

SR 19: SR 104 TO SR 20 AND SR 20: SR 19 TO FERRY TERMINAL

CHARACTERISTICS

Segment Description:

SR 19/104 intersection, continuing on SR 20 to the Port Townsend Ferry Terminal Landing.

County/Counties: Jefferson

Cities/Towns Included: There are several communities located along the corridor. They are Beaver Valley, Chimacum, Port Hadlock, Irondale, Kala Point, Glen Cove and the city of Port Townsend.

Number of lanes in the corridor: 2 to 3

Lane width: 11 to 12 feet.

Speed limit: 25 to 50 mph.

Median width: 0 to 0 feet.

Shoulder width: 2 to 14 feet.

Highway Characteristics:

SR 19 has been reclassified to a Highway of Statewide Significance (HSS) and the SR 20 corridor segment is HSS. Both routes have a freight classification of T-3 with 300,000 to 4 million tons per year (average gross annual truck tonnage). In 2005, approximately 3.6 million was on SR 19 and approximately 3.5 million was estimated on SR 20.

Special Use Lane Information (HOV, Bicycle, Climbing):

Existing two-way left turn lanes (two way left turn lane (TWLTL)) are found along both SR 19 and SR 20 in commercially developed areas.

Access Control Type(s):

SR 19 is Class 2 from MP 0.00 to MP 9.09 and Class 3 from MP 9.09 to MP 14.16.

SR 20 is Class 2 from MP 7.79 to MP 9.78, Class 3 from MP 9.78 to MP 11.96, and Class 4 from MP 11.96 to MP 12.56.

Terrain Characteristics:

The first 8.8 miles of SR 19 is rolling terrain with the remaining 5.29 miles in level terrain. SR 20 from the SR 19 Intersection to the Port Townsend Ferry Terminal is rolling terrain.

Natural Features:

Anderson Lake State Park is located off of SR 19 at MP 10.05, left and Old Fort Townsend State Park is located off of SR 20 at MP 8.26. The 50 to 80 foot high bluffs are a predominate feature when entering downtown Port Townsend. There are scenic views toward Port Townsend Bay and Puget Sound from Water Street (SR 20) in downtown Port Townsend. Fort Warden State Park, Jefferson County Fairgrounds, and other smaller parks are located in Port Townsend.

Adjacent Land Description:

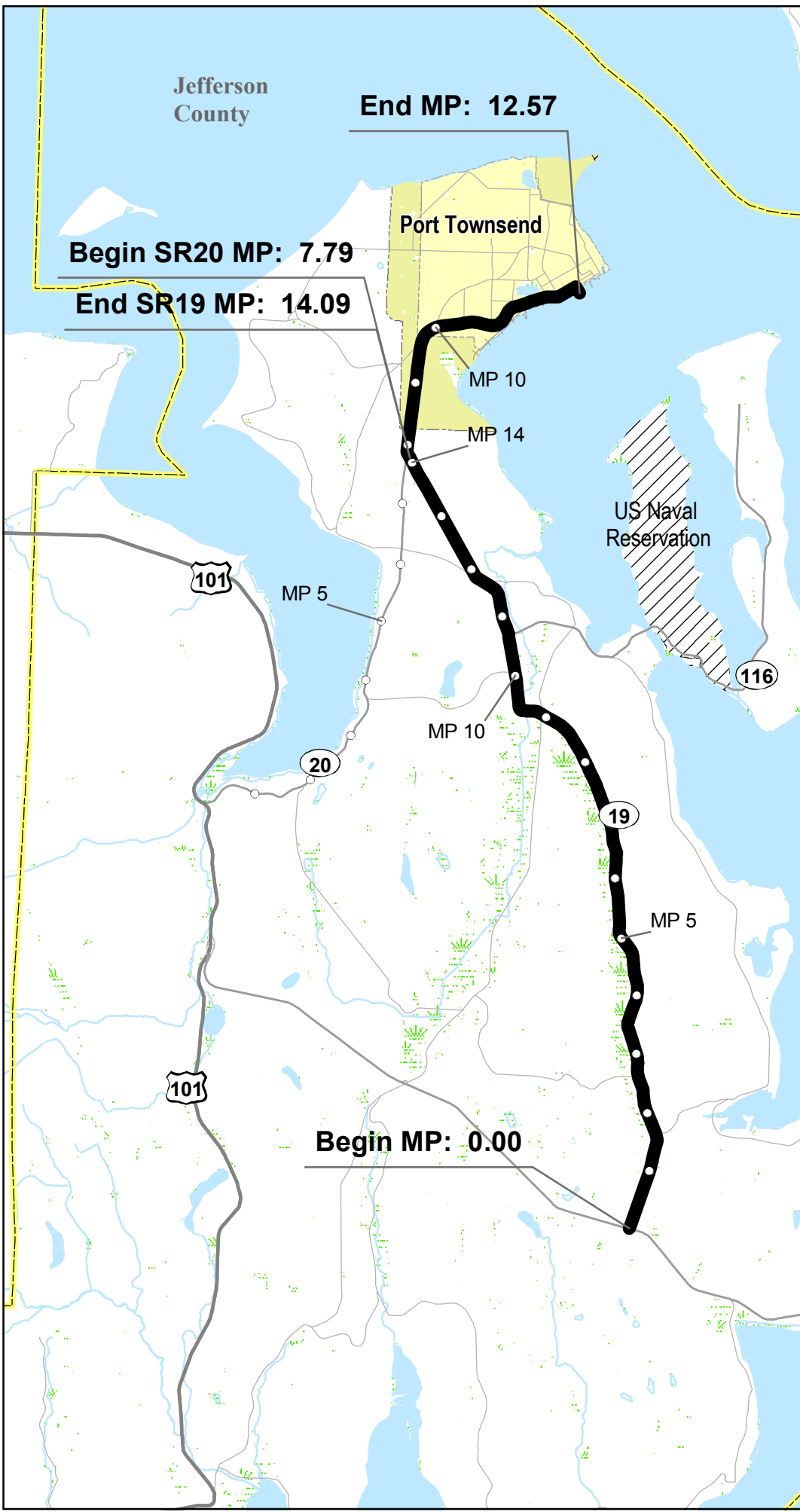
SR 19 and SR 20 travel through the traditional areas of interest (usual and accustomed areas) for the Lower Elwha Tribe and a portion of SR 19 in Suquamish Tribe area. East Jefferson County is a traditional area of interest (usual and accustomed area) for the Non-Federally recognized Snohomish Tribe whose office is now located in Port Hadlock. SR 19 is bordered by Commercial and Rural Forested land, Prime and Local Agricultural land, Rural Residential land, a Convenience Crossroads, and a Rural Village Center. SR 20 is bordered by General Crossroads, Rural Residential land, Light Industrial/Commercial land, Industrial land, and is within the Port Townsend Urban Growth Area.

