

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: US 12 West I/C (Grand Mound) to SR 121 I/C (Maytown) Vicinity

Segment Number: 1

Route: 5 BARM: 87.57 EARM: 95.70 Length: 8.13
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
4	5	0	0	12	12	4	10	40	40	60	70

Corridor Description:

This I-5 segment begins south of the Community of Grand Mound near the US 12 West Interchange and ends near the Community of Maytown immediately north of the SR 121 Interchange. It is in rolling terrain with 1.34 miles of Southbound climbing lane in the Maytown Safety Rest Area Vicinity. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. There are two heavily used safety rest areas within this segment: Scatter Creek and Maytown. The Chehalis Confederated Tribes are a major employer in the vicinity with Lucky Eagle Casino located west of the Rochester Community. There is a major resort, Great Wolf, proposed adjacent to I-5 north of the US 12 West Interchange (Grand Mound). I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~27 storm water outfalls within this segment of I-5. There are also 2 out of 4 fish passage locations that require repair. Wetlands along the north half of the 8.13 mile segment could be an environmental issue, particularly near the Maytown Safety Rest Area.

Previously Identified Bottlenecks/Chokepoints:

An emergent bottleneck/chokepoint not previously identified is the I-5 Southbound off ramp stop controlled intersection terminal at the US 12 West Interchange (Grand Mound).

Known Restrictions:

Roadway realignment south of the US 12 West Interchange (Grand Mound) is complicated by steep terrain along the east side of I-5 and by the existing parallel railroad tracks along the west side (1433-ft horizontal curve not desirable for 70 mph speeds). Prairie Creek Bridges have narrow inside shoulders. SB on ramp at US 12 West has short accel taper and NB off ramp ramp has a sharp radii and short deceleration lane. Scatter Creek Bridges have narrow inside shoulders. Wetlands in the vicinity of the Maytown Safety Rest Area could restrict future improvements. SB off ramp into Maytown Rest Area has sharp radii and short deceleration lane. SR 121 Bridges have narrow shoulders and interchange has sharp ramp radii. Programmed project should address these known restrictions.

Studies:

Existing Study Name	Completion Date
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I-5 Toutle Park Road to Maytown Final Environmental Impact Statement, dated September 2003.

Current/Underway: Study Name	Expected Completion Date
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Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
85.58	98.69	The purpose of this Phase 2 study is to analyze the feasibility of I-5 High Occupancy Vehicle (HOV) lanes within rural Thurston County and consider other issues such as dedicated freight lanes, high speed ground transportation, commuter rail, transportation demand management (TDM), and intelligent transportation systems (ITS). Need: Widening from 4 lane facility to 6 general purpose lanes will not cause future congestion to drop below LOS C/D rural threshold within next 20 years. Assume one year to complete rural phase 2 study.	\$1.5 million
88.4	88.4	Old Highway 99/Ground Mound Highway Corridor Study. This project will evaluate the Old Highway 99 corridor between Tenino and I-5 in light of pending sewer availability and near-term demand for industrial development, and identify any infrastructure investments that may be needed to accommodate this growth. This appears to be a Thurston Policy Board recommendation.	Unknown

HOV/HOT Lanes:

Existing:

NONE

Planned:

The current highway system plan proposes widening from 6 lanes to 8 lanes creating high occupancy vehicle (HOV) lanes.

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I-5: US 12 West I/C (Grand Mound) to SR 121 I/C (Maytown) Vicinity

Segment Number: 1

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300581A	I-5/Grand Mound to Maytown - Widening (from 4 lanes to 6 lanes), MP 87.50 to MP 95.63
30059C	I-5/Prairie Creek to Maytown - Median Crossover, MP 88.24 to MP 95.70
300582C	I-5/Maytown and Scatter Creek - Sewer Hookup, MP 88.50 to MP 93.43

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
300581A	I-5/Grand Mound to Maytown - Widening (from 4 lanes to 6 lanes), MP 87.50 to MP 95.63. Interchange improvements at US 12

Deficiencies:

Current

This section of I-5 is experiencing congestion during peak hours. The project, I-5/Grand Mound to Maytown - Widening will construct one additional lane northbound and southbound from south of the US 12 West (Grand Mound - Rochester) Interchange to the Maytown Intechange, reconstructing the Grand Mound Interchange and realigning I-5 south of the Grand Mound Interchange. When complete, this project will relieve congestion and reduce the risk of collisions.

Future (5-10 years)

If the scope of work for the programmed project is reduced, there may be a need for additional interchange ramp improvements. In particular, the I-5 Southbound off ramp stop controlled intersection may require **improvements**. Implementation of the Intelligent Transportation System (ITS) Master Plan in rural Thurston County would also alleviate future deficiencies.

Future (15-20 years)

Study the feasibility of High Occupancy Vehicle (HOV) lanes and other alternatives as part of the Phase 2 rural Thurston County Study.

Concrete Data

(lane miles calculated exclude bridges, other major gaps, add/drop lanes)	Lane Miles	BARM	EARM	BARM	EARM
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:					
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Hot Mix Asphalt (HMA).

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I-5: US 12 West I/C (Grand Mound) to SR 121 I/C (Maytown) Vicinity

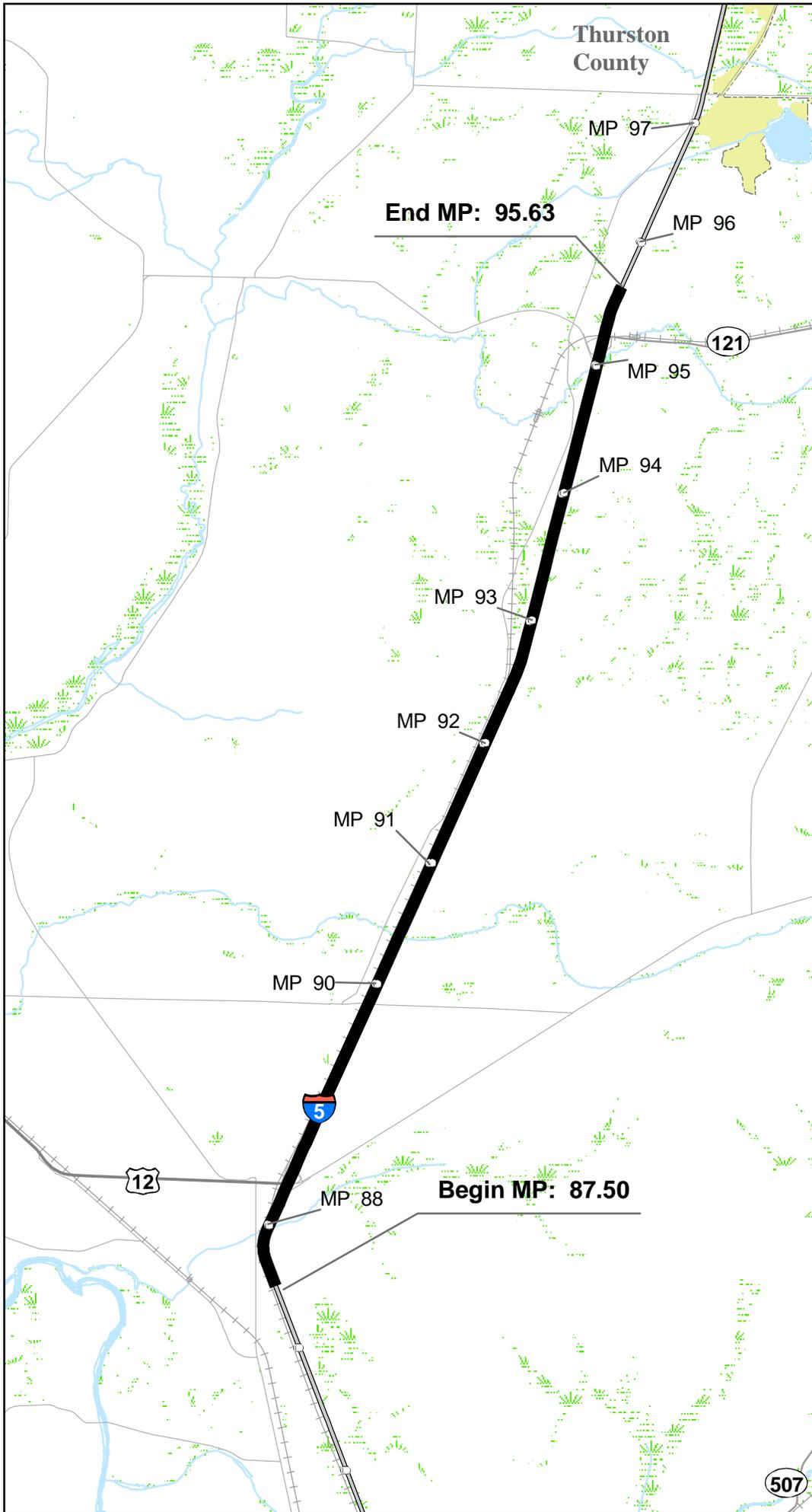
Segment Number: 1

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
88.4	88.4	I-5/US 12 West (Grand Mound) Southbound Off Ramp Stop Controlled Intersection may require <i>improvements</i> due to higher than anticipated growth (e.g. New development like the proposed Great Wolf Resort or other developments triggered by the new effluent treatment facility in Grand Mound). <i>An interim conceptual solution is a Westbound auxiliary lane on US 12 from the stop controlled intersection at I-5 to Old Hwy 99 (Elderberry).</i>			\$3,799,000
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
85.58	98.69	Implement rural elements of the Intelligent Transportation System (ITS) Master Plan. Also consider supplementing this plan with ITS kiosk information booths at the Scatter Creek and Maytown Safety Rest Areas.			
88.4	88.4	Expand the existing 44-stall park and ride lot by 36-stalls in the US 12 West (Grand Mound) Interchange Vicinity (Transportation Demand Management solution).			
		Safety Rest Area Improvements at Maytown and/or Scatter Creek (increase number of freight stalls and/or provide recreational vehicle dump stations).			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
87.57	95.7	Consider additional High Occupancy Vehicle lanes that revert			

Future Corridor Vision:

Near-term to mid-term is three general purpose lanes in each direction (creating minimum 6-lane facility) into Lewis County. Long-term vision is widening from 6 lanes to 8 lanes creating High Occupancy Vehicle (HOV) lanes that could be general purpose during off peak period. Other options like auxiliary lanes between interchanges, dedicated freight lanes (commerce corridor), improving local frontage roads, etc. would be studied as part of a Phase 2 feasibility study for rural Thurston County. There may be a need to expand one or both of the safety rest areas (Maytown and/or Scatter Creek) to accommodate freight trucks and vehicles.

