the transportation network.

Circulation

T5. Minimize travel times for people and goods.

T5a. The City should seek to assure convenient access from arterials to residential neighborhoods, employment and retail centers, and major community and government facilities. Development approval should:

- Require that all improved property in the city be conveniently accessible from streets, walkways or trails;
- Maintain continuity of the street pattern by avoiding half streets and non-extendible dead-end streets without adequate turn-around room for emergency vehicles;
- Expand the city's street grid system where feasible; and
- Avoid the creation of excessively large blocks and long local streets through the development of maximum size guidelines for new City blocks.

T6. Emphasize the movement of people and goods rather than vehicles in order to obtain the most efficient use of transportation facilities.

T6a. The City should seek to maximize the functionality and safety of the local circulation system while minimizing environmental impacts by observing the following guidelines:

- Control the location and spacing of driveways and the design of parking lots to avoid traffic and pedestrian conflicts, confusing circulation patterns, and line-of-sight obstructions resulting from signage, natural features, roadway curves, etc. Develop clear and uniform signage to guide traffic through and within the City;
- Encourage through-traffic to take advantage of alternative by-pass routes through the use of signage when possible;
- Designate special routes for through truck traffic and the transportation of hazardous materials;
- As development occurs, extend dead-end streets to improve access and circulation and complete the street grid network;
- Allow street alignments to follow existing topography when development of the grid pattern would cause severe grades;
- Provide adequate access for public safety vehicles; and
- Incorporate significant natural landscape features in the design of circulation improvements whenever practical.

T7. Reduce consumption of energy through an efficient and convenient transportation system.

T7a. The City should identify specific corridors, zones, or connection points throughout the City around which a coordinated system of multi-modal facilities should be developed to aid the convenient movement of people within Shelton.

T7b. The City should support and develop transportation facilities that seek to integrate or link two or more potential modes of travel along appropriately identified corridors.

Coordination

T8. Promote effective coordination between and among governments, private enterprise, and the community.

T8a. The City will support and participate in the cooperative regional transportation planning process conducted by the Peninsula Regional Transportation Planning Organization (PRTPO).

T8b. The City will continue to work with Mason County, WSDOT, the Mason ~~County~~ Transit~~portation~~ Authority, and other agencies or transportation service providers on an ongoing basis to plan, fund, and implement joint transportation projects and programs.

T8c. Use the telephone, website, and local media to receive public concerns and comments regarding specific transportation facilities or issues.

T8d. Provide opportunities for public involvement in the identification, design, and implementation of transportation related improvements in Shelton.

Transit-Ridesharing and Non-Motorized Transportation

T9. Recognize and implement the community vision of safe and coordinated pedestrian and bicycle facilities as an effective transportation alternative within Shelton.

T9a. Promote the use of bicycle and pedestrian transportation as viable alternatives to the single occupant vehicle, especially for trips within downtown Shelton.

T9b. Provide a safe, coordinated system of bikeways, walkways, and trails, including through routes, to meet existing and anticipated needs of non-motorized transportation.

T9c. Maximize the safety and functionality of the pedestrian and bicycle system by:

- Requiring intersection design that facilitates pedestrian crossing;
- Minimizing obstructions within paths and/or pedestrian walkways; and
- Providing a consistent, comprehensive system of signs.

T9d. The City should research and develop appropriate standards for sidewalks and road improvements for use in the review and approval of in-fill development projects.

T10. Participate in the development of coordinated transit and ridesharing services and access locations within the City of Shelton.

T10a. The City shall work with the Mason ~~County Transportation~~Transit Authority in its development of a public transportation system that allows people convenient and quick travel between and within local activity centers.

T10b. The City shall work with the Mason Transit ~~County Transportation~~ Authority to identify and designate appropriate sites for transit facilities, including bus stops and Park and Ride facilities for commuters traveling to Olympia and Bremerton. Ensure that clear provision for such facilities is made in the City's zoning code and development regulations.

