

**US 2, I-5 (EVERETT) TO GOLDBAR,
ARM 0.00 TO ARM 27.87, SR MP 0.00 TO SR MP 27.95**

CHARACTERISTICS

Segment Description:

This corridor extends from I-5 Everett to Goldbar, approximately 28 miles.

County/Counties: Snohomish

Cities/Towns Included: This corridor segment of US 2 passes through Everett, Monroe, Sultan and Goldbar.

Number of lanes in the corridor: 1 to 5

Lane width: 9 to 28 feet.

Speed limit: 30 to 60 mph.

Median width: 0 to 750 feet.

Shoulder width: 3 to 20 feet.

Highway Characteristics:

This entire segment of US 2 Corridor has been designated as both HSS and NHS. The functional class Urban-Principal Arterial has been assigned to segments in the vicinity of ARM 0.00 - 8.65. The functional class Rural-Principal Arterial has been assigned to segments in the vicinity of ARM 8.65 - 12.08 and 16.57 - 28.80. The functional class Urban-Other-Principal Arterial has been assigned to segments in the vicinity of ARM 1208 - 16.57.

US 2 has been designated a Scenic Byway in the vicinity of MP 15.37 to 104.72. The US 2 corridor segment between I-5 - SR 529 is designated T-3 with annual tonnage of 616,000 and between I-5 - SR 204 is designated T-1 with annual tonnage of 14,160,097 and between SR 204 - Index (Galene Rd.) is designated T-2 with annual tonnage of 6,262,200.

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

There are two way left turn lanes in the vicinity of ARM 14.52 to 15.18, 21.70 to 24.30 and 25.69 to 28.69. Chain up areas are in the vicinity of ARM 28.92 to 29.10 and 33.12 to 33.24.

Access Control Type(s):

There is Full Access control in the vicinity of ARM 0.00 to 9.15 and 13.67 to 14.35 and 15.45 to 15.72. There is Managed Class 2 control in the vicinity of ARM 9.15 to 13.67 and 15.72 to 25.28. There is Managed Class 3 control in the vicinity of ARM 25.28 to 28.80. There is Managed Class 4 in the vicinity of 14.35 and 15.45.

Terrain Characteristics:

The terrain is considered Level in the vicinity of ARM 0.00 to 3.79 and Rolling in the vicinity of ARM 3.79 to 31.49.

Natural Features:

US 2 delivers breathtaking views of the Cascade Mountains and scenic adventures through lush, forested trails and the bountiful experiences nature has to offer to the users of this highway.

Adjacent Land Description:

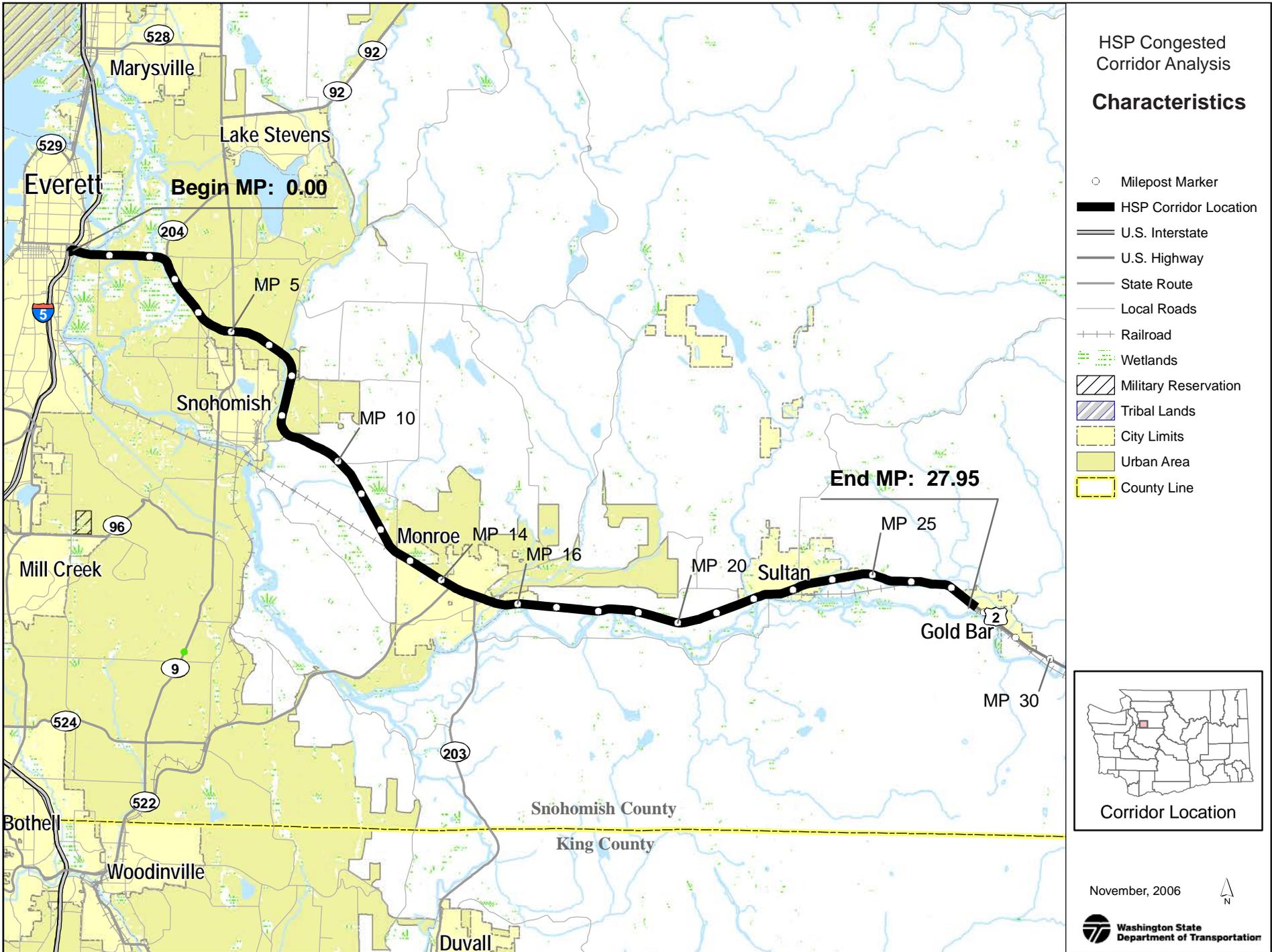
The route traverses urban, semiurban, open, rural and forested areas. The US 2 corridor is within the usual and accustomed areas of the Tulalip, Snoqualmie, Samish, Yakima Tribes.