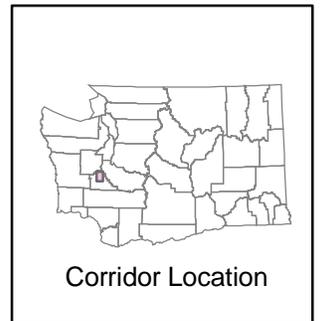


HSP Corridor Series Interstate

Characteristics

Other Features

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

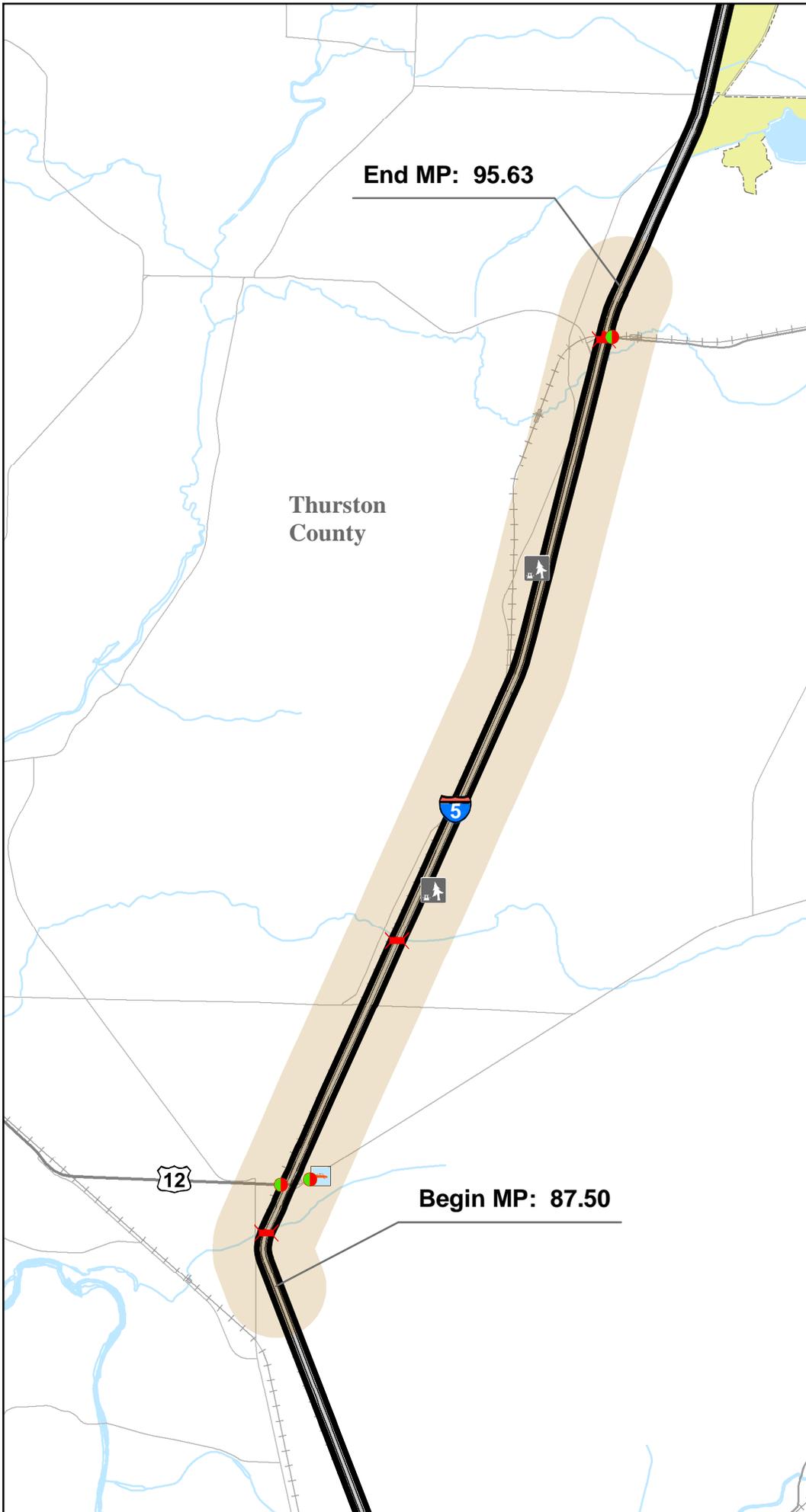


November, 2006



507

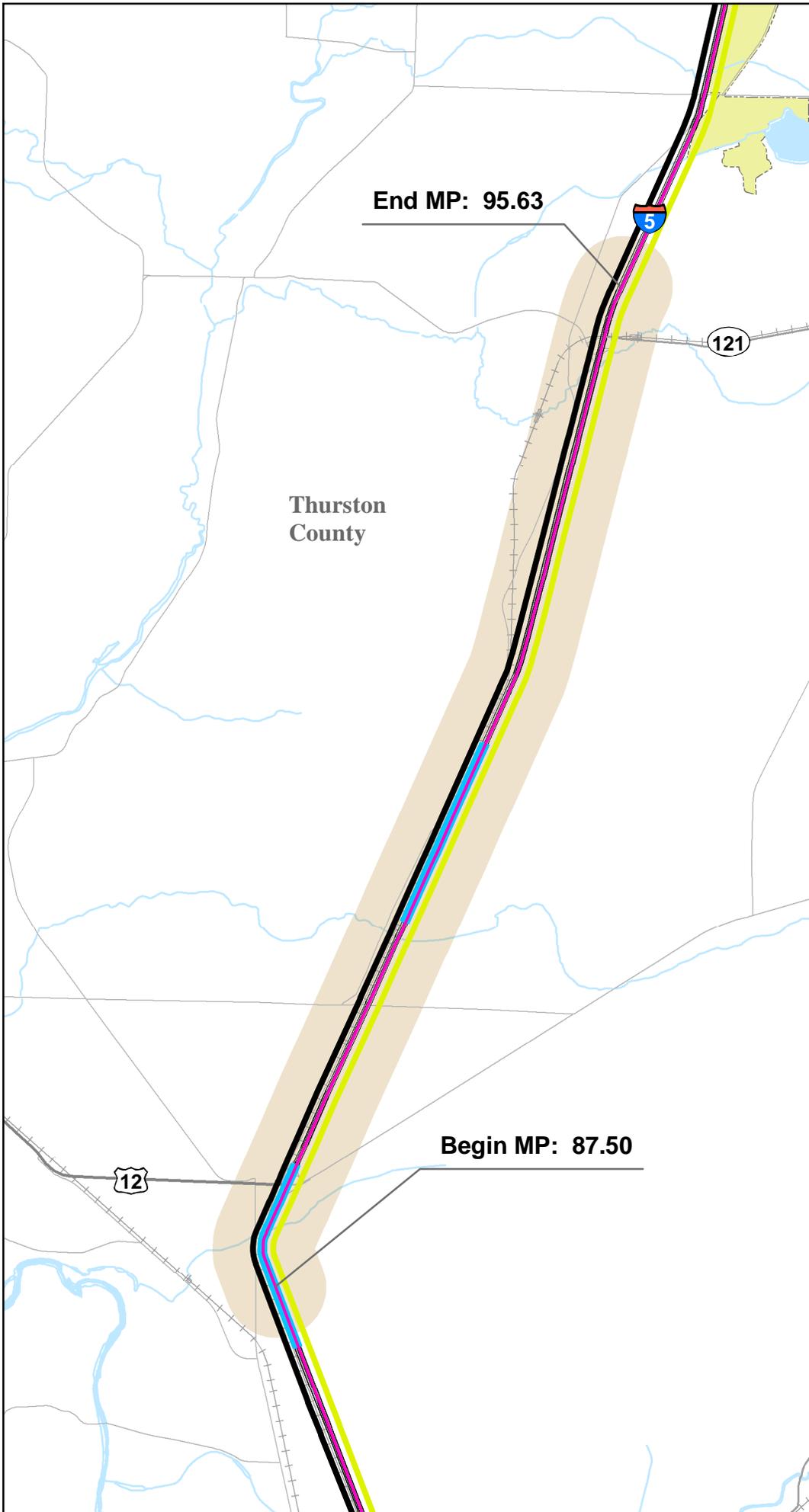
HSP Corridor Series Interstate Assets



- HSP Corridor Location**
- 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

November, 2006





**HSP Corridor Series
Interstate
Usage**

HSP Corridor Location

Safety Analysis Areas

- HAC 07-09
- HAL Corridor 07-09
- HAL Spot 07-09

Freight Classification

- T-1
- T-2
- T-3

Traffic Sections AADT

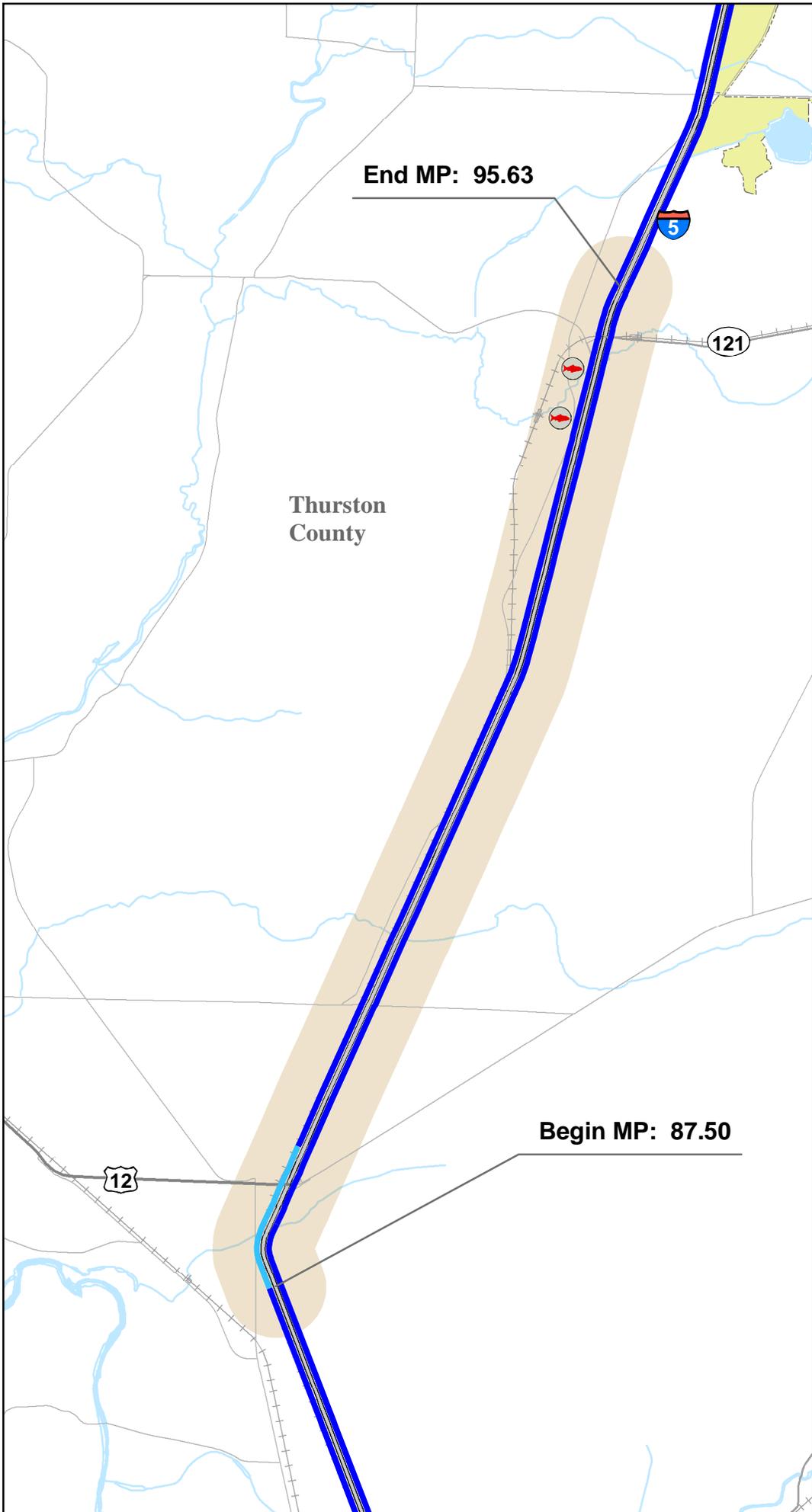
- < 3,000
- 3,001 - 10,000
- 10,001 - 20,000
- 20,001 - 40,000
- 40,001 - 80,000
- 80,001 - 100,000
- 100,001 - 120,000
- > 120,000
- Trucks 10% and Over

Other Features

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

November, 2006





HSP Corridor Series Interstate 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
- Urban Area
- County Line

November, 2006 N

Thurston
County

HSP Corridor Series Interstate

Solutions

End MP: 95.63

MP 97

MP 96

(121)

MP 95

MP 94

MP 93

MP 92

MP 91

MP 90

5

MP 88

Begin MP: 87.50

(12)

Other Features

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

November, 2006



507

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: SR 121 I/C (Maytown) to SR 121 I/C (93rd Ave SW - Tumwater) Vic.