T10c. The City shall support ridesharing services such as ride matching, van pools, personalized commuter assistance, and the marketing of such services through a cooperative effort with the Mason Transit ~~County Transportation~~ Authority and neighboring jurisdictions.

T10d. The City shall work with the Mason Transit ~~County Transportation~~ Authority, WSDOT and Mason County to jointly plan and build a network of primary transit corridors that emphasize transit, ride-sharing, and bicycling to move people between activity centers. Incorporate designated primary transit corridors into the City's plans.

T10e. The City shall work with the Mason Transit ~~County Transportation~~ Authority, WSDOT, and Mason County to plan and construct transit-friendly road treatments along primary corridors and selected transit routes.

T10f. The City shall encourage the use of public transit by bicyclists and pedestrians by: Providing for safe, attractive, comfortable walkways and waiting facilities at public transit loading areas;

- Providing for secure bicycle storage at transit facilities;
- Supporting the installation of bicycle racks on all Mason ~~County~~ Transit buses; and
- Assisting with the development and distribution of information concerning local and regional non-motorized routes,

Neighborhood Protection

T11. Protect residential neighborhoods from adverse traffic impacts.

T11a. The City shall minimize the environmental impacts of traffic on residential neighborhoods by discouraging the regular use of local access streets by non-local traffic.

T11b. The City shall establish and maintain a traffic control program for assessing and responding to residential neighborhood traffic control concerns. Establish standards for maximum desirable traffic volumes and percentage of non-local traffic, particularly for peak travel periods. Establish a process for escalating control responses based on the severity of the local traffic problem.

T11c. The City shall design new residential streets to discourage regular use by cut-through traffic while maintaining the connectivity of the transportation system. Design could include traffic calming devices, or other measures proven effective to reduce cut-through traffic.

T11d. The City shall pursue the designation of new arterial roadways in neighborhoods where such a designation would aid in a reduction of recurring traffic impacts.

Parking Management

T12. Recognize the importance of adequate, easily accessible, attractive, and well dispersed on-street and/or on-site parking as a valuable community asset, especially downtown.

T12a. The City should apply parking ratios that reflect the least amount of spaces required for development approval where forms of transportation besides the automobile are demonstrated to be available to serve travel needs.

T12b. The City should assure parking availability for commercial needs without impacting arterial circulation, residential neighborhoods, or other businesses by:

- Limiting parking on arterials that have inadequate capacity;
- Encouraging joint development of off-street parking facilities for compatible land uses to reduce total parking capacity needs;

- Working with business owners toward a goal of limiting employee parking to off-street facilities, and reserving on-street parking for business customer and residential use;
- Making more efficient use of existing parking facilities and opportunities for the shared use of facilities; and
- Coordinating parking facilities and parking related policies with the Mason Transit ~~County Transportation~~ Authority's transit plan to encourage alternative travel by employees and customers.

T12c. Solicit the help and support of downtown merchants to inventory and assess parking capacity needs in the Downtown Shelton area on a regular basis, and to develop strategies to provide more efficient shared parking.

T12d. The City should explore a range of parking alternative scenarios, including one-way designations and/or diagonal parking, along less traveled side streets in downtown Shelton.

T12e. The City should recognize the negative impact that parking ratios can have upon historic or downtown buildings and districts, and allow for the creation of a special overlay district within which parking requirements may be waived or lessened.

T12f. The City should encourage the use of landscaped planters, brick walls, etc. along the edge of parking areas when abutting major streets in an attempt to maintain consistency in the building facade line. (The Key Bank drive-thru at the corner of Railroad and Fifth Streets is one example of this concept.)

Level of Service

T13. Establish minimum LOS standards to assure adequacy of transportation facilities throughout the City and its planning area.

T13a. The City should establish consistent functional classifications to preserve traffic capacity and to plan for needed capacity improvements based on function and desired land use patterns.

T13b. The City shall develop and maintain a transportation system inventory program to provide information needed for facility operation, maintenance and planning. This program should, as resources are available, include:

- Traffic counts;
- LOS calculations (at identified links and intersections);
- Accident History;
- Speed studies;
- Signs and markings;
- Signals and street lights;
- Parking (on- and off-street);
- Pavement conditions; and

- Ten-year traffic forecasts.