Environmental Issues:

There are approximately 24 fish barriers of which approximately 5 require work, approximately 7 unstable slopes (5 erosion, 2 settlement), approximately 5 leaking underground storage tanks (2 on SR 19, 3 on SR 20), and significant wetlands immediately west of SR 19 and Kah-Tai Lagoon (wetland) west of SR 20 in Port Townsend. Near SR 19 MP 8.82 and MP 9.36 there are 2 impaired and threatened watercourses which are Water Quality Assessment for Impaired Waters (303d) candidates. Near SR 20 MP 12.13 is a confirmed or suspected contaminated site. The Chimacum post office on SR 19 and the James C. Saunders House in Port Townsend are historical buildings. Port Townsend Historic District is a National Historic Landmark.

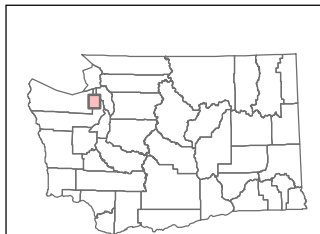
Major Economic Issues:

The Jefferson County International Airport is located off SR 19 at MP 12.95, left. Port Townsend is a major tourist destination and is served by a WSDOT ferry that runs between Port Townsend and Keystone. Port Townsend is the county seat of Jefferson County.



HSP Congested Corridor Analysis
Characteristics

- Milepost Markes
- ▬ HSP Corridor Location
- ▬ U.S. Interstate
- ▬ U.S. Highway
- ▬ State Route
- ▬ Local Roads
- ▬ Railroad
- ▬ Wetlands
- ▬ Military Reservation
- ▬ Tribal Lands
- ▬ City Limits
- ▬ Urban Area
- ▬ County Line



Corridor Location

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ASSETS

Pavement:

There are approximately 28.18 lane miles of Hot Mix Asphalt on this segment of SR 19 and approximately 9.71 lane miles on SR 20.

Signal:

There are 3 rural signals on SR 19 and 4 urban signals on SR 20 in the City of Port Townsend.

Structures:

There are two structures in this corridor that consist of: one Concrete Slab and one Concrete Arch.

(Ramps, and locally owned structures (if any exist) are not identified in this section and may not be reflected on maps.)

Features Crossed:

Olympic Discovery Trail provides an alternative bike and pedestrian route around and under the Old CMSTP & P railroad bridge on SR 20 at MP 9.16 to MP 9.20. SR 20 runs parallel to Port Townsend Bay and Puget Sound in the city of Port Townsend.

ITS Facilities:

None at this time, but future facilities could include closed circuit television cameras (CCTV) at or near the Port Townsend Ferry Terminal on SR 20 and SR 19 could have highway advisory radio when conditions warrant Hood Canal Bridge Closures.

Railroad Crossings:

No at-grade railroad crossings.