Segment Number: 2

Route: 5 BARM: 95.70 EARM: 99.55 Length: 3.85
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
5	6	0	0	12	12	4	10	16	42	60	70

Corridor Description:

This I-5 segment begins north of the SR 121 Interchange (Maytown) and ends immediately north of the SR 121 Interchange (93rd Ave SW - Tumwater). It is in rolling terrain with rural residential gradually changing to rural suburban. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. The City of Tumwater South Urban Area Boundary is located at the end of this rural segment. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~5 storm water outfalls and ~5 fish passages within this segment of I-5. There are wetlands on both sides of I-5 in the middle third of this segment.

Previously Identified Bottlenecks/Chokepoints:

An emergent bottleneck/chokepoint not previously identified is the I-5 Southbound off ramp stop controlled intersection terminal at the SR 121 Interchange (93rd Ave SW - Tumwater). The Northbound off ramp stop controlled intersection at this same interchange may also be emerging as a bottleneck/chokepoint as new development occurs along 93rd Avenue SW (portion of SR 121).

Known Restrictions:

Wetlands could pose a restriction to widening of mainline Interstate 5. The median and inside shoulders at SR 121/93rd Ave SW I/C Vicinity are narrow.

Studies:

Existing Study Name	Completion Date
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NONE

Current/Underway: Study Name	Expected Completion Date
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NONE

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
85.58	98.69	The purpose of this Phase 2 study is to analyze the feasibility of I-5 High Occupancy Vehicle (HOV) lanes within rural Thurston County and consider other issues such as dedicated freight lanes, high speed ground transportation, commuter rail, transportation demand management (TDM), and intelligent transportation systems (ITS). Need: Existing 6 lane general purpose lanes will not cause future congestion to drop below LOS C/D rural threshold within next 20 years. Assume one year to complete rural phase 2 study.	\$1.5 million

HOV/HOT Lanes:

Existing:

NONE

Planned:

The current highway system plan proposes a feasibility study for widening from 6 lanes to 8 lanes creating high occupancy vehicle (HOV) lanes or other alternative conceptual solutions.

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I-5: SR 121 I/C (Maytown) to SR 121 I/C (93rd Ave SW - Tumwater) Vic.

Segment Number: 2

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)	
<i>PIN</i>	<i>Project Title</i>
300520B	I-5/SR 121 to Tumwater Blvd - Paving, MP 99.15 to MP 101.23, Hot Mix Asphalt (HMA).

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)	
<i>PIN</i>	<i>Project Title</i>

Deficiencies:

Current

The I-5 Southbound off ramp stop controlled intersection at SR 121 I/C (93rd Ave SW - Tumwater) may require a signal and channelization. Another emerging bottleneck/chokepoint location may be the I-5 Northbound off ramp stop controlled intersection at the same interchange.

Future (5-10 years)

Implementation of the Intelligent Transportation System (ITS) Master Plan in rural Thurston County would alleviate future deficiencies.

Future (15-20 years)

Study the feasibility of High Occupancy Vehicle (HOV) lanes or other alternatives as part of the Phase 2 rural Thurston County Study.

Concrete Data

<i>(lane miles calculated exclude bridges, other major gaps, add/drop lanes)</i>	<i>Lane Miles</i>	<i>BARM</i>	<i>EARM</i>	<i>BARM</i>	<i>EARM</i>
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:					
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Hot Mix Asphalt (HMA)

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I-5: SR 121 I/C (Maytown) to SR 121 I/C (93rd Ave SW - Tumwater) Vic.

Segment Number: 2

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
99.35	99.35	<i>I-5/SR 121 I/C (93rd Ave SW - Tumwater) Southbound Off Ramp Stop Controlled Intersection needs a new signal and channelization due to higher than anticipated growth (e.g. New development like the proposed Pilot truck stop or other developments along the 93rd Ave SW commercial strip are contributing to this emerging need. The Northbound Off Ramp Stop Controlled Intersection will also need improvement. An Interchange development plan may be desired at SR 121 (93rd Ave SW - Tumwater). At this time, Northbound ramp terminal channelization improvements are assumed to be developer funded.</i>			\$1,528,000
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
85.58	98.69	<i>Implement rural elements of the Intelligent Transportation System (ITS) Master Plan for this segment.</i>			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
95.7	99.55	<i>Consider additional High Occupancy Vehicle lanes that revert</i>		<i>30% placeholder</i>	<i>\$48.069 million</i>

Future Corridor Vision:

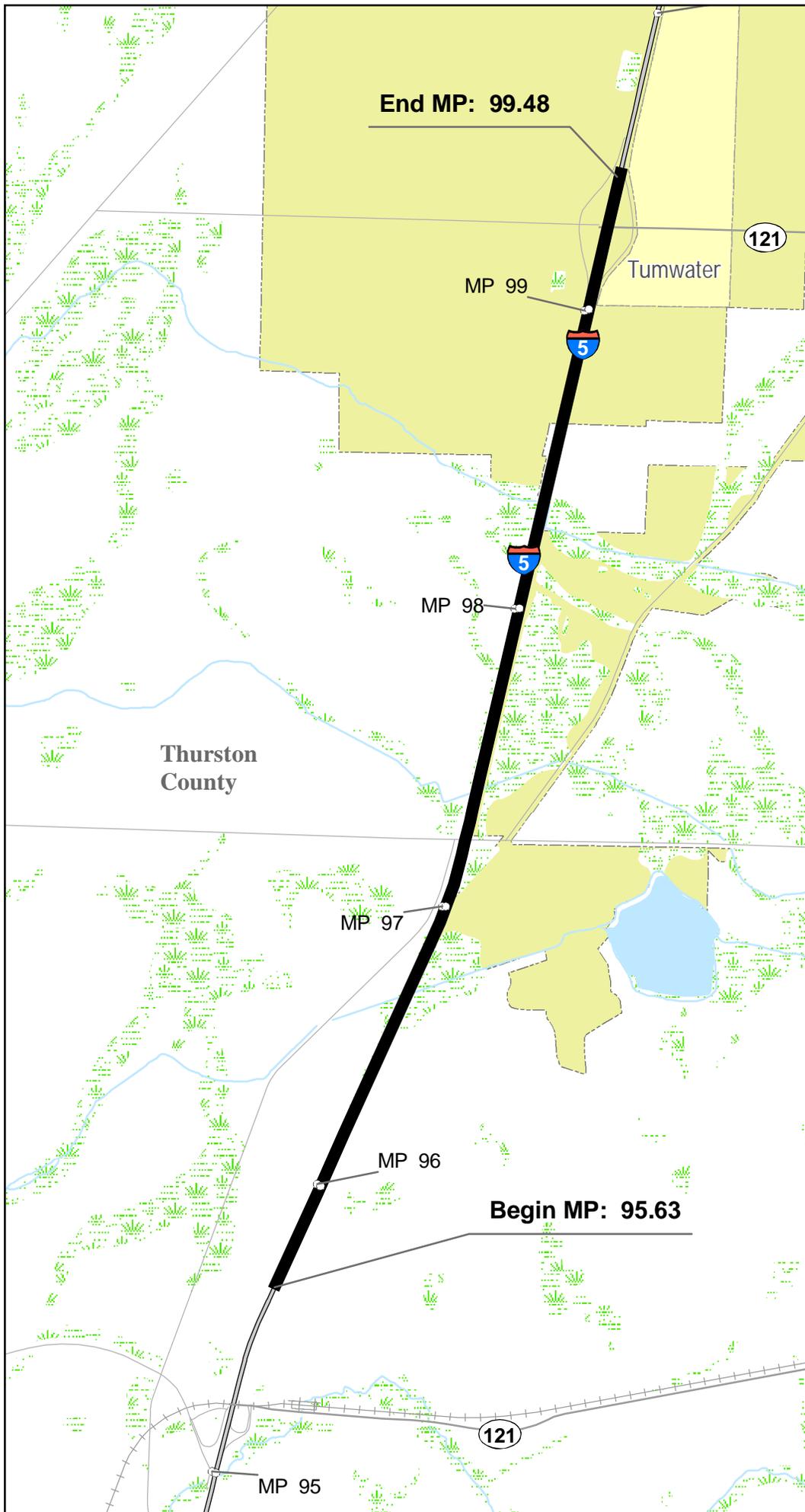
Near-term to mid-term is minor interchange improvements at SR 121/93rd Ave SW ramp terminal(s) and intelligent transportation systems (ITS) master plan improvements. Long-term vision is widening from 6 lanes to 8 lanes creating High Occupancy Vehicle (HOV) lanes that could be general purpose during off peak period. Other options like auxiliary lanes between interchanges, dedicated freight lanes (commerce corridor), improving local frontage roads, etc. would be studied as part of a Phase 2 feasibility study for Thurston County.