Environmental Issues:

As needed, upgrade culverts and ditches to help minimize erosion during large storms. Also, build storm water treatment facilities.

Major Economic Issues:

US 2 serves freight, commuter, neighborhood, business, and recreational interests. This highway is very popular for bicyclists, hikers, rafters, rock climbers, fishers, and skiers. Weekend recreational traffic is almost three times weekday commuter traffic.



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ASSETS

Pavement:

There are approximately 72 lane miles of Hot Mix Asphalt on this segment of US 2.

Signal:

There are 8 traffic signals located along this corridor as US-2 intersects cross roads at SE Fryelands/Roosevelt, 179th Ave SE, SR 522, Kelsey Street, SR 203/Lewis Street, Main Street, Old Owen/Fern Bluff Road, and 311th Ave. SE/5th Street.

Structures:

There are thirteen structures in this corridor that consist of: one Concrete Box Girder, two Concrete Slab, two Concrete T-Beam, three Pre-Tensioned Concrete Beam, one Post-Tensioned Box Girder Pre-Tensioned Concrete Beam, one Post-Tensioned Concrete T-Beam, two Steel Truss Concrete T-Beam and one Steel Beam Concrete Box Girder Concrete Slab.

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

Features Crossed:

This segment of the US 2 corridor crosses Ebey Slough, Pilchuck River, French Creek, Sultan River, Sultan Mill Pond and the Wallace River.

ITS Facilities:

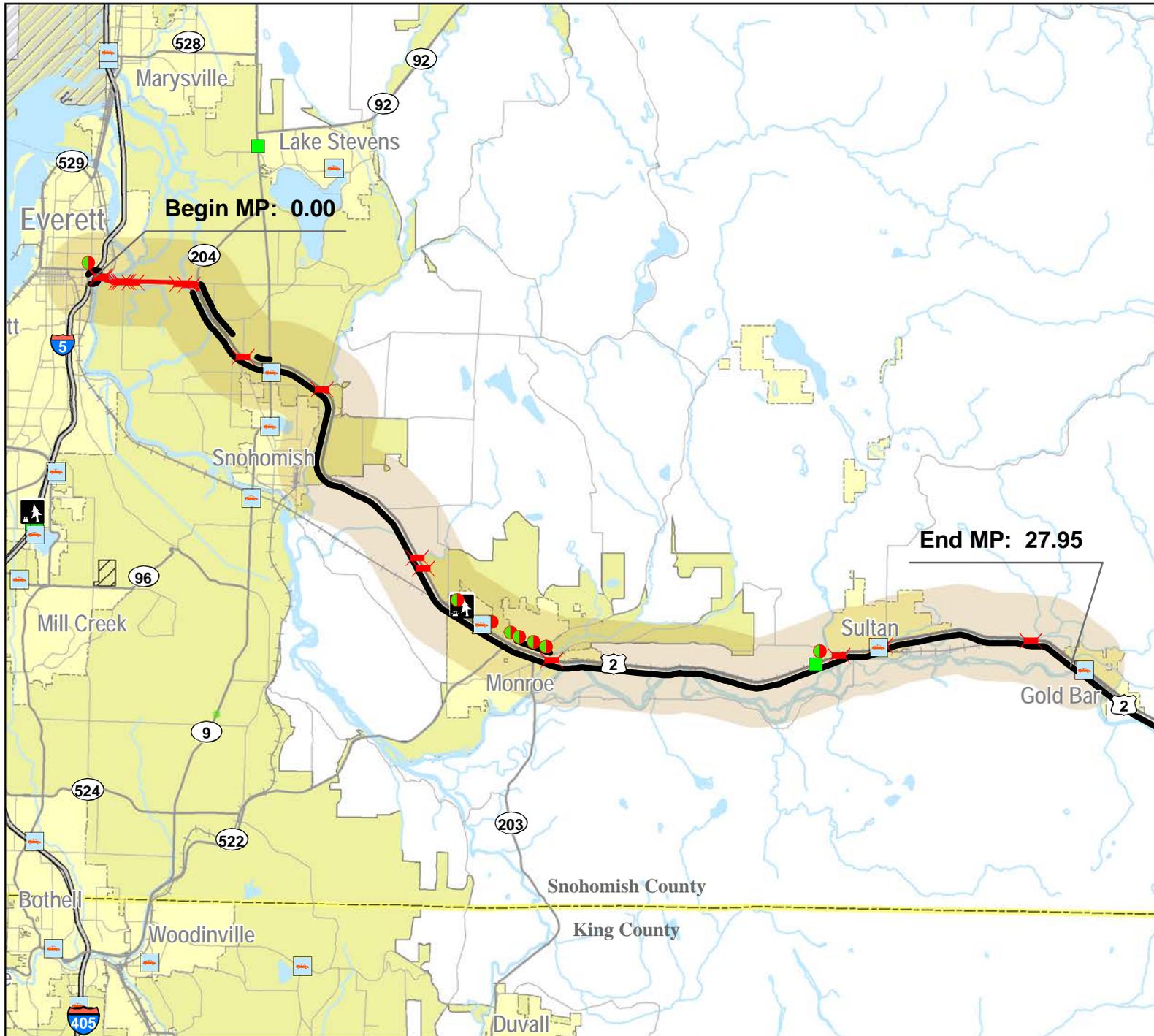
US 2 has an extensive ITS system in place, that includes cameras, variable message systems, highway advisory radio and related conduit and fiber.

Railroad Crossings:

There is a railroad crossing in the vicinity of ARM 6.50.

Asset Other:

There are transit, park and ride facilities in the general vicinity of this corridor.



HSP Congested Corridor Analysis Assets

- Corridor Location
- Assets**
- Signalized Intersection
- At Grade Railroad Crossings
- Bridge
- Weigh Stations
- Rest Area Sites
- Ferry Terminal
- Park and Ride
- Corridor Pavement Type**
- HMA
- BST
- PCCP
- Other Features**
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Ferry Route
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
- Urban Area
- Airports
- County Line

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USAGE

General Origin and Destination Travel Characteristics:

Users of this corridor include:

Local residents traveling to work and school.

Long-distance commuters traveling between Seattle and the outer suburbs.

Customers of businesses along the route.

People traveling to recreational facilities

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 12,300 to 69,500.

Significant Seasonal Average Annual Daily Traffic Changes:

This corridor is one of many corridors in the Puget Sound region that experience consistent high use throughout the year.

General Description of Major Average Annual Daily Traffic Locations:

The annual average daily traffic (AADT) in the vicinity of SR 204 is 67, 900 and decreases to 29, 400 in the vicinity of Old SR 2 and further decreases to 19,600 in the vicinity of Campbell Rd. and increases to 25, 326 in the vicinity of 100th St. SE and decreases to 19,900 in the vicinity of 179th Ave SE and increases to 25, 200 in the vicinity of SR 522 and further increases to 36,700 in the vicinity of SR 203 and again decreases to 28,700 in the vicinity of Ann St./Woods Creek and further decreases to 16,300 in the vicinity of Sultan Basin Rd./Cemetery Rd.

Freight:

Freight Classification: T1, T2 and T3

Yearly Tonnage: 14M

Truck Percentage of Annual Average Daily Traffic: 8.5% to 13.7%

Additional Usage Comments:

There are no additional comments.