Asset Other:

A county owned Park & Ride lot is on SR 19 at MP 0.08 to MP 0.10 with approximately 40 parking spaces. A Jefferson Transit owned Park & Ride lot is on Haines Place near SR 20 MP 11.51 with 267 parking spaces.

HSP Congested Corridor Analysis

Assets

HSP Corridor Location

Assets

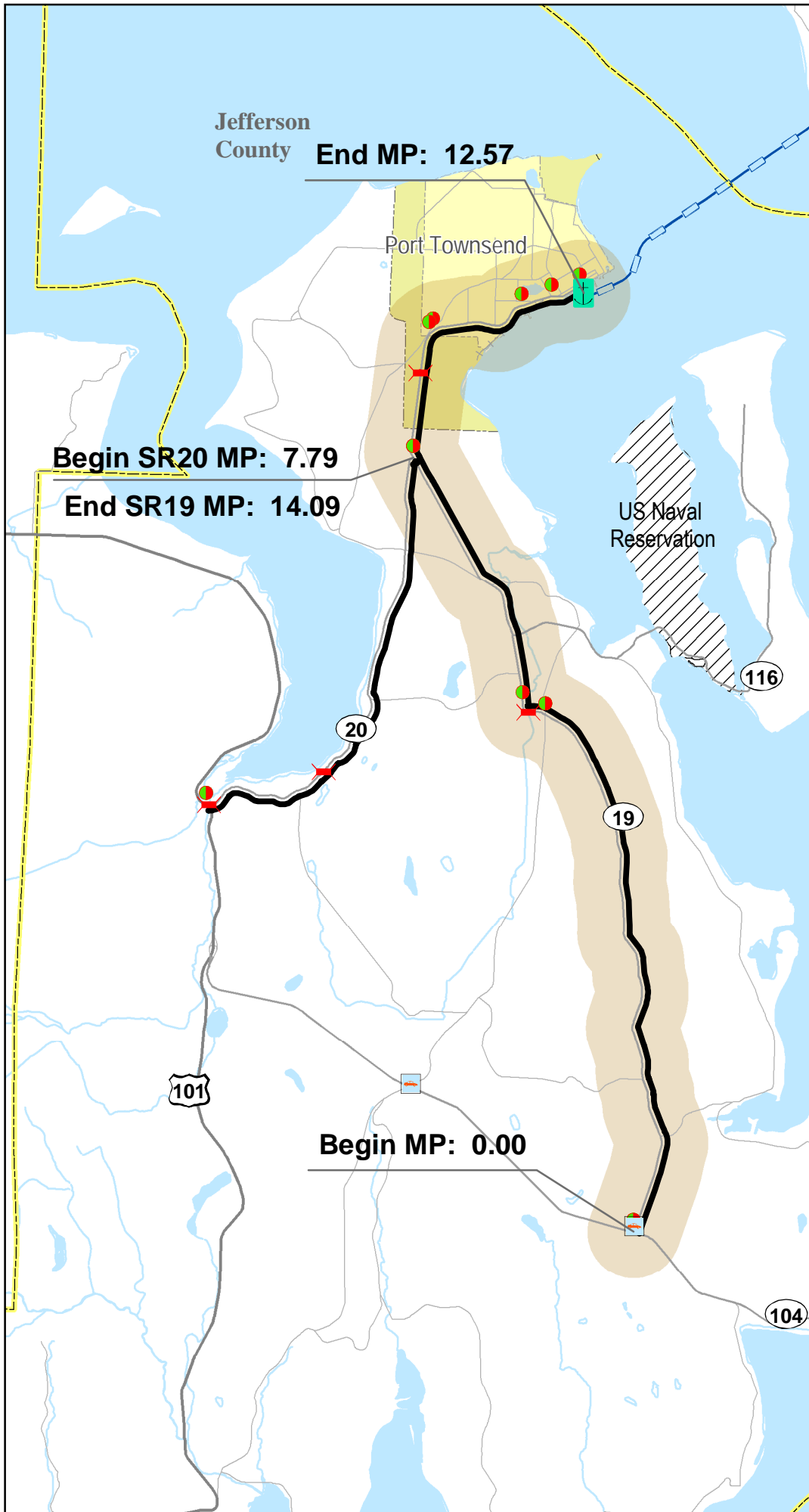
- Signalized Intersection
- At Grade Railroad Crossings
- Bridge
- Ferry Terminals
- Ferry Route
- Park and Ride
- Weigh Stations
- Rest Area Sites

Corridor Pavement Type

- HMA
- BST
- PCCP

Other Features

- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
- Urban Area
- Airport
- County Line



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USAGE

General Origin and Destination Travel Characteristics:

None Identified.

Snow/ice Issues:

There are no sections within this corridor which present a problem for normal snow/ice control.

Annual Average Daily Traffic:

Ranges from 6,400 to 16,000.

Significant Seasonal Average Annual Daily Traffic Changes:

January traffic volume is approximately 25% to 53% lower than annual average with August traffic volumes approximately 10% to 19% to higher than annual average.