HSP Corridor Series
Interstate

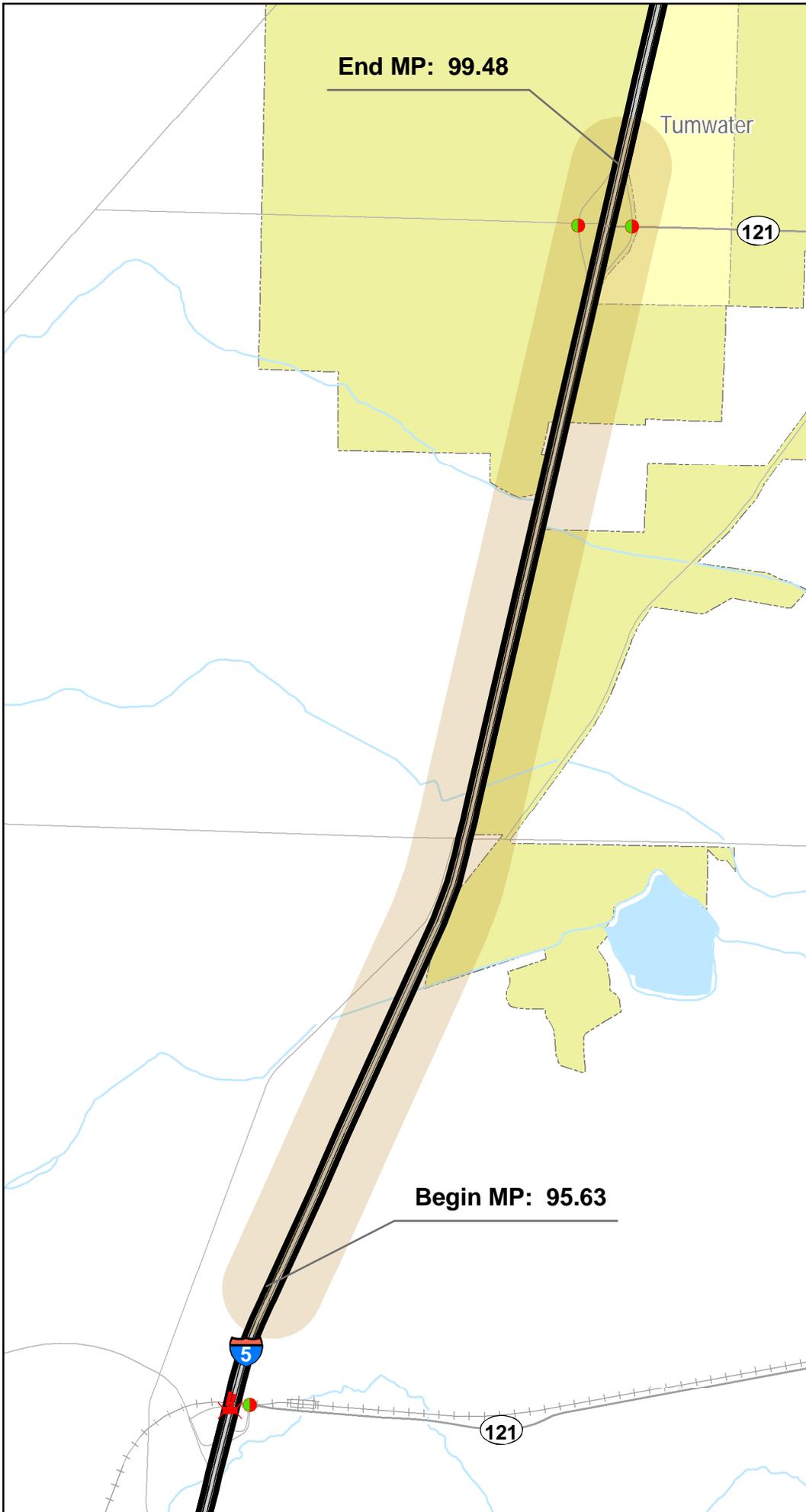
Characteristics

Other Features

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



HSP Corridor Series Interstate 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

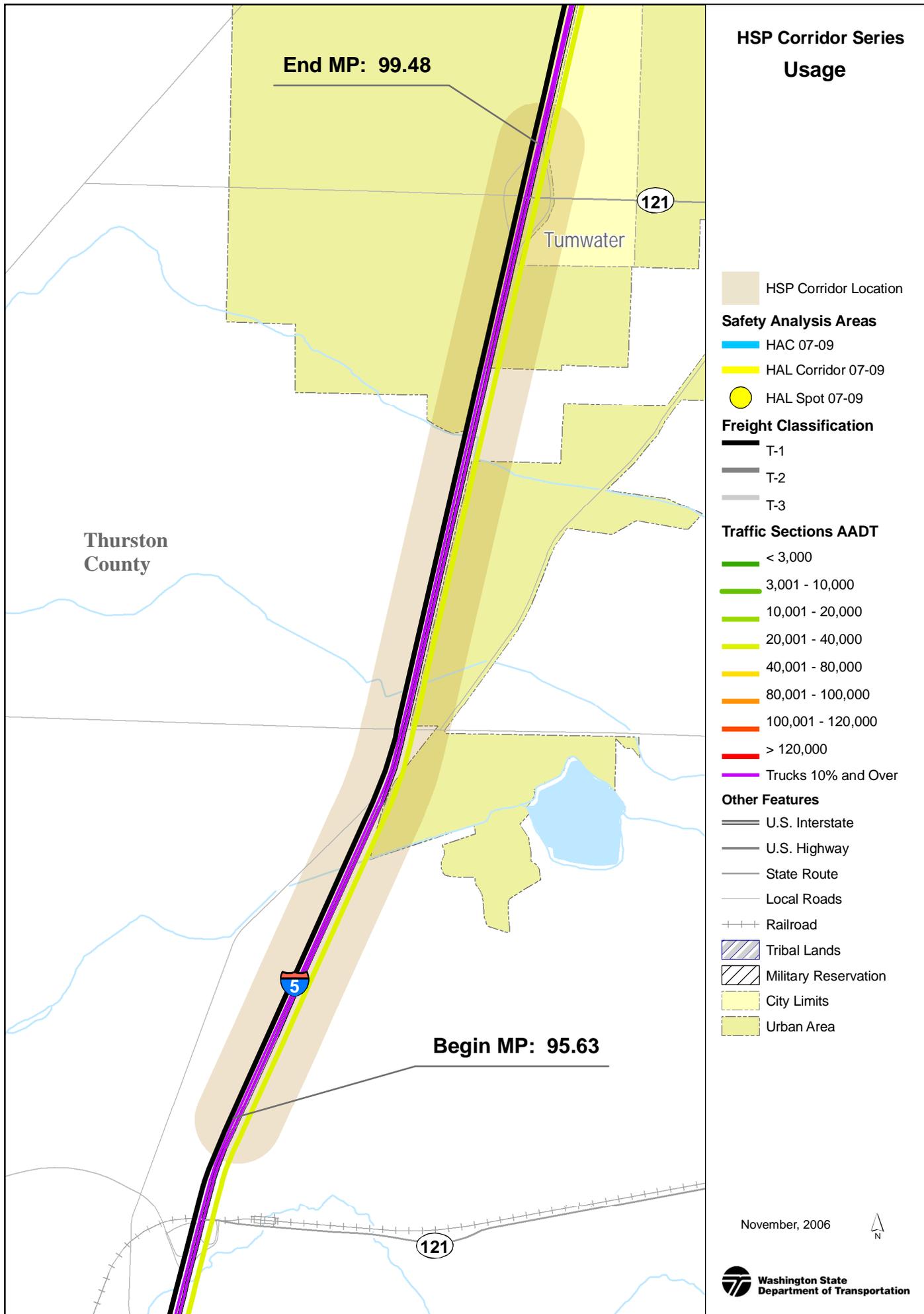
- HMA
- BST
- PCCP

Other Features

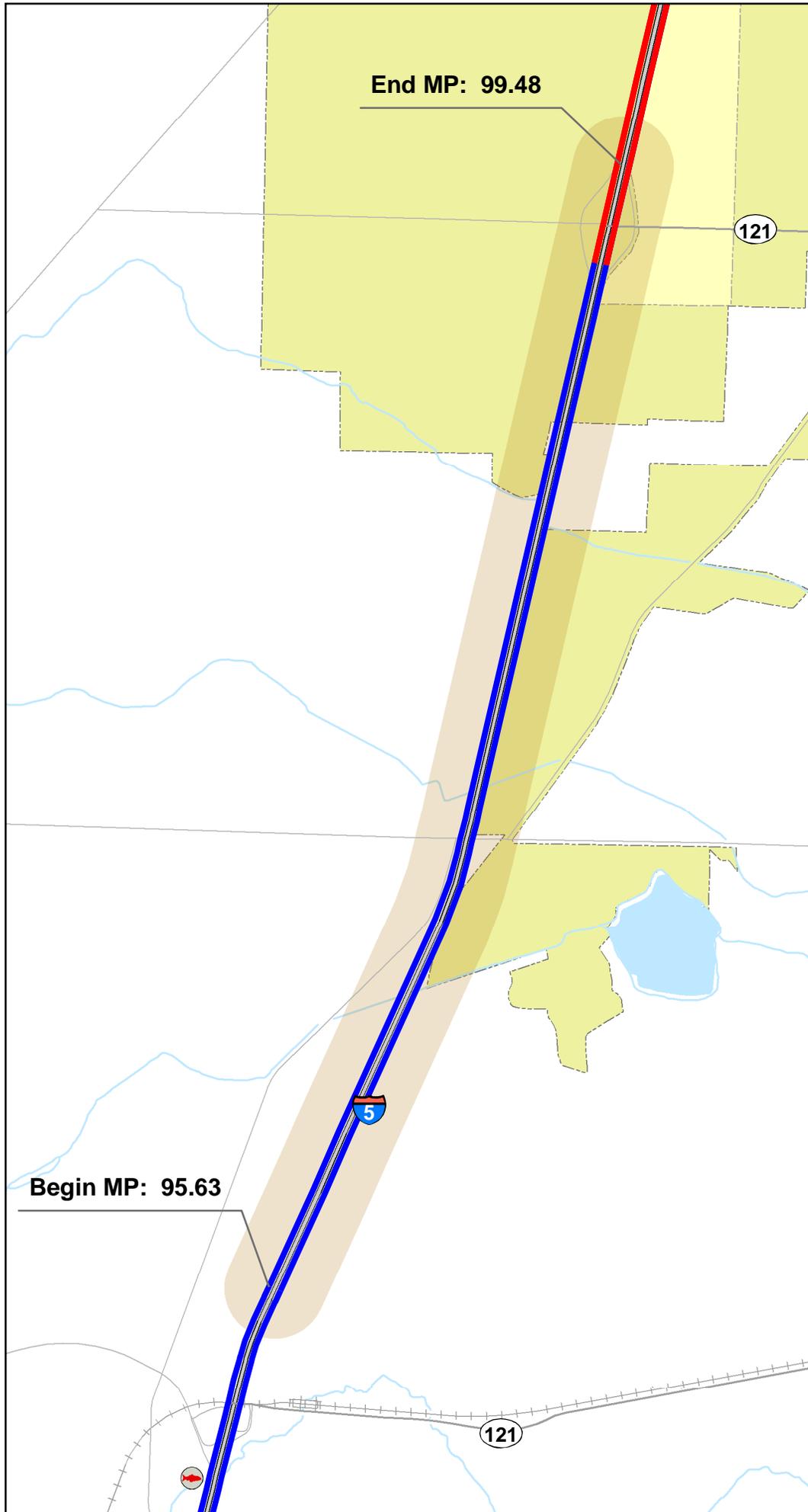
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
- Urban Area
- Airport
- County Line