T13c. The minimum LOS standard for City of Shelton intersections ~~and roadway segments~~ shall be LOS D with the exception of the Olympic Highway/Wallace Kneeland Boulevard intersection, which shall be LOS E.

T14. Maintain consistency in analysis through the establishment of clear guidelines for calculating transportation LOS on Shelton's arterial roadways and intersections.

T14a. LOS shall be calculated using a combined intersection delay and volume-to-capacity method for intersections, and volume-to-capacity ratio for street segments.

T14b. The City should consider the addition of new roadway segments, new intersections, and new transportation facilities of all types, to those measured for LOS as the need is established.

Concurrency Management

T15. Ensure that established LOS for transportation facilities are maintained on all roadways within the City of Shelton as new development occurs by adopting clear concurrency management guidelines.

T15a. In the event that the City is unable to fund its share of transportation capital improvements needed to maintain adopted transportation service standards, then the City shall take one or both of the following actions:

- Reassess the City's land use and growth plans to reduce the travel demand placed on the system to the degree necessary to meet adopted transportation service standards
- Lower the City's adopted transportation LOS standards to reflect service levels that can be maintained given known financial resources

T15b. If the LOS along an identified roadway segment or at an identified intersection falls below the established minimum LOS standard for that segment or intersection, the City shall take one or a combination of all the following actions:

- Supply more transportation capacity in the form of roadway or other necessary improvements on the affected arterial to achieve the threshold;
- Designate new alternative arterial routes on adjacent existing roadways to aid in the reduction of congestion;
- Restrict new growth to reduce travel demand to achieve the threshold; and/or
- Lower the City's LOS standards and/or compliance threshold-

T15c. New development or redevelopment that is found to cause LOS to fall below the established LOS standard shall be required to pay its fair share of the costs of mitigating the identified impacts.

T15d. Review all proposed development to ensure that adequate transportation facilities are available or will be made available within six years of occupancy or operation and that adopted service standards have been maintained. (Any development that would cause the LOS to fall below adopted service standards shall demonstrate a

commitment to comply with the City of Shelton Transportation Concurrency Management Ordinance prior to development approval.)

T16. Provide for a reasonable level of flexibility in the administration of Shelton's concurrency management program.

T16a. Provide a mechanism for exempting specific land uses from meeting the City's transportation service standards when it is established that those land uses significantly advance City objectives in areas other than mobility.

T16b. Recognize that special events such as festivals, fairs, parades, athletic events, and large meetings may burden the transportation system beyond its ordinary capacity, and that since these events can expand the culture and improve the quality of life of the community, the City, with the sponsors, will seek to provide for such events by making appropriate provisions (street closures, traffic control, etc.) In general, the costs of such provisions will be assessed to the promoters or organizers of such events.

Financing and Implementation

T17. Recognize the need for coordination and cooperation with Mason County, and WSDOT in the development of an effective transportation system in and around Shelton.

T17a. The City should develop Memorandum of Understandings with Mason County and the WSDOT in which the parties agree to participate in the mitigation of significant impacts caused by development in one jurisdiction that affects service standards in the other jurisdictions. Prior to entering into such an agreement, the City shall verify the reasonableness of the concurrency service standards of Mason County and the WSDOT.

~~T17b. The City should, in consultation with WSDOT and the County, evaluate the feasibility of adding a new freeway interchange and/or making improvements to SR 3.~~

T18. Distribute transportation costs and benefits equitably.

T18a. The City shall develop and maintain financial mechanisms that assure that on-going development contributes its fair share to the mitigation of transportation impacts related to growth. Such mechanisms may include impact fees, local improvement districts, and transportation benefit districts. Fair share shall be calculated by allocating costs on the basis of benefit derived.

T18b. Expenditures for neighborhood traffic control programs shall be largely or completely borne by new development in recognition of the direct linkage between growth-induced traffic congestion and "overflow" traffic impacts.