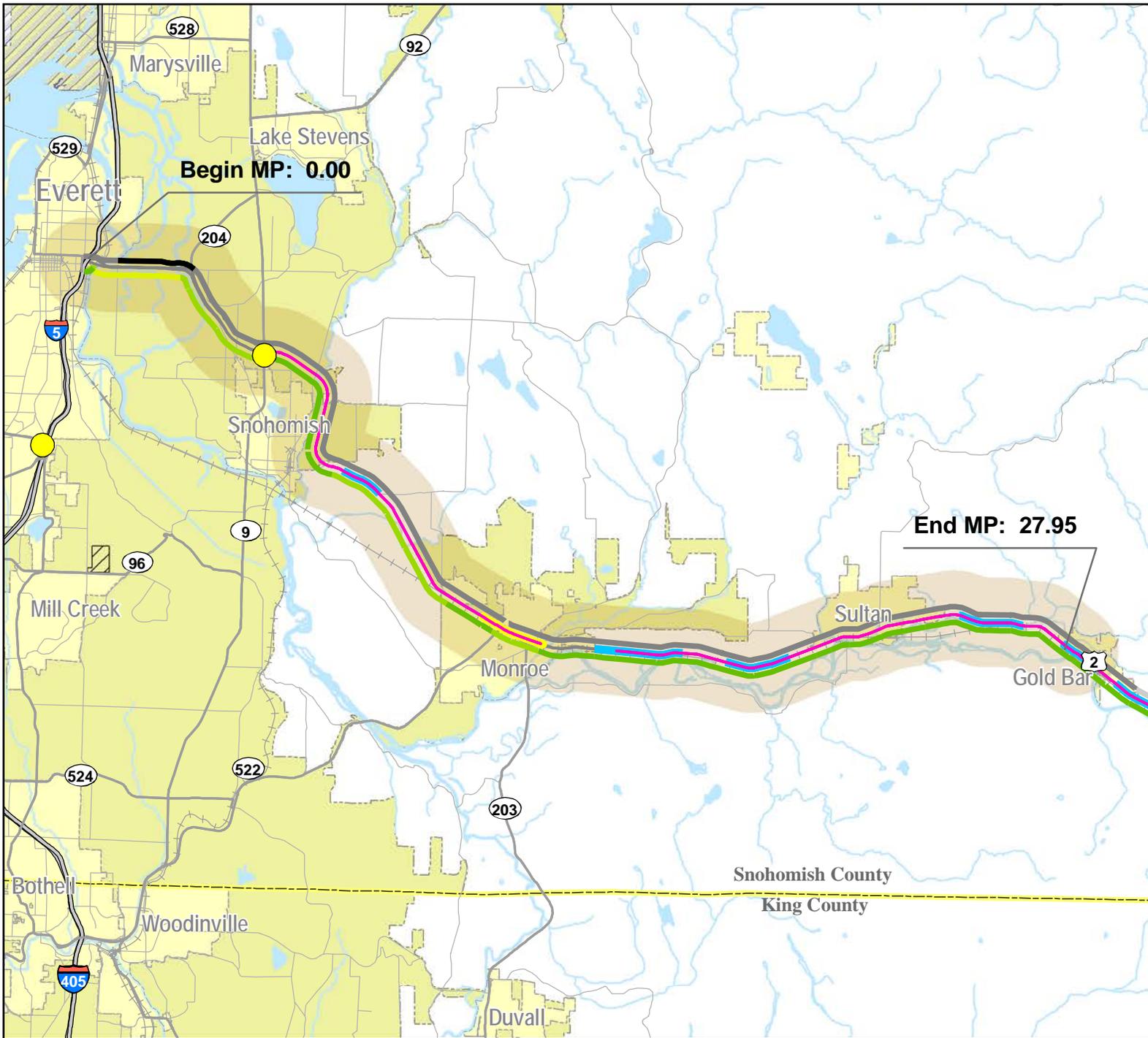
Average Annual Societal Cost of All Collisions: Approximately \$12M

Collisions:

Severe No of Collisions: 16

Less Severe No of Collisions: 937

List Data Years: 2002 to 2004



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

Military Reservation

City Limits

Urban Area

County Line

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NEEDS AND STRATEGIES

Preservation

Pavement Condition and Needs:

Preserve 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 a 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:

The pavement in the corridor is 87% flexible and 13% rigid. Of the flexible pavement 1% is composite. It would seem that for future paving hot-mix asphalt (HMA) will be the pavement of choice.

Pavements will be programmed targeting the lowest life cycle cost per the Washington State Pavement Management System "due" date.

Structures Condition and Needs:

This corridor has a total of 39 structures. Preservation work is needed on 12 bridge structures that include two steel beam bridges, two concrete box bridges, one steel thru truss bridge, one sign bridge, one concrete T-beam bridge, two concrete slab bridges, and three concrete multiple web girder bridges. Rehabilitation work is needed for replacement of one sign bridge, rehabilitation of five bridges, and seismic retrofit of six bridges. (this includes ramps and other locally owned structures) (This may include ramps and locally owned structures if any exist.)

Structures Management Strategies:

Preserve transportation infrastructure to achieve the lowest life cycle cost and prevent failure. Rehabilitation of five bridges and seismic retrofit of two bridges have been planned for work within next 20 years. Other bridges are planned for preservation work beyond 20 years.

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. There are no identified rest area needs for this corridor. There are 8 unstable slopes identified along this corridor. Of the 8 unstable slopes 3 are inactive, 2 have been mitigated, 1 has a conceptual design solution, and 2 are active and being monitored. There is one weigh station identified on this corridor. There are no weigh station improvements planned for this corridor. There are three locations along SR 2 that have been identified as a major drainage issues. These locations are located along SR 2 in the vicinity of MP 5.50, MP 25.70 and 27.90.