November, 2006





HSP Corridor Series Interstate Needs



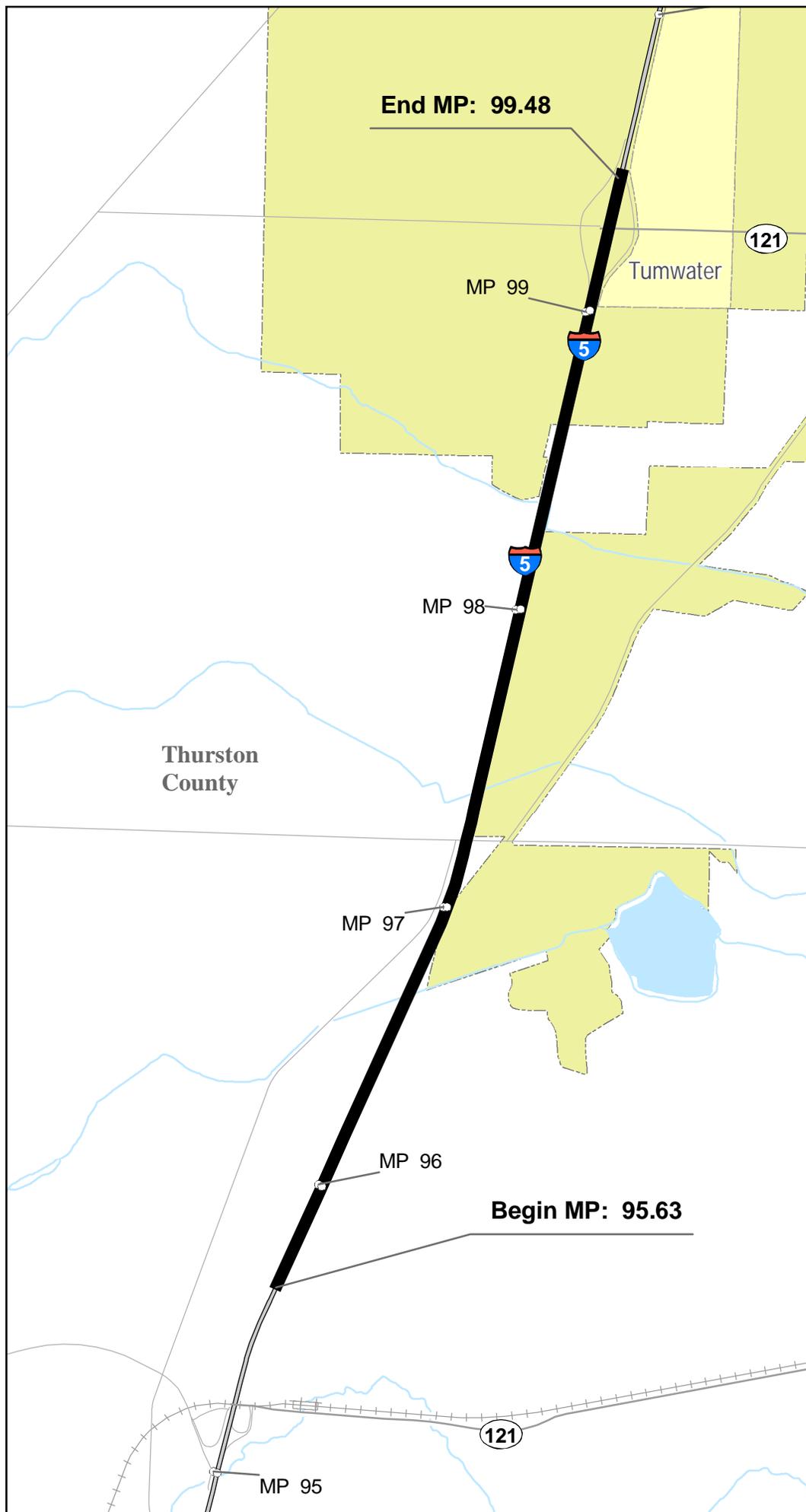
- HSP Corridor Location
- Bridge Replacement Priority**
 - Replacement
 - Seismic
 - Special
 - Scour
 - Painting
 - Miscellaneous
 - Bridge Deck
- Other Bridge Issues**
 - 2 Lane BW Narrow Bridge
 - Restricted Bridge
 - Posted Bridge
 - Vert. Clearance 15.5' Or Less
- Fish Barriers**
 - Require Repair
 - Little Gain
 - Undetermined
- Unstable Slope**
 - Debris Flow
 - Erosion
 - Landslide
 - Rockfall
 - Settlement
- Paving Due**
 - Past Due
 - 2005 - 2007
 - 2008 - 2009
 - 2010 - 2011
 - 2012 - 2026
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November, 2006



HSP Corridor Series
Interstate

Solutions



Other Features

- U.S. Interstate
- U.S. Highway
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- Urban Area
- County Line

November, 2006



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I-5: SR 121 I/C (93rd Ave SW - Tumwater) to Trosper Rd I/C Vicinity

Segment Number: 3

Route: 5 BARM: 99.55 EARM: 102.59 Length: 3.04

Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	6	0	0	12	12	4	10	12	16	60	70

Corridor Description:

This I-5 segment begins north of the SR 121 I/C (93rd Ave SW - Tumwater) and ends south of the Trosper Road I/C. It is in level terrain and the major employment is government agencies on the east side of I-5 and commercial retail on the west side (Costco, Fred Meyer, Home Depot, future Wal-Mart). The City of Tumwater's population was 12,740 in 2003. The Olympia Municipal Airport and City government is located east of I-5 in this segment. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~2 storm water outfalls within this segment of I-5 with minimal wetlands north of SR 121 I/C (93rd Ave SW - Tumwater) on the west side of I-5.

Previously Identified Bottlenecks/Chokepoints:

I-5: Northbound Off/On Ramp Terminal at Tumwater Boulevard (MP 100.93) and Southbound Off/On Ramp Terminal at Tumwater Boulevard (MP 101.62) were previously identified as 2005 bottleneck/chokepoint locations. Tumwater Boulevard Interchange was previously known as Airdustrial Interchange.

Known Restrictions:

Further widening of I-5 mainline may be restricted by the existing storm water treatment facility located on the west side of I-5.

Studies:

Existing Study Name	Completion Date
Draft Airdustrial Way SubArea Transportation Study, Tumwater, Washington.	Sep-99

Current/Underway: Study Name	Expected Completion Date
City of Tumwater, Tumwater Boulevard Interchange Improvement Study currently underway for ~\$50,000	Unknown

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy Vehicle and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:
NONE

Planned:

I-5 High Occupancy Vehicle (HOV) and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 of the study would concentrate on urban Thurston County.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: SR 121 I/C (93rd Ave SW - Tumwater) to Trosper Rd I/C Vicinity

Segment Number: 3

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300520B	I-5/SR 121 to Tumwater Blvd - Paving, MP 99.15 to MP 101.23. Hot Mix Asphalt (HMA).
300585A	I-5/Tumwater Blvd. NB On Ramp Intersection - Safety, MP 101.30 to MP 101.37. Channelization (EB left on Tumwater Blvd and widening to two lanes receiving lanes on the I-5 Northbound On-Ramp to separate right and left turn traffic).

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
-----	---------------

Deficiencies:

Current
 The Southbound Off Ramp queues at Tumwater Boulevard I/C in the AM peak were projected to cause the signalized ramp terminal intersection to operate at level of service E or F in year 2005. The Northbound Off Ramp left turn movement at the Tumwater Boulevard I/C unsignalized stop controlled intersection in the PM peak was projected to operate at level of service F in year 2005.

Future (5-10 years)
 The Tumwater Boulevard Interchange Bridge Undercrossing will still be deficient even with the proposed bottleneck/chokepoint relief at the ramp terminals. This undercrossing (Tumwater Boulevard) will require widening from its current 3-lane configuration to 5/6 lanes to accommodate a 20-year design along with possible ramp reconfigurations (Southbound Loop Ramp for AM peak movement?). Implementation of the Intelligent Transportation System (ITS) Master Plan in urban Thurston County would also alleviate future deficiencies in this segment.

Future (15-20 years)
 Study the feasibility of High Occupancy Vehicle (HOV) lanes or other alternatives as part of the Phase 1 urban Thurston County Study.

Concrete Data

(lane miles calculated exclude bridges, other major gaps, add/drop lanes)	Lane Miles	BARM	EARM	BARM	EARM
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:					
Number of Low Priority Concrete Miles:					

Comments:
 Mainline I-5 in this segment is Hot Mix Asphalt (HMA)

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I-5: SR 121 I/C (93rd Ave SW - Tumwater) to Trosper Rd I/C Vicinity

Segment Number: 3

New Solutions:

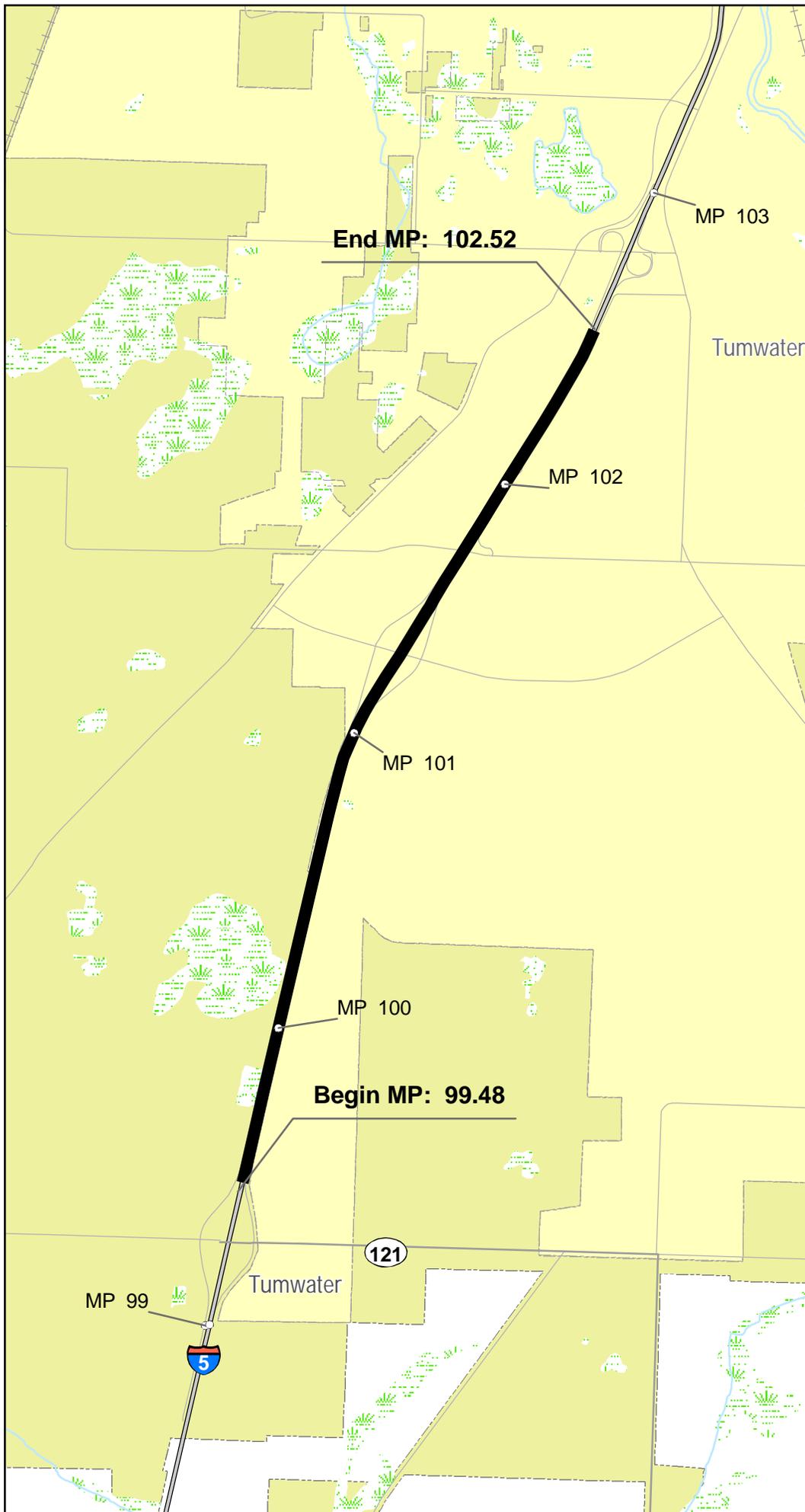
<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
101.00	101.00	New traffic signal at the Northbound Off/On Ramp Terminal with Eastbound acceleration lane on Tumwater Boulevard.		30% placeholder	\$3.418 million
101.69	101.69	Phase 1 improvement at the Southbound Off/On Ramp Terminal that includes modifying the existing signal system, a new right turn lane on the Southbound off ramp and on Eastbound Tumwater Boulevard, doubling the length of the Southbound off left turn lane, and providing an acceleration lane on the I-5 on ramp. Consider a Westbound left turn if enough storage between existing bridge and ramp terminal.		30% placeholder	\$6.264 million
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
100.93	101.62	Phase 2 design concerns could address items like loop ramps and bridge widening since Tumwater Boulevard Interchange would be approaching or exceeding congestion with just Phase 1 bottleneck/chokepoint improvements. Also implement urban elements of the Intelligent Transportation System (ITS) Master Plan for this segment.			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
99.55	102.59	Consider additional High Occupancy Vehicle lanes that revert to general purpose use in the off peak period. Other options could include auxiliary lanes between interchanges or local frontage road improvements (e.g. Tyee Drive Extension on west side of I-5).			
101.37	101.37	New 100-stall park and ride lot near Labor and Industries			