T18c. The City should develop and maintain mechanisms for sharing costs of transportation improvements with other jurisdictions when such improvements are necessary to mitigate impacts of travel from those jurisdictions to or through Shelton.

T18d. The City should explore new mechanisms for distributing the costs of transportation facility improvements with as broad a base of users as possible in an attempt to recognize that landowners adjacent to such improvements are not the sole beneficiaries of such improvements.

T19. Be consistent and fair in establishing priorities for transportation expenditures.

T19a. The City shall allocate resources in the City's transportation capital investment program according to the following guidelines:

- Address public health and safety concerns;
- Ensure adequate maintenance of existing facilities throughout the city, while minimizing the cost;
- Provide capacity improvements serving downtown Shelton;
- Provide capacity improvements serving Port properties and other designated manufacturing and industrial areas; and
- Provide capacity improvements serving all other areas.

T19b. The City should allocate resources in the City's transportation capital investment program to give priority to multi-modal projects over projects primarily serving one mode.

T20. Maximize the use of non-City funds, including but not limited to Federal and State grants to pay for necessary transportation improvements.

T20a. The City should identify and pursue a long-term strategy for obtaining grant funding that matches project objectives with revenue sources to maximize opportunities for leveraging local funds. Allocate adequate local funds to effectively compete in regional, state and federal grant funding programs.

T21. Develop an efficient and cost effective transportation system.

T21a. The City should promote the planned use of limited resources such as land, manpower, and money in order to minimize transportation facility and service costs and protect capital investment in transportation facilities while enhancing options for future improvements to the transportation system by taking advantage of advances in technology and transportation research.

T21.b. Explore the use of intelligent transportation system technology and infrastructure to support the efficient movement of people and vehicles throughout the city.

Transportation Demand Management

T22. Reduce the use of single-occupant vehicles and vehicle-miles traveled, through a coordinated program of regulations, marketing, and provision of alternative travel options.

T22a. The City should encourage new development to include site design features that reduce auto dependency.

T22b. The City should coordinate with regional entities such as Mason Transit Authority ~~develop a marketing strategy~~ to inform people about travel choices and promote changes in travel behavior.

T22c. The City should develop a sufficient array of alternative travel options by providing and maintaining pedestrian and bicycle facilities.

T22d. Public transit use shall be promoted by working with the Mason ~~County~~ Transit~~portation~~ Authority to expand service as feasible, enhance existing transit facilities and ensure new development provides for needed transit improvements.

Transportation System Management

T23. Identify and meet transportation system expansion and maintenance needs created by existing and projected traffic levels.

T23a. The City should ensure that existing and future roadways are maximized through proper traffic operations and traffic control systems.

T23b. The City should coordinate transportation services and facilities to increase the carrying capacity of the existing transportation system.

T23c. All transportation system facilities should be designed, constructed, and maintained to ensure safe movement of vehicles, goods, pedestrians, and bicycles.

T23d. The City should establish design-based standards for streets and associated improvements that complement neighborhood character while safely accommodating forecasted traffic levels. Traffic levels should be based on local and regional land use assumptions.

Environmental and Human Health

T24. Minimize transportation impacts on the natural environment and the people who live and work in the Peninsula Region.

T24a. Develop the transportation system to minimize environmental impacts, while addressing transportation and land use objectives.

T24b. Avoid, minimize, or mitigate significant impacts to air quality, noise, light/glare and other elements of the environment in planning and implementing transportation projects.

Rail Transportation

T. 25. Support the continued use of rail corridors consistent with other land use and transportation goals.

T. 25a. Support the use of functioning rail lines that do not interfere with City streets and/or traffic flow.

T. 26b. Encourage the adaptive reuse of non-functioning rail corridors to other uses, such as wildlife corridors, multiuse trails, etc.

Aviation

T. 26 Provide an appropriate level of facilities and services to meet the general aviation needs of residents and businesses in the region.

Marine Transportation

T. 27 Provide an appropriate level of facilities and services to meet the region's marine transportation needs.

Additional transportation policies pertaining to the UGA can be found in Chapter X.

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