Additional Management Strategies:

Replace or rehabilitate electrical, electronic, and mechanical systems when they reach the end of their service life. Replace or rehabilitate drainage features that have structurally failed or fails to protect the roadway prism event of 10 years or less. Refurbish deficient safety rest area buildings, utilities and sites. Upgrade existing traffic control and monitoring systems as technology changes to avoid obsolescence and capture the benefits of new technology. Stabilize 100% of unstable slopes.

Improvement

Mobility Condition and Needs:

This is high priority corridor for Snohomish County. It is a true bottleneck on the US 2 Trestle between the SR 204 interchange and I-5. There is also a bottleneck in Monroe where we have been unsuccessfully trying to fund the construction of a northern bypass for many years. Traffic congestion is increasing, particularly on weekends due to recreational traffic.

Mobility Management Strategies:

Determine the most cost-effective improvements for this corridor. Near term strategies include investments that address system chokepoints. A combination of added general purpose lanes, high occupancy vehicle lanes, managed lanes, added Bus service will be developed and refined over the next 20 to 50 years improvement management strategies. The Bickford Avenue to westbound US 2 is an example of the type of improvements along US 2 that will provide safe access needs while improving the mobility needs of US 2 and SR 9. Representatives from the City of Snohomish shared that they have annexed and rezoned an area south of US 2 and west of SR 9 along Bickford Avenue. It would desirable to have the 20 year plan include an interchange

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at SR 9 and Bickford Avenue (this would involve closing the existing Ridge Avenue intersection) and an northbound to westbound flyover ramp from

Safety Condition and Needs:

There are four High Accident Locations identified in the vicinity of MP 13.78 to 15.30. In addition, there are five High Accident Corridors identified in the vicinity of MP 9.02 to 24.08.

Safety Management Strategies:

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).

Safety improvements that will be strategically considered include:

Eliminate high accident locations on state highways through hazard mitigation.

Eliminate Pedestrian Accident Locations on state highway through hazard mitigation.

Eliminate high accident corridors using standards based highway safety solutions.

Construct and improve intersection channelization and/or signals in compliance with federal guidelines to improve safety.

Improve the geometrics of the Interstate system per Federal Highways Administration (FHWA)/WSDOT stewardship agreement.

Eliminate major at-grade intersections on multi-lane, divided highways with speeds of 45 MPH or greater.

Improve roadways where geometrics, traffic volumes, and speed limits indicated a high accident potential by instituting standards based highway safety solutions.

Proactively address pedestrian safety along state highway segments that exhibit high pedestrian use and the potential for future accidents.

Address highway safety through statewide low-cost, high benefit and short-term projects.

Environmental Condition and Needs:

Reduce impacts by addressing noise reduction, air quality, storm water, wetland mitigation, chronic environmental deficiencies, and fish barriers.

Environmental Management Strategies:

Environmental improvements that will be strategically considered include:

Strategically prioritize and retrofit existing state transportation facilities for noise reduction.

Implement all transportation control measures as identified by the Washington State Implementation Plan for Air Quality.

Strategically prioritize repair, replace, and retrofit existing state transportation facilities for storm water runoff quality and quantity to reduce environmental impacts.

Strategically prioritize and re-mediate wetland mitigation sites during the later stages of the monitoring phase to ensure they function as conditioned by the issuance of permits.

Develop criteria, strategically prioritize and repair existing chronic environmental deficiencies of transportation facilities.

Strategically prioritize, repair, replace and retrofit existing barriers to fish passage on the state highway system within 20 years as appropriate to reduce existing barriers to fish passage statewide.

Restrictions:

There are weight restrictions on SR 2 at mileposts .75 to 2.45, and 22.04 to 22.15.