General Description of Major Average Annual Daily Traffic Locations:

SR 19 from SR 116 to SR 20 with 12,000 to 14,000 annual average daily traffic (AADT) in 2004. SR 20 from SR 19 to Kearney Street Vicinity with 12,000 to 16,000 AADT in 2004

Freight:

Freight Classification: T3

Yearly Tonnage: 0.3M to 4M

Truck Percentage of Annual Average Daily Traffic: 12.48% to 14.02%

Additional Usage Comments:

Port Townsend Ferry Terminal Improvements will build a vehicle holding area within the terminal in 2009 to 2011.

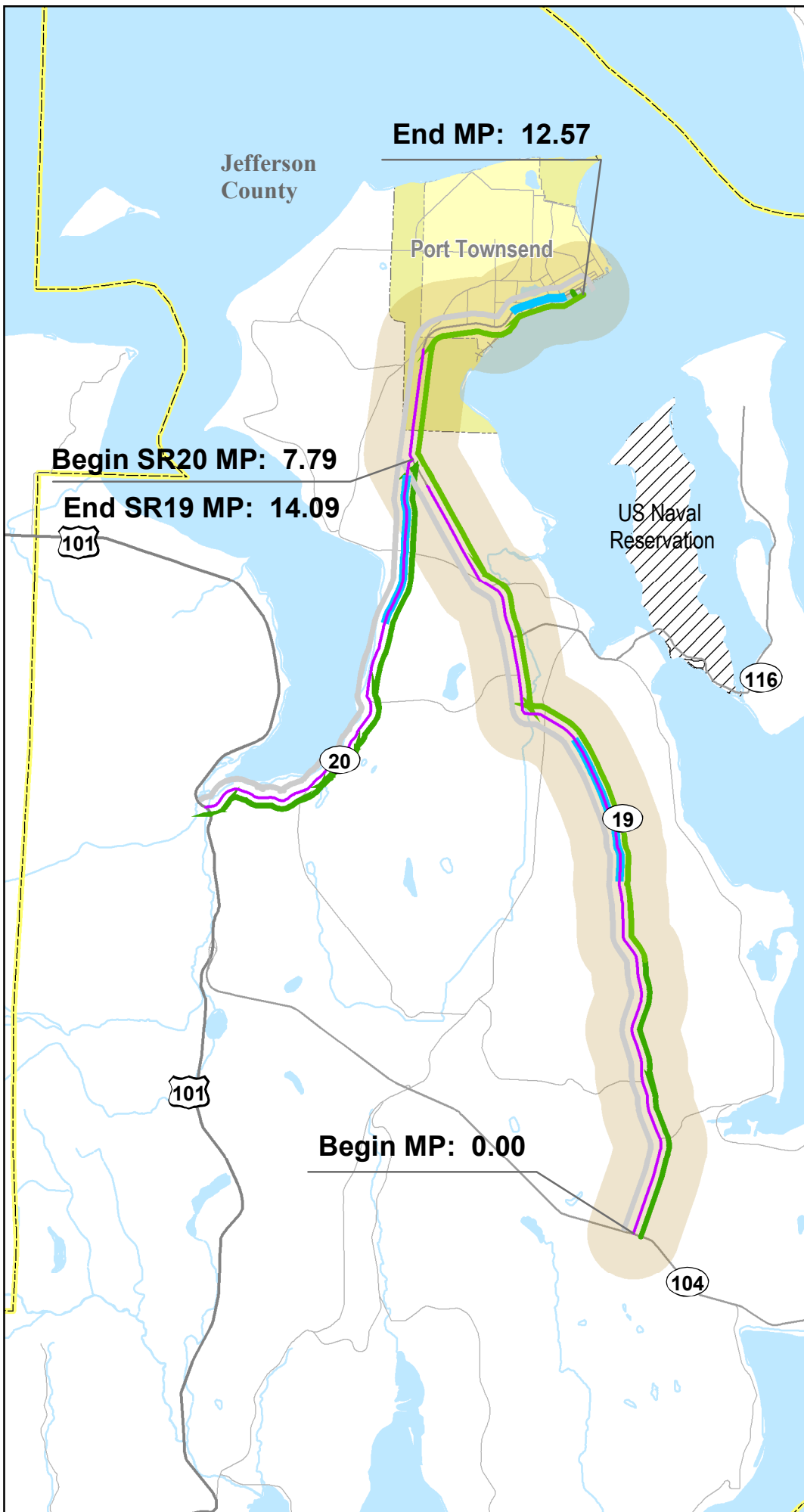
Average Annual Societal Cost of All Collisions: Approximately \$4.25M

Collisions:

Severe No of Collisions: 7

Less Severe No of Collisions: 229

List Data Years: 2003 to 2005



HSP Congested
Corridor Analysis
Usage

- HSP Corridor Location
- Safety Analysis Areas**
- PAL Spot 07-09
- PAL Corridor 07-09
- HAC 07-09
- HAL Corridor 07-09
- HAL Spot 07-09
- Freight Classification**
- T-1
- T-2
- T-3
- Traffic Sections AADT**
- < 3,000
- 3,001 - 10,000
- 10,001 - 20,000
- 20,001 - 40,000
- 40,001 - 80,000
- 80,001 - 100,000
- 100,001 - 120,000
- > 120,000
- Trucks 10% and Over
- Other Features**
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Tribal Lands
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NEEDS AND STRATEGIES

Preservation

Pavement Condition and Needs:

Preservation of transportation infrastructure to achieve the lowest life cycle cost and prevent failure. Pavements should be programmed targeting the lowest life cycle cost per the Washington State Pavement Management System "due" date. This is the point in pavement's life cycle where optimum pavement life has been achieved and the least cost to resurface is obtained. Pavements that have past this point typically incur more costs to rehabilitate. Existing safety features shall be restored to provide basic design level standards.

Pavement Management Strategies:

Reduce the backlog of pavement preservation needs that have gone beyond the point of economical resurfacing (lowest lifecycle cost). Existing hot mix asphalt (HMA or ACP) has an average life of 16.5 years in Western Washington. When the last pavement cycle approaches the due date or exceeds the average life cycle, paving with bituminous surface treatment (BST) to extend the life or surfacing with HMA will be necessary.

Structures Condition and Needs:

Preserve transportation infrastructure to achieve the lowest life cycle cost and prevent failure. (This may include ramps and locally owned structures if any exist.)

Structures Management Strategies:

Bridge's 20 year plan proposes seismic retrofit for SNCRR OC (CMSTPP), bridge 020/15, for approximately \$162,000 in year 2007. However, future work at the railroad overcrossing is not funded at this time.

Additional Condition and Needs:

Preserve transportation infrastructure such as electronic/mechanical systems, major drainage, safety rest area refurbishment, traffic control systems, unstable slopes, weight facilities.

Additional Management Strategies:

Constructing bottleneck and chokepoint solutions and highway system plan conceptual solutions address unstable slopes by assuming retaining wall costs in the vicinity of the unstable slope (10 ft high for the length of deficiency) The signal at Kearney in Port Townsend needs replacement - see assets signals for the rest of the story.

Improvement

Mobility Condition and Needs:

Reduce congestion at the intersection of SR 19 and SR 116.

Reduce congestion on SR 19 from MP 9.09 to SR 20 MP 10.82.

To improve mobility the city of Port Townsend is analyzing the city street network.

Mobility Management Strategies:

Intersection improvements include installing an additional southbound left turn lane, a northbound right turn lane, reconfiguring the westbound channelization by installing a right turn lane. Consider a northbound acceleration lane, and install a signal system. Widen SR 19 MP 9.09 to SR 20 MP 10.82 to 4 lanes and/or apply access management. The city of Port Townsend is considering adding a roundabout or signal at Howard Street and SR 20 (Sims Way). Howard Street will connect with Discovery Rd to improve the city's network of streets. Add a southbound climbing lane on SR 20 from MP 10.82 to MP 11.49. Add Ferry holding lane for Port Townsend Ferry.

Safety Condition and Needs:

Reduce and prevent deaths and the frequency and severity of disabling injuries, and reduce the societal costs of accidents (Focus on the rate of severity and frequency). The SR 19 and SR 20 corridor experiences 42% rear ends, 23% single vehicle run off the road, 15% T-Bone, 5% mainline opposite direction, 5% pedestrian/bicycle, and 10% other. Under 23 United States Code-Section 409, this data cannot be used in discovery or as evidence at trial in any action for damages against the WSDOT or the State of Washington. This disclaimer is for all accident data mentioned in this report.

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Safety Management Strategies:

Constructing bottleneck and chokepoint solutions and highway system plan conceptual solutions should reduce these kind of accidents. A 30% reduction in all accidents was assumed as a placeholder in the bottleneck and chokepoint solutions.

Environmental Condition and Needs:

Reduce impacts and consider mitigation opportunities for hazardous sites, barriers to habitat connectivity, wetlands, FEMA mapped flood plains, and historical resources/sites. SR 19/SR 20 corridor has fish barriers, leaking underground storage tanks (LUST), wetlands, and may cover an area with threatened or endangered species.

Environmental Management Strategies:

Fish passage barriers: Culverts that have been identified as fish passage barriers that will be impacted by the construction of highway projects within this corridor will be corrected.

LUST: Suspected contaminated sites will be subject to initial site assessments, preliminary site investigation and/or detailed site investigations as appropriate during project development.

Wetlands: Wetlands impacted by projects in this corridor will be mitigated in accordance with WSDOT's no net loss policy.

Threatened and endangered species: Biological assessments will be performed on projects in this corridor to determine the effects on plants and wildlife. Mitigating measures will be suggested where appropriate.