Future Corridor Vision:

Near-term are ramp terminal improvements at Tumwater Boulevard that won't require an Interchange Justification Report (IJR) or significant environmental documentation. Mid-term are Interchange improvements at Tumwater Boulevard that will require an IJR and environmental documentation. Implementation of the ITS Master Plan is also a mid-term investment. Long-term vision is widening from 6 lanes to 8 lanes creating High Occupancy Vehicle (HOV) lanes that could be general purpose during off peak period or auxiliary lanes between major interchanges as needed. Other options like dedicated freight lanes (commerce corridor) , improving local frontage roads, etc. would be studied as part of a Phase 1 feasibility study for urban Thurston County.

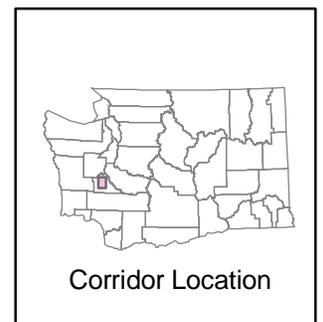
**HSP Corridor Series
Interstate**

Characteristics



Other Features

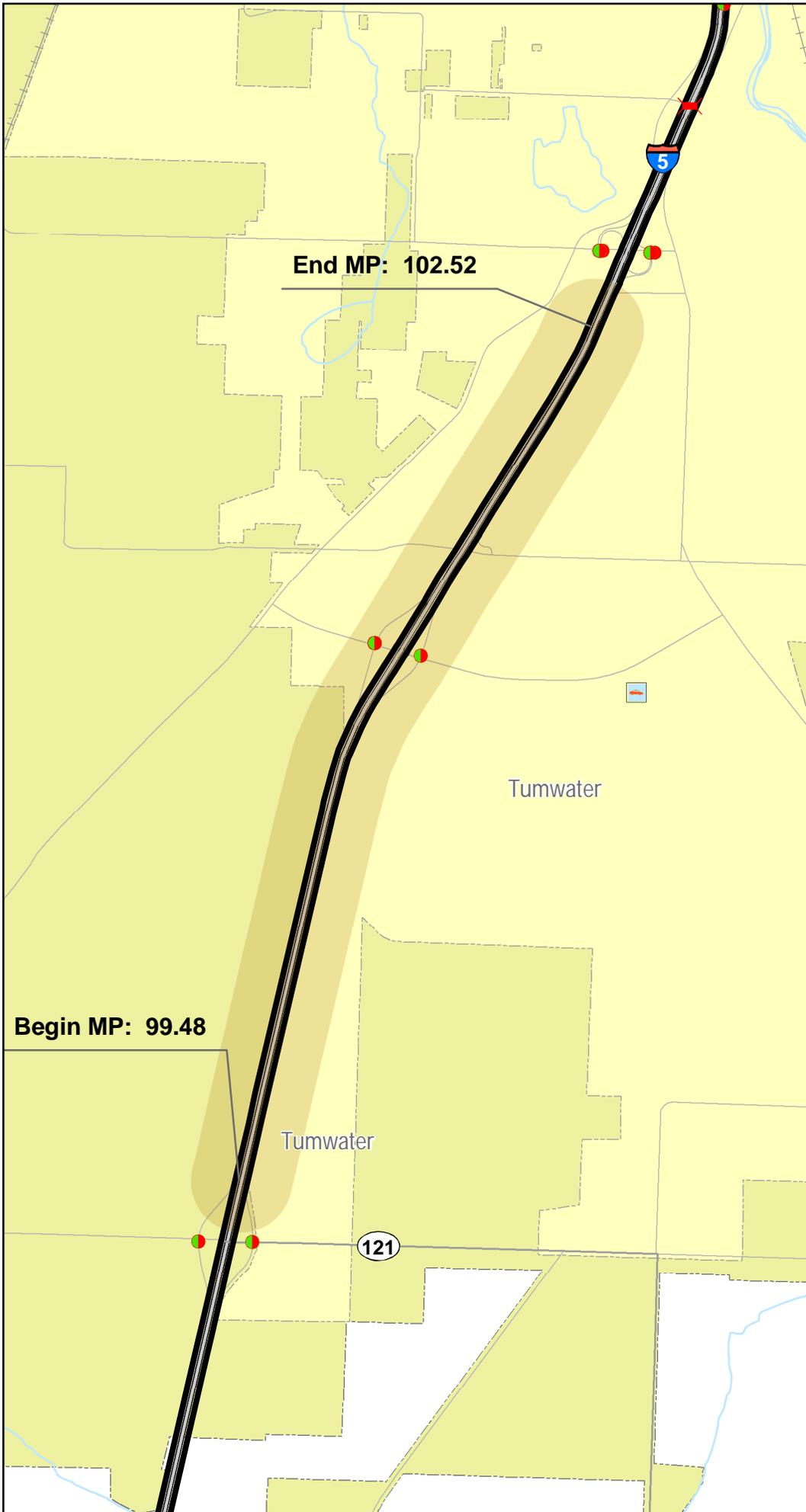
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- +++ Railroad
- Wetlands
- Tribal Lands
- Military Reservation
- City Limits
- Urban Area
- County Line



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HSP Corridor Series Interstate 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

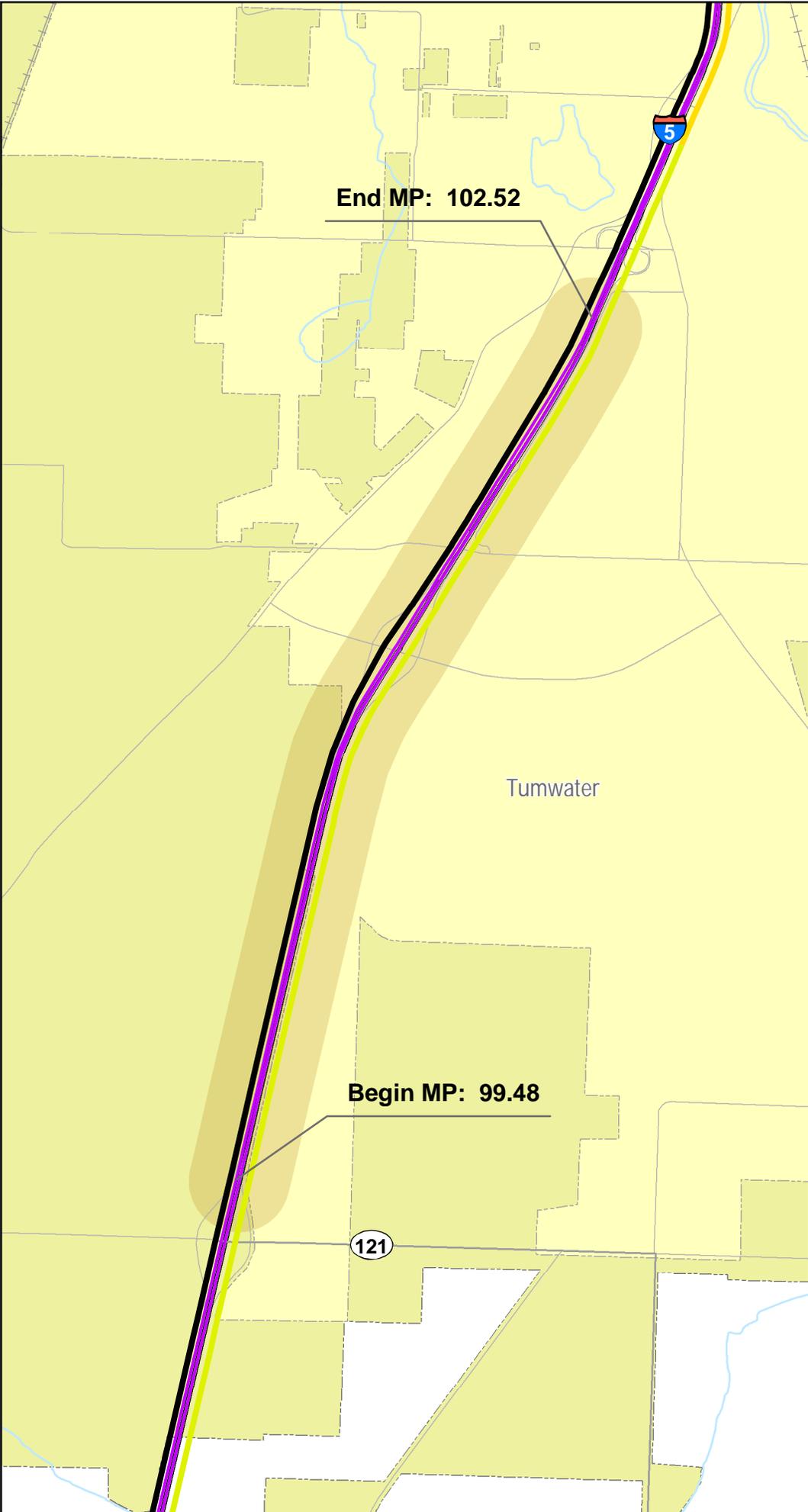
Other Features

- 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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HSP Corridor Series Usage