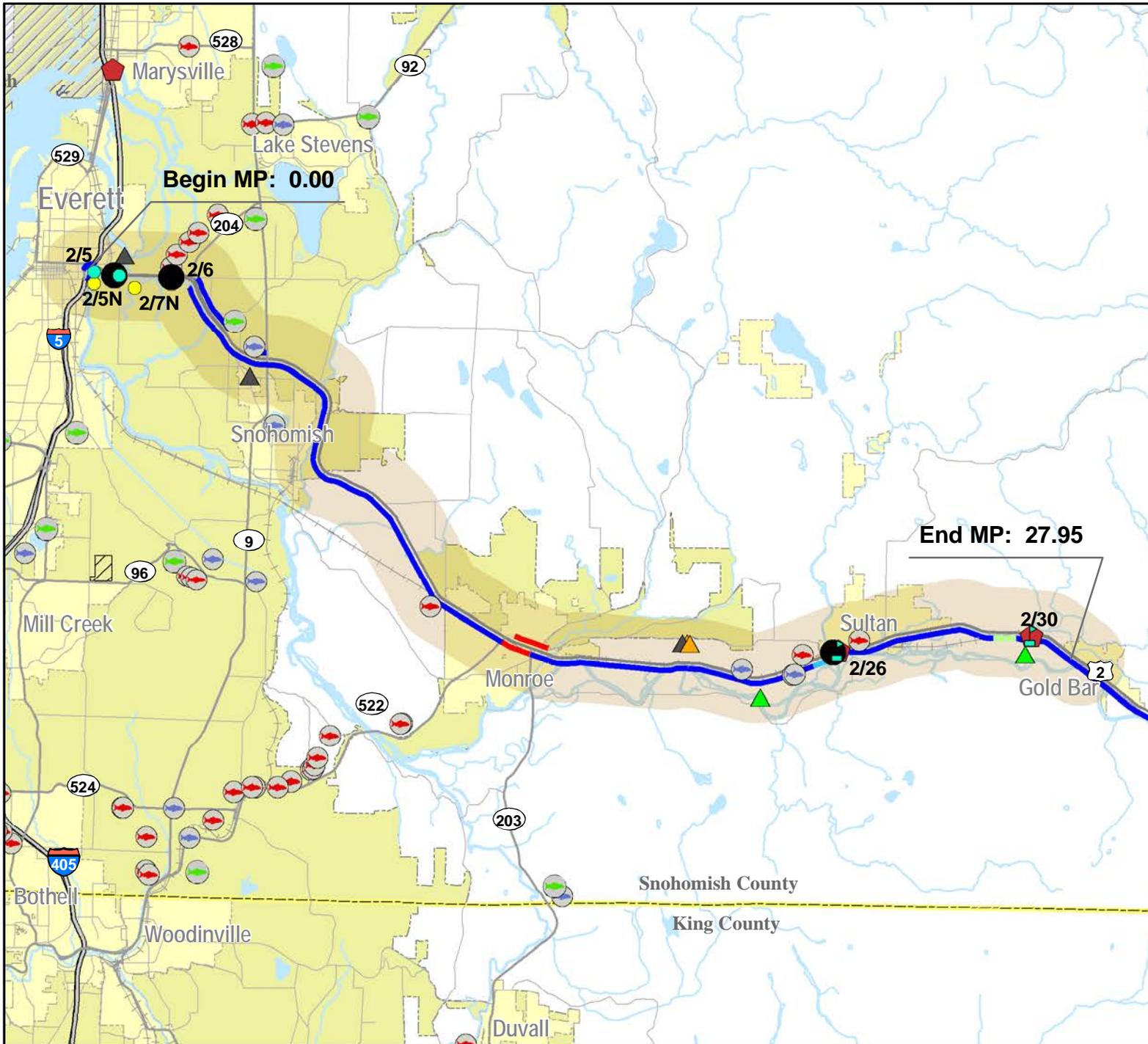
50-Year Configuration:

The future configuration of this corridor is reflected in the following proposed future corridor solutions:

- SR 2 (BARM 0.00 to EARM 2.71): Add a westbound lane on SR 2 between SR 204 and I-5.

- SR 2 (BARM 8.80 to EARM 16.00): Campbell Rd. (92nd St. SE) to Monroe Phase 2 - Construct new 4 lane, limited access bypass with new interchanges @ Westwick Rd., SR 522, and east Monroe. 4 lanes to SR 522 with additional 2 lanes added around Monroe (this is in addition to the two lanes found in the constrained plan).

- SR 2 (BARM 24.22 to EARM 31.27): City of Sultan (WCL) to Fir Rd - Widen to 4 lanes, median divided, limited access highway (MP 24.44 to MP 25.56, MP 26.33 to MP 27.48, and MP 28.72 to MP 31.27). Within cities provide 4 lane undivided section.



HSP Congested Corridor Analysis Needs

- HSP Corridor Location
- Bridge Replacement Priority**
- Replacement
- Seismic
- Special
- Scour
- Painting
- Miscellaneous
- Bridge Deck
- Other Bridge Issues**
- 2 Lane BW Narrow Bridge
- Restricted Bridge
- Posted Bridge
- Vert. Clearance 15.5' Or Less
- Fish Barriers**
- Require Repair
- Little Gain
- Undetermined
- Unstable Slope**
- Debris Flow
- Erosion
- Landslide
- Rockfall
- Settlement
- Paving Due**
- Past Due
- 2005 - 2007
- 2008 - 2009
- 2010 - 2011
- 2012 - 2026
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
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TIERED PROPOSED SOLUTIONS

Minimum Fix

Description:

US 2 (BARM 0.00 to EARM 28.87) ITS improvements - CCTV, DATA Stations, Highway Advisory Radio System (HARS), Ramp Meter, Fiber (\$8M Solution Cost)(5-20 % Collision Reduction + 2-10% Reduction in Daily Vehicle hours of Delay = \$10M Benefit).