Restrictions:

There are none identified.

50-Year Configuration:

The long range goal is that SR 19 would be a 4 lane divided facility except for the urban cluster boundary of Port Hadlock-Irondale and SR 20 would be a 4 lane divided facility except for the urban area boundary of Port Townsend. The City of Port Townsend would have a 4 to 5 lane facility (center two way left turn lane (TWLTL) or raised median).

HSP Congested Corridor Analysis

Needs

HSP Corridor Location

Bridge Priorities

- Replacement
- Special
- Seismic
- Scour
- Painting
- Miscellaneous
- Bridge Deck

Other Bridge Issues

- ◆ 2 Lane BW Narrow Bridge
- Restricted Bridge
- Posted Bridge
- ▲ Vert. Clearance < 15.5'

Unstable Slope

- ▲ Debris Flow
- ▲ Erosion
- ▲ Landslide
- ▲ Rockfall
- ▲ Settlement

Fish Passage Barriers

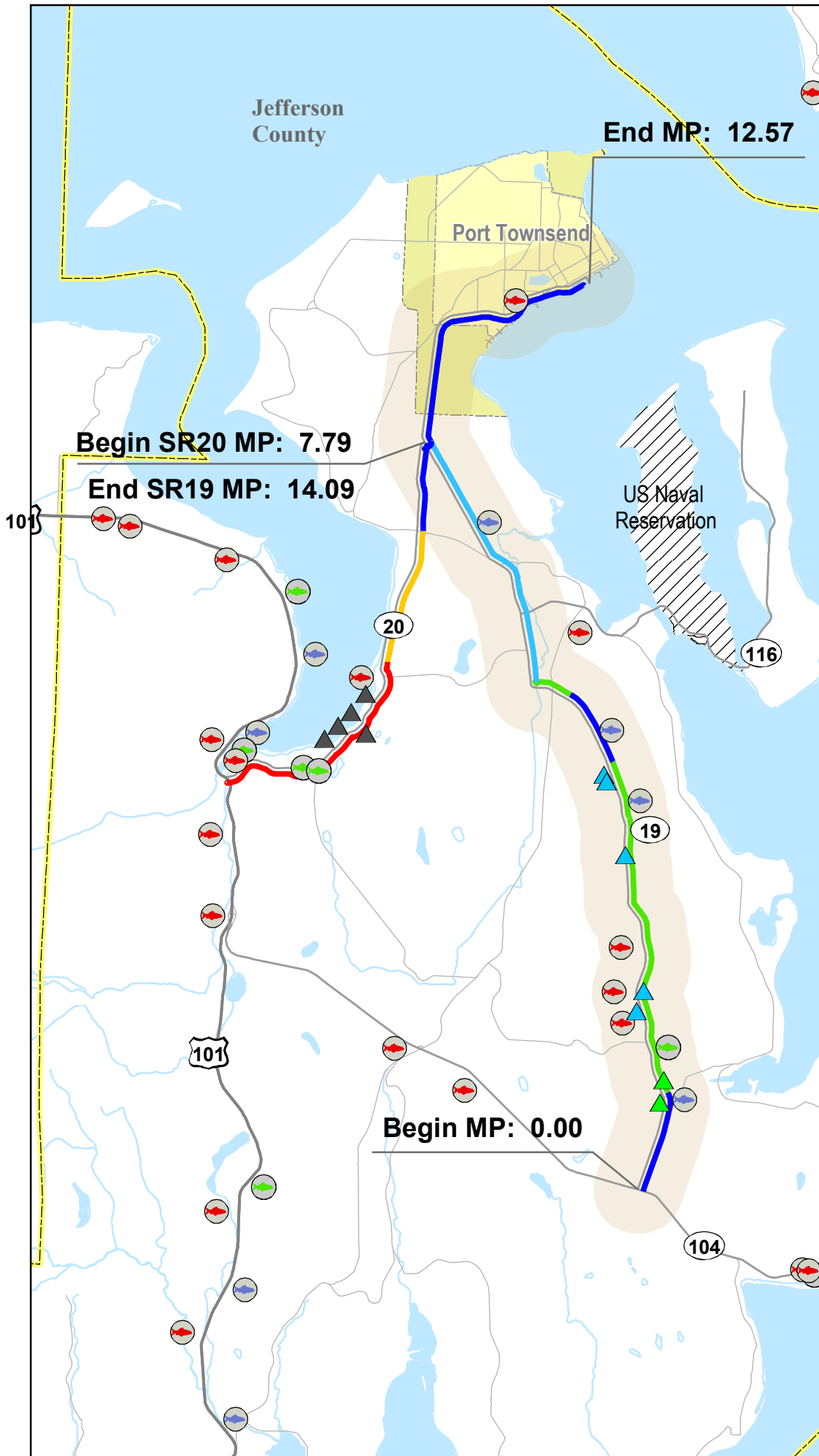
- Require Repair
- Little Gain
- Undetermined