End MP: 102.52

Begin MP: 99.48

Tumwater

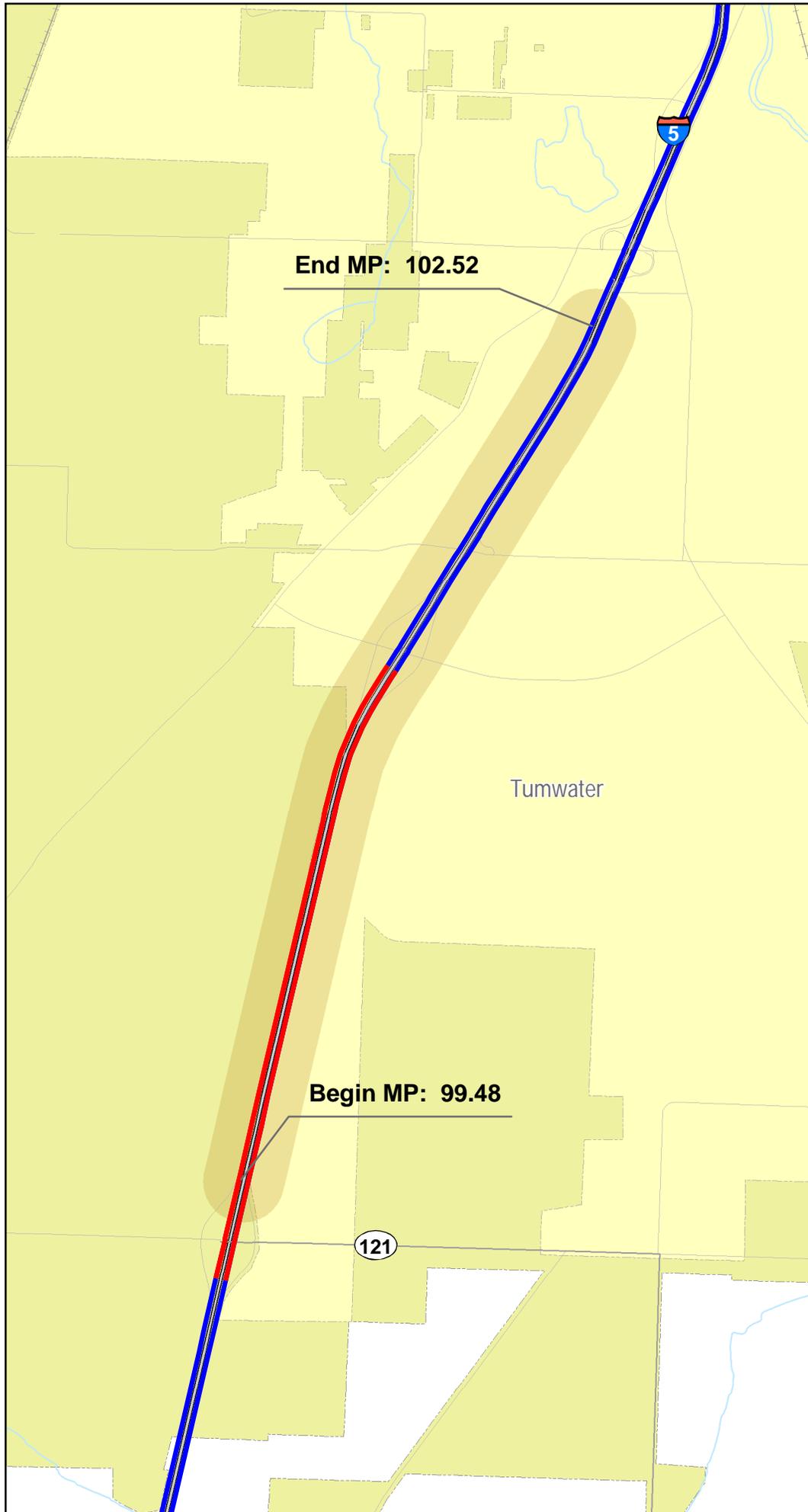
121

- HSP Corridor Location
- Safety Analysis Areas**
 - 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

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HSP Corridor Series Interstate 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

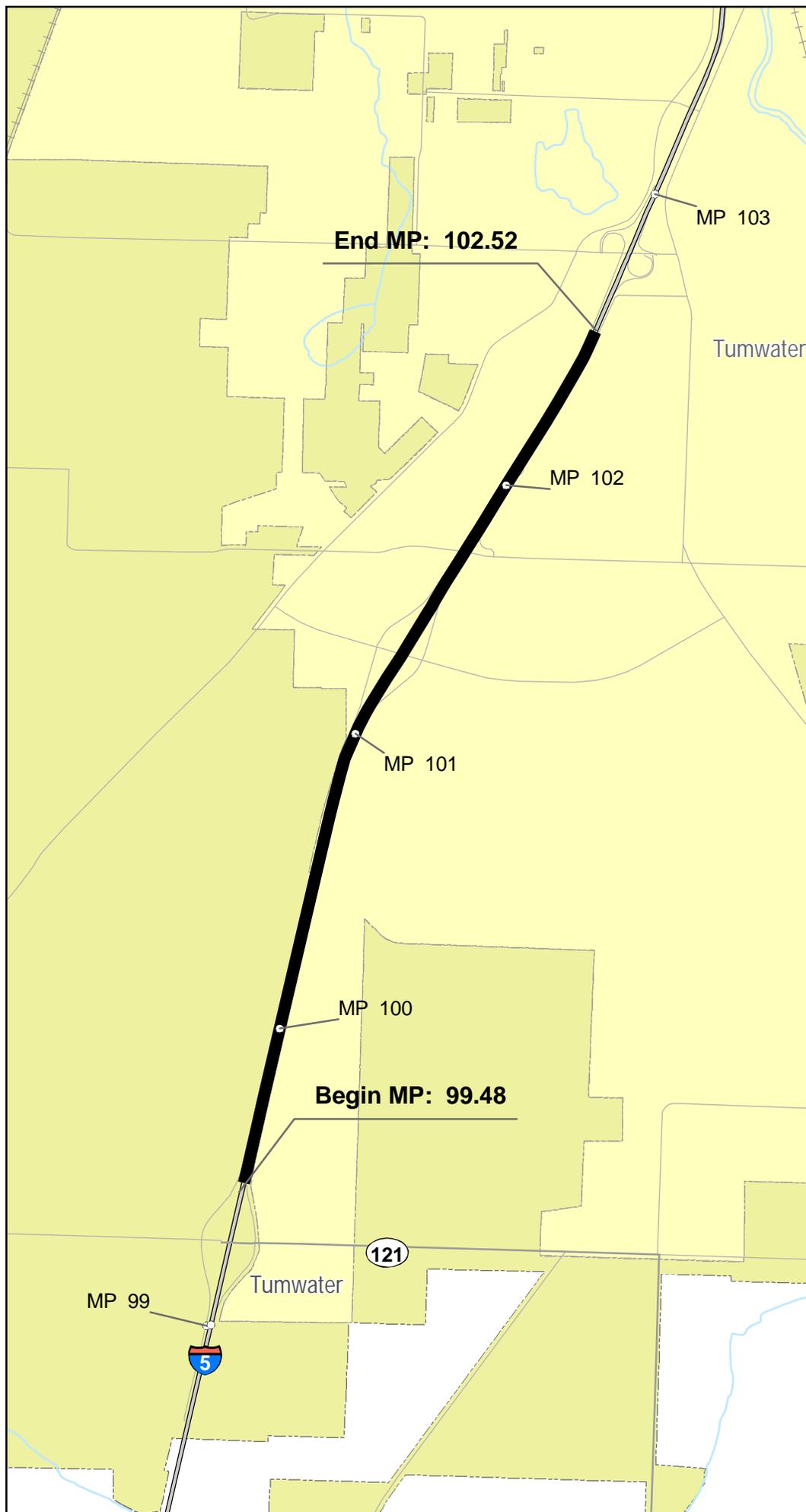
- U.S. Interstate
- U.S. Highway
- State Route
- Local Roads
- Railroad
- Military Reservation
- Tribal Lands
- City Limits
- Urban Area
- County Line

November, 2006



**HSP Corridor Series
Interstate**

Solutions



Other Features

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

November, 2006



DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Trosper Rd I/C Vicinity to Capitol Boulevard Vicinity (US 101)

Segment Number: 4

Route: 5 BARM: 102.95 EARM: 104.82 Length: 1.87
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	10	0	0	12	12	4	14	4	22	60	60

Corridor Description:

This segment begins south of the Trosper Rd I/C and ends near the Capitol Boulevard Undercrossing (near US 101). It is in rolling terrain with significant vertical and horizontal curves at the junction with US 101. The City of Tumwater transitions into the City of Olympia in this segment with the major employer being State Government in downtown Olympia with County Government, South Puget Sound Community College, and large retail developments nearby off US 101 (Westlake Mall, Tumwater Hill, etc). I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~8 storm water outfalls within this segment of I-5. Capitol Lake and the storm water outfalls into it are a known environmental issue. Capitol Lake (an impounded river) may eventually become a fresh water marsh or be restored to a functioning estuary. Sediment coming down the river is deposited in the lake near Heritage Park, Marathon Park, and the Interpretive Center. The lake is on the State's list of impaired water bodies.

Previously Identified Bottlenecks/Chokepoints:

There were two conceptual solutions in this segment. One included ramp metering in both directions between Trosper Rd I/C and the Thurston/Pierce County Line (~15 on-ramp locations). The other conceptual solution was at the I-5 southbound off ramp to north 2nd Avenue (N 2nd Avenue and Desoto) intersection. The proposal was to install stop signs on the local arterials (Desoto and N 2nd Avenue) creating a 3-way stop. Currently, the only stop controlled movement is the I-5 and US 101 off ramp approaches.

Known Restrictions:

The steep terrain near the Capitol Boulevard Undercrossing and Capitol Lake are likely to restrict widening in this vicinity. The I-5/US 101 service interchange is also located in this steep terrain with nearby historical structures that could be impacted by additional widening (Old Tumwater Brewery near Heritage park and two historical houses in Tumwater off Dechutes Way). The inside shoulders are narrow (less than 6-ft effective).

Studies:

Existing Study Name	Completion Date
---------------------	-----------------

Current/Underway: Study Name	Expected Completion Date
Capitol Lake - Deschutes River Estuary Feasibility Study (or Restoration Study)	2006
West Olympia Access and Circulation Study	2008

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy Vehicle and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:
NONE

Planned:

I-5 High Occupancy Vehicle (HOV) Feasibility Study, I-5/US 101 Interchange, High Speed Ground Transportation or commuter rail, Transportation Demand Management, and Intelligent Transportation System. Phase 1 of the study would concentrate on urban Thurston County.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Trosper Rd I/C Vicinity to Capitol Boulevard Vicinity (US 101)

Segment Number: 4

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)	
<i>PIN</i>	<i>Project Title</i>

NONE

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)	
<i>PIN</i>	<i>Project Title</i>

NONE

Deficiencies:

Current
 The Trosper Road Interchange and nearby local arterial signal systems generate significant PM peak traffic queues on the local arterials (Capitol Boulevard, Trosper, Tyee, and Littlerock) and at the I-5 Southbound off ramp to Trosper Rd. The Southbound off ramp queues at US 101 in the PM peak generate traffic queuing as far north as the City Center (Exit 105). Ramp merging and weaving operations at I-5/US 101 and between I-5/US 101 to Trosper Rd Interchange are causing speed reductions on mainline I-5 at the ramp influence areas.