US 2 (BARM 0.00 to EARM 2.71): US 2 Trestle from Interstate 5 - Widen the US 2 Trestle to provide one additional eastbound lane from I-5 to SR 204. Make modifications at the I-5 and SR 204 interchanges (this is the RTID proposal) (\$300-\$370M Solution Cost)(10-30 % Collision Reduction + 50-60% Reduction in Daily Vehicle hours of Delay = \$378M Benefit)

US 2 - (BARM 21.37 to EARM 24.17)Intersection improvements at Old Owen Road, Main Street, and 339th Avenue (See Bt&Ch)(\$3-\$5M Solution Cost)(45-85 % Collision Reduction +66% Reduction in Daily Vehicle hours of Delay = \$9M Benefit).

Delay Reduction: 70 to 80%

Collision Reduction: 5 to 90%

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: \$300 M to \$400 M

Cost Estimate Explanation:

The estimated Cost is the total of the costs for the solutions described for minimum fix.

Minimum Fix Benefits:

With less stop and go traffic, vehicle emissions will be reduced and access to recreational facilities along US 2 will be enhanced.

Moderate Fix

Description:

US 2 (BARM 14.25 to EARM 16.12): Construct four-lane bypass of Monroe on new alignment between SR 522 I/C and ECL of Monroe.(\$68M - \$91M Solution Cost) (10-30 % Collision Reduction + 80-90% Reduction in Daily Vehicle hours of Delay = \$90 -123M Benefit).

US 2 (BARM 21.42 to EARM 24.17): Widen to five lanes thru Sultan (\$45M - \$60M Solution Cost)(55-65 % Collision Reduction + 75-80% Reduction in Daily Vehicle hours of Delay = \$34M Benefit).

Delay Reduction: 75 to 90%

Collisions Reduction: 10 to 65%

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: \$113 M to \$151 M

Cost Estimate Explanation:

The estimated Cost is the total of the costs for the solutions described for moderate fix.

Moderate Fix Benefits:

The preliminary analysis results indicate the proposed solutions will provide reductions in collisions and travel delay.

Maximum Fix

Description:

US 2 (BARM 2.71 to EARM 5.02): Widen to 4 lanes from SR 204 to SR 9, with interchanges at Bickford Ave. (Old US 2) and SR 9, a flyover ramp from NB Bickford Avenue to westbound US 2, and westbound HOV lane @ SR 204 I/C (\$48M - \$64M Solution Cost) (10-30 % Collision Reduction + 75-90% Reduction in Daily Vehicle hours of Delay = \$96M Benefit).

US 2 (BARM 5.02 to EARM 8.80): Widen to 4 lanes from MP 5.02 to Campbell Rd. (92nd St. SE) (\$37M - \$49M Solution Cost)(10-30 % Collision Reduction + 75-82% Reduction in Daily Vehicle hours of Delay = \$46M Benefit)

US 2 (BARM 16.00 to EARM 18.67): Widen to 4 lane from City of Monroe (East city limits) to Fern Bluff Rd, median divided highway including access purchase (\$16M - \$21M Solution Cost)(10-30 % Collision Reduction + 76-82% Reduction in Daily Vehicle hours of Delay = \$37M Benefit)

SR 2 (BARM 18.67 to EARM 24.22): Fern Bluff Rd. to City Sultan (WCL) - Widen to 4 lane, median divided highway to Sultan

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(MP 21.42) including access purchase. (\$47M-\$63M Solution Cost)(10-30 % Collision Reduction + 75-80% Reduction in Daily Vehicle hours of Delay = \$59M Benefit)

Delays Reduction: 75 to 90%

Collisions Reduction: 10 to 30%

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: \$148 M to \$197 M

Cost Estimate Explanation:

The estimated Cost is the total of the costs for the solutions described for maximum fix.

Maximum Fix Benefits:

The preliminary analysis results indicate the proposed solutions will provide reductions in collisions and travel delay.

Off-System Solutions:

None identified.

Special Studies/Reports:

US-2 Route Development Plan.

Required Studies

Study or studies will be identified that focus on the areas listed in the 50 Year Plan.

Start/Completion Date of Study:

None identified.

Expected Results

The study would develop a strategy that would identify incremental phases of construction that would progressively build toward the 50 Year corridor vision.

Funded Projects within Corridor Limits

| Project No | Title |
|-------------------|--|
| 100210D | US 2/I-5 to SR 204 - Paving |
| 100200B | US 2/Snohomish River to SR 204 |
| 100206A | US 2/Snoh R and Ebey Slough Br westbound - Seismic |
| 100200C | US 2/Snohomish River to Junction SR 204 |
| 100205C | US 2/Ebey Is Viaduct and Ebey Slough Br |
| 100210T | US 2/Old US 2 Vic to Jct SR 522 Vic |
| 100212D | US 2/Campbell Hill Road I/C to SR 522 |
| 100223E | US 2/Junction 179th Street SE |
| 100224F | US 2/179th Ave to Woods Creek Bridge |
| 100216A | US 2/Bridge Near SR 522 Under-xing to Woods Cr Br - Paving |
| 100224E | US 2/SR 522 to Woods Creek Bridge |
| 100228A | US 2/Woods Creek Bridge Vicinity |
| 100231B | US 2/Fern Bluff Road Vic to Sultan Startup Road Vic |
| 100232U | US 2/5th Street - Signalization |
| 100232C | US 2/10th St. I/S Vic |
| 100232B | US 2/Sultan Basin Road |
| 100236A | US 2/Wallace River Bridge to Proctor Creek Bridge |