Paving Due

- Past Due
- 2005 - 2007
- 2008 - 2009
- 2010 - 2011
- 2012 - 2026

Other Features

- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
- Urban Area
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TIERED PROPOSED SOLUTIONS

Minimum Fix

Description:

2003 Bottleneck and Chokepoint Conceptual Solutions (2 individual solutions): 1. Install signal system with a new southbound left turn lane, a new northbound right turn lane, reconfigure the westbound channelization by installing a right turn lane and consider a northbound acceleration lane at the SR 19/SR 116 Intersection. 2. Widen SR 20 from a 2 lane facility to a 4 lane divided facility from SR 19 to Old Fort Townsend Road (0.47 mile). Jefferson County and Port Townsend representatives prefer intersection improvements (channelization) between SR 19 and the Ferry Terminal as a near term solution. The mainline traffic volumes are causing side street left and right turn movements to have less "gaps" in traffic. Mainline left turn storage lanes could be exceeding capacity too.

Delay Reduction: 7% daily for SR 19/SR 116 I/S and 75% for SR 20 widening

Collision Reduction: 30%

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: \$4.4 M in 2005 dollars for benefits of \$11.5 M or a B/C ratio of 3.29

Cost Estimate Explanation:

The estimated total cost is a roll up of two individual solutions. The B/C ratio is benefits to a present value cost and does factor in residual value for items such as structures, right-of-way, etc. The cost is based upon Access cost estimating tool developed and maintained by Murshed Delwar, WSDOT. Benefits are based upon WSDOT Mobility Project Prioritization Process, Benefit/Cost Software User's Guide, May 2000. Prepared by Dowling Associates, Inc. in conjunction with Kittelson & Associates.

Minimum Fix Benefits:

These projects will increase peak hour speeds above 70% of the posted speed based on year 2003 traffic volumes. By signalizing an intersection they also address approach delays at a stop controlled SR to SR intersection (SR 19/SR 116) and existing SR 116 left turn LOS F conditions in 2003.

Moderate Fix

Description:

SR 19 MP 0.09 to 0.09 Beaver Valley/SR 104 Vicinity - Improve existing 40 - stall park and ride lot. SR 19 MP 4.3 to MP 4.3 Unnamed tributary to Chimacum - Improve structure to remove fish passage barrier. SR 19 MP 9.09 to 9.09 Chimacum/Center Road Vicinity - New 20 stall park and ride lot near Chimacum/Center Road. SR 19 MP 9.09 to 14.16 Center Road to SR 20 - Widen from 2/3 lanes to 4 lanes. SR 20 MP 7.79 to 8.25 Old Fort Townsend Road to Hendricks St. - Widen to 4 lanes. SR 20 MP 8.25 to 10.82 Old Fort Townsend Road to Hendricks St. - Parallel road extensions and access management. SR 20 MP 9.2 to 10.77 Old CMSTP&P Railroad Bridge to Sherman St. - Widen shoulder to 5' min (Bike touring route and nearby schools). SR 20 MP 10.82 to 12.51 Hendricks Street to Ferry Landing - Westbound Truck climbing (Eastbound ferry holding lane funded by a Port Townsend Ferry Terminal Project #9000126).

Delay Reduction: None identified.

Collisions Reduction: None identified.

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: None identified.

Cost Estimate Explanation:

The highway system plan conceptual solutions have not yet been through our benefit/cost process.

Moderate Fix Benefits:

These projects will reduce congestion delay in areas that have a congestion index ratio exceeding 10 urban and 6 rural over a 20 year period in the HSP.

Maximum Fix

Description:

SR 19 MP 0.00 to 2.33 SR 104 to Old Beaver Valley Road - Widen from 2 to 4 lanes. SR 19 MP 2.33 to 9.09 Old Beaver Valley to Chimacum/Center Roads - Widen from 2 lanes to 4 lanes. An interchange at SR 19 and SR 104.

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Delays Reduction: None identified.
Collisions Reduction: None identified.
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: None identified.

Cost Estimate Explanation:

The conceptual solutions in the maximum fix have not yet been through our benefit/cost process.

Maximum Fix Benefits:

None identified.

Off-System Solutions:

Parallel routes on local streets within the City of Port Townsend along with separated trails per the 1991 Gateway Plan.

Special Studies/Reports:

Port Townsend Gateway Development Plan, dated August 1991.

Required Studies

A SR 19 and SR 20 Corridor Analysis is proposed for \$850,000.

Start/Completion Date of Study:

No funding at this time (Begin 2007 - 2011).

Expected Results

Outline a vision for the future development of SR 19 and SR 20, by recommending improvement strategies for the existing and future deficiencies of the transportation system along these two state routes.

Funded Projects within Corridor Limits

Project No	Title
301907A	SR 19/Oak Bay Road to Embury Road - Paving
900012G	Port Townsend Ferry Terminal Improvements

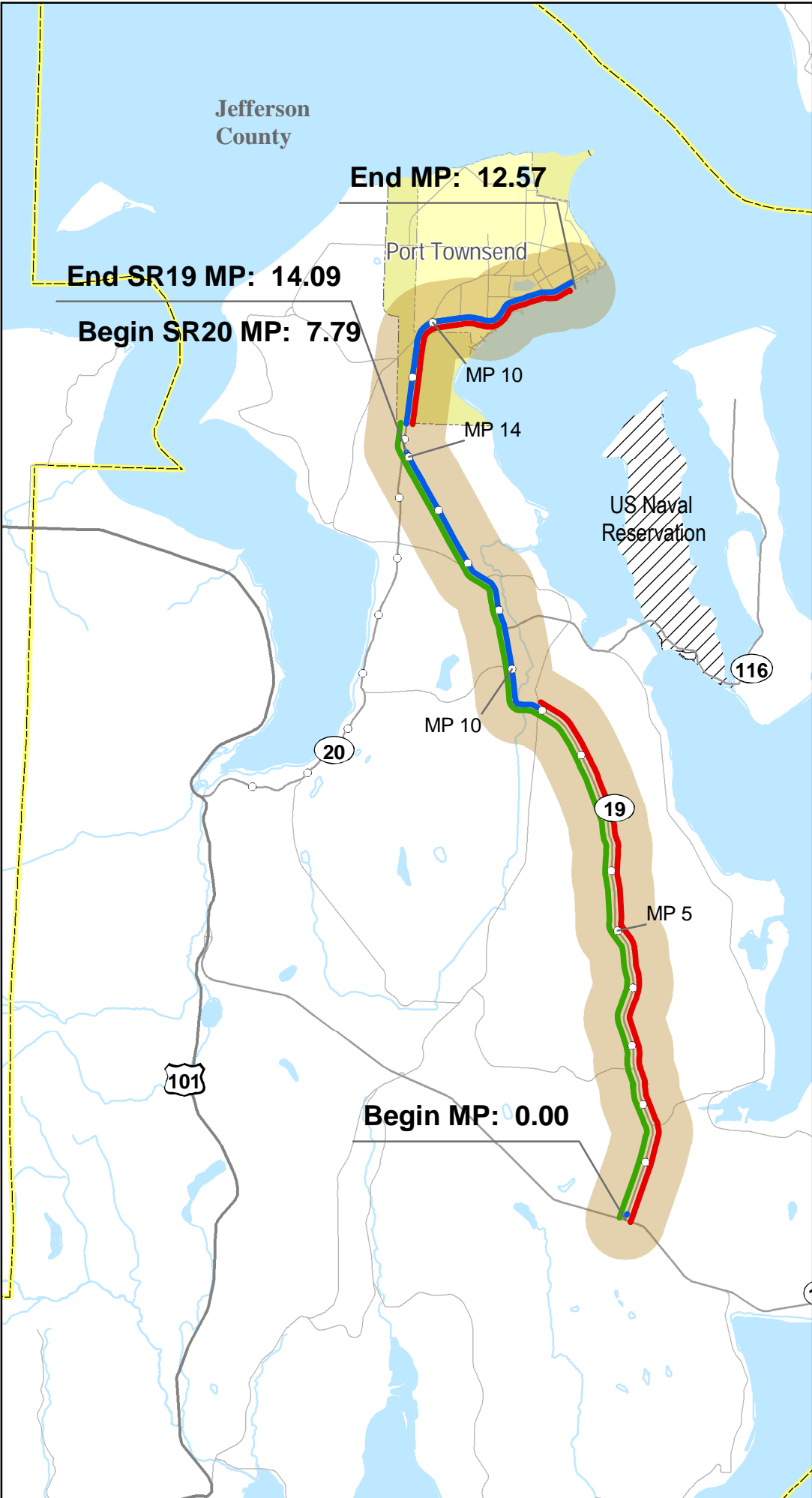
Additional Comments:

SR 19 and SR 20 should be studied as a Route Development Plan (RDP) or as a Corridor Management Plan (CMP).

Data Sources and Contacts used:

Washington State Highway System Plan: 2003-2022, dated February 2002
GIS Environmental and Transportation Workbench
Capital Improvement and Preservation Program
Transportation Data Office - Roadway and Travel Analysis Sections
Bridge Structures & Preservation Data
Olympic Region Planning Library
Washington State Freight & Goods Transportation System 2005 Update
Measures, Markers and Mileposts, Basic Pavement Types and Ratings Summary (The Gray Notebook)

HSP Congested Corridor Analysis Solutions



- HSP Corridor Location
- Solutions**
- Tier 1
- Tier 2
- Tier 3
- U.S. Interstate
- U.S. Highway
- State Route
- Milepost Marker
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
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