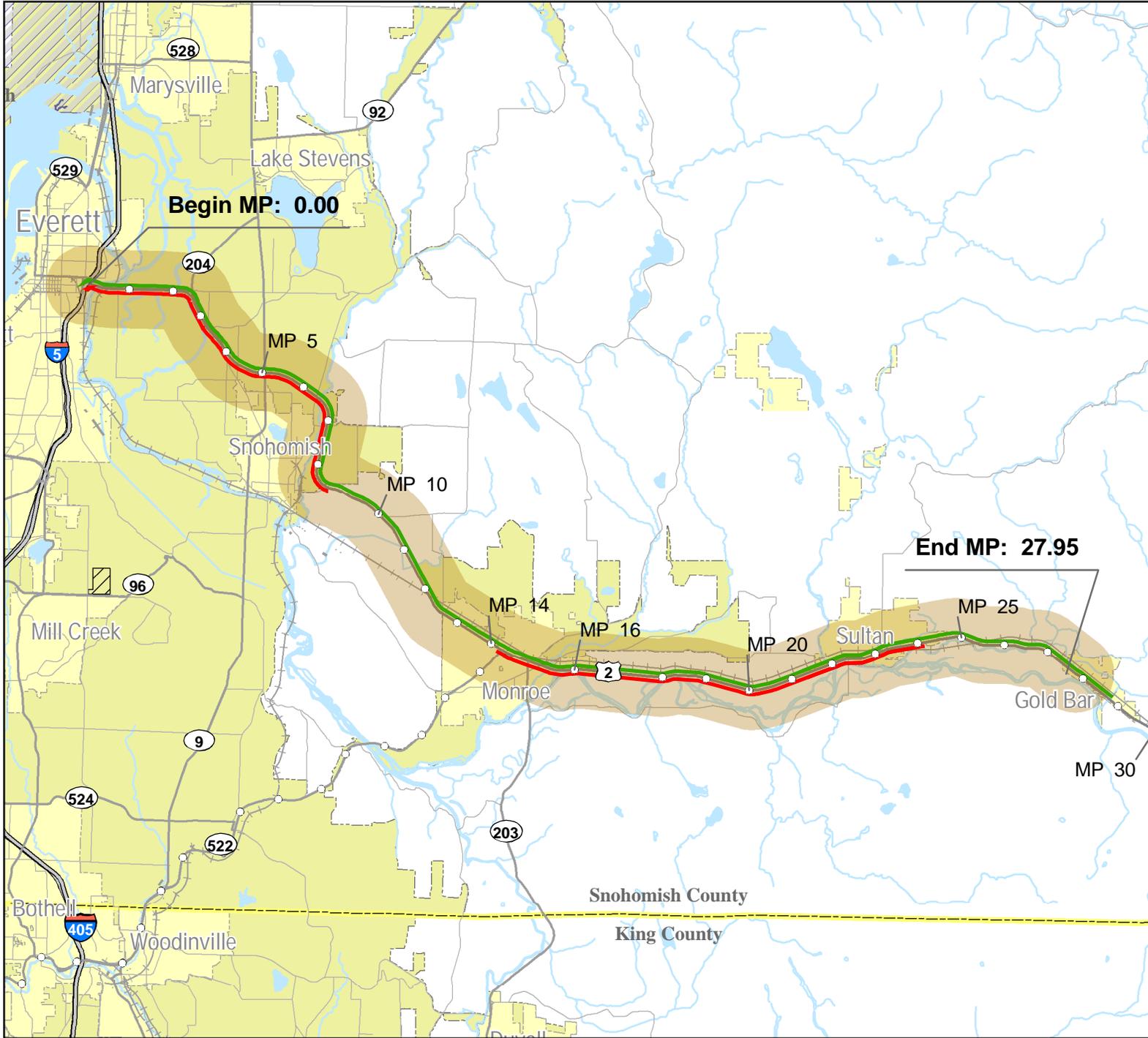
Additional Comments:

None identified.

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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
Studies from WSDOT NW Region Office Library
Bridge Structures and Preservation Data - WSDOT Bridge
Transportation Data Office



HSP Congested Corridor Analysis Solutions

- HSP Corridor Location
- Solutions**
- Tier 1
- Tier 2
- Tier 3
- Other Features**
- U.S. Interstate
- U.S. Highway
- State Route
- Milepost Marker
- Local Roads
- Railroad
- Tribal Lands
- Military Reservation
- City Limits
- Urban Area
- COUNTY

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