Future (5-10 years)
 The I-5 Southbound segment between the Trosper Road off ramp and the US 101 on-ramp to I-5 Southbound will be impacted by pipeline development (Wal-Mart near Trosper and Littlerock SubArea development. West Olympia development will increase traffic on the US 101 on-ramp to I-5 Southbound (Westlake Mall expansion, Tumwater Hill, etc.). The Southbound horizontal curve on I-5 immediately followed by a moderately steep vertical hill slows down heavy trucks. As traffic volumes increase in this segment from the US 101 to I-5 on ramp and from I-5 to Trosper Road off ramp, the interaction between these weaving vehicles and slow moving trucks will generate congestion.

Future (15-20 years)
 Study the feasibility of High Occupancy Vehicle (HOV) lanes or other alternatives as part of the Phase 1 urban Thurston County Study as I-5 will be failing.

Concrete Data

<i>(lane miles calculated exclude bridges, other major gaps, add/drop lanes)</i>	<i>Lane Miles</i>	<i>BARM</i>	<i>EARM</i>	<i>BARM</i>	<i>EARM</i>
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:					
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Hot Mix Asphalt (HMA).

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Trosper Rd Vicinity to Capitol Boulevard Vicinity (US 101)

Segment Number: 4

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
102.93	114.93	Ramp metering between Trosper Rd I/C and Thurston County Line.		0%	\$3.2358 million
104.05	104.05	Install stop signs on local arterials (Desoto and N 2nd Avenue) to create a 3-way stop at the US 101 off ramp and I-5 off ramp to N 2nd Ave.		30% placeholder	\$2,000 (Could increase to \$6 thousand with labor)
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
102.95	104.82	Intelligent Transportation Systems (ITS) Master Plan Improvements			
104.05	104.05	A signal with acceleration lane or other alternative at Desoto/N 2nd Ave./US 101 off ramp and I-5 off ramp to N 2nd Ave. to improve LOS (LOS E with stop signs)			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
		Need phase 1 of the I-5 High Occupancy Vehicle and/or			

Future Corridor Vision:

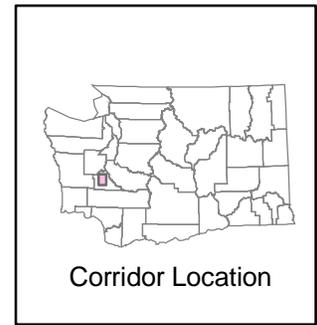
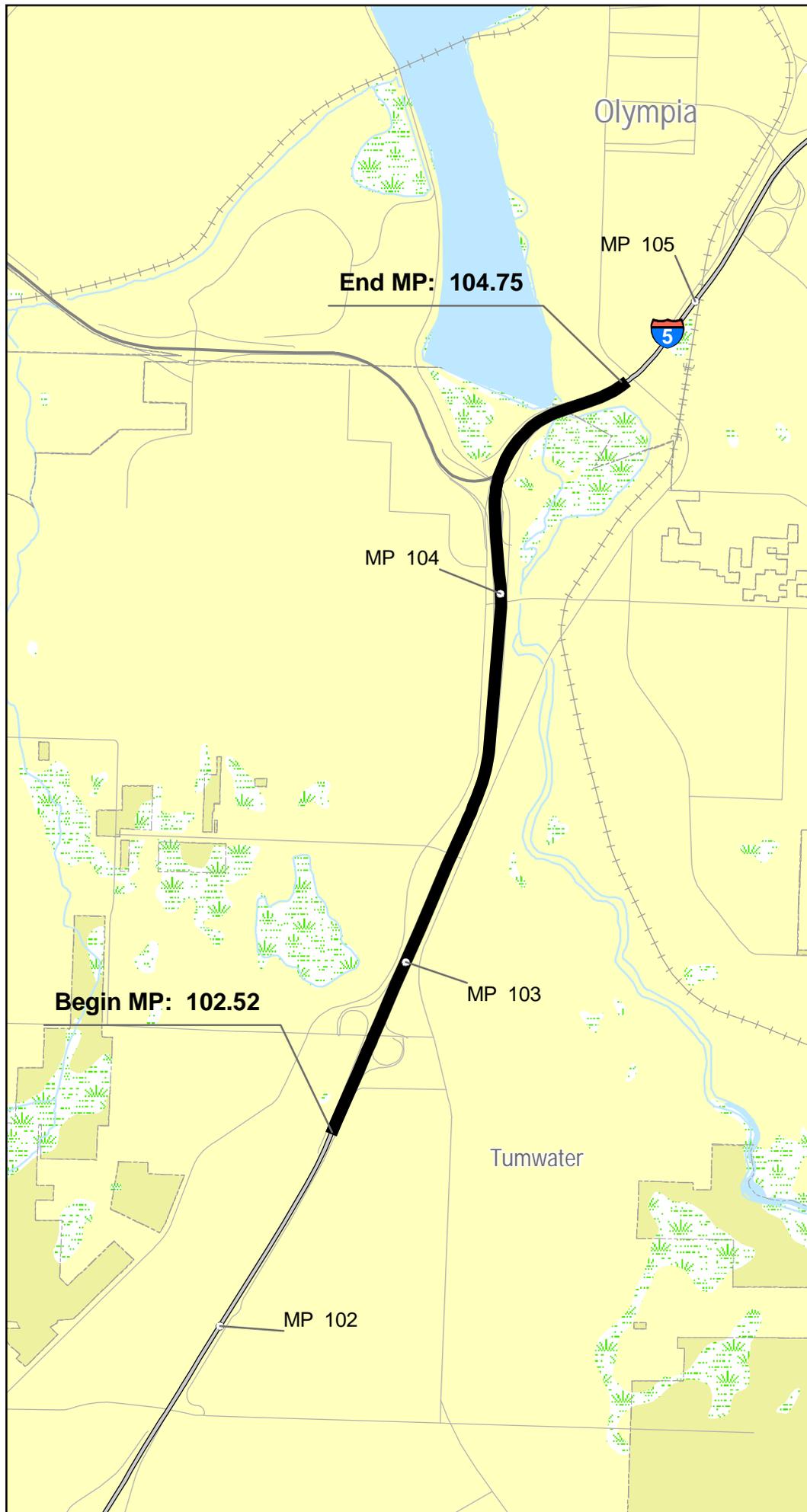
The congested I-5/Trosper Rd I/C could be improved by adding a new undercrossing at nearby Lee Street opening up opportunities for a split-diamond type operation in the future. Other I-5/Trosper Rd I/C alternatives should also be considered. The existing I-5/US101 Service-Level I/C could be modified to include HOV-to-HOV connections. Other I-5/US 101 Service Level I/C alternatives should also be considered. There may be opportunities to utilize parallel local arterials as frontage roads for local traffic.

HSP Corridor Series Interstate

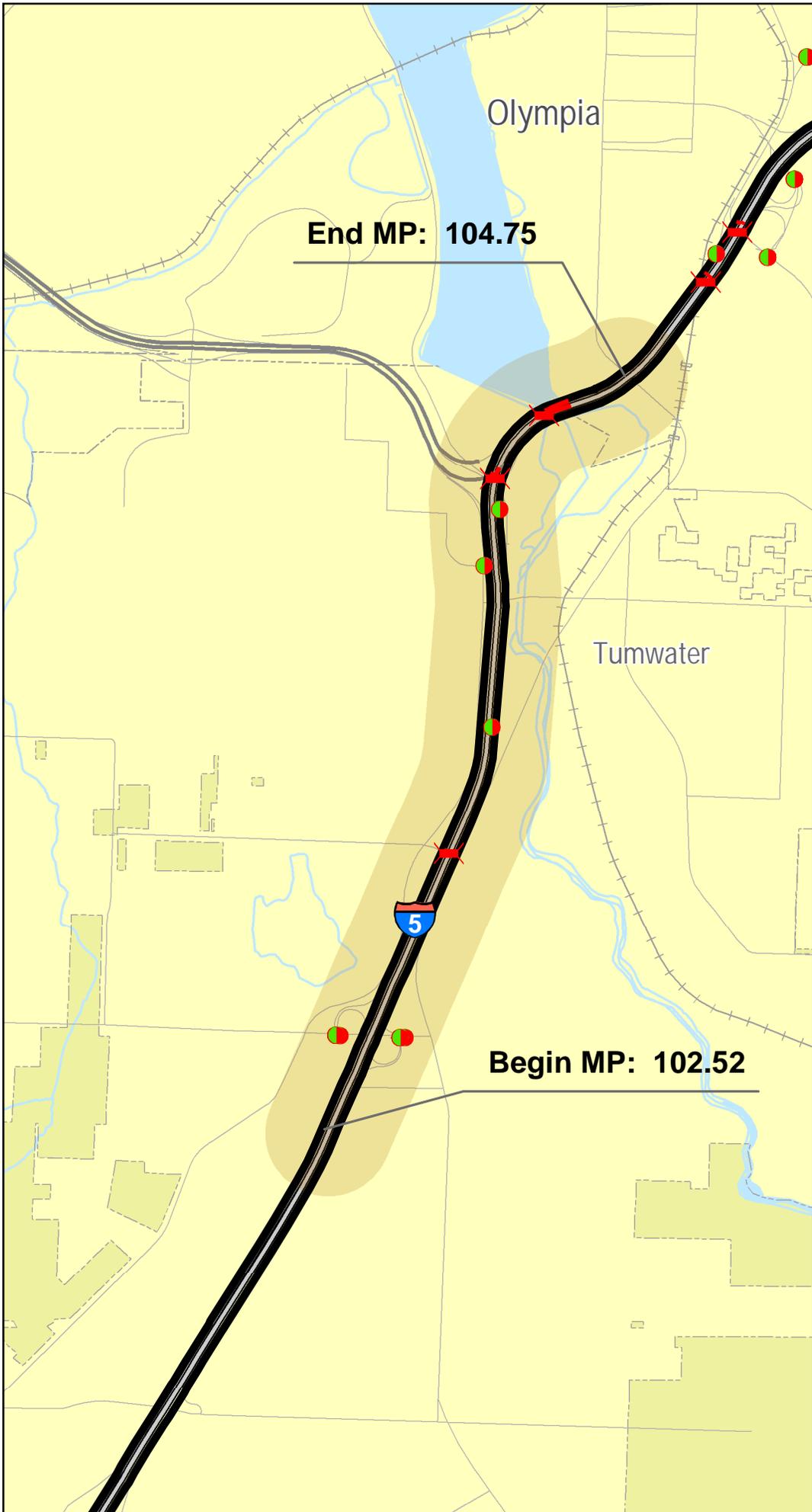
Characteristics

Other Features

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



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**HSP Corridor Series
Interstate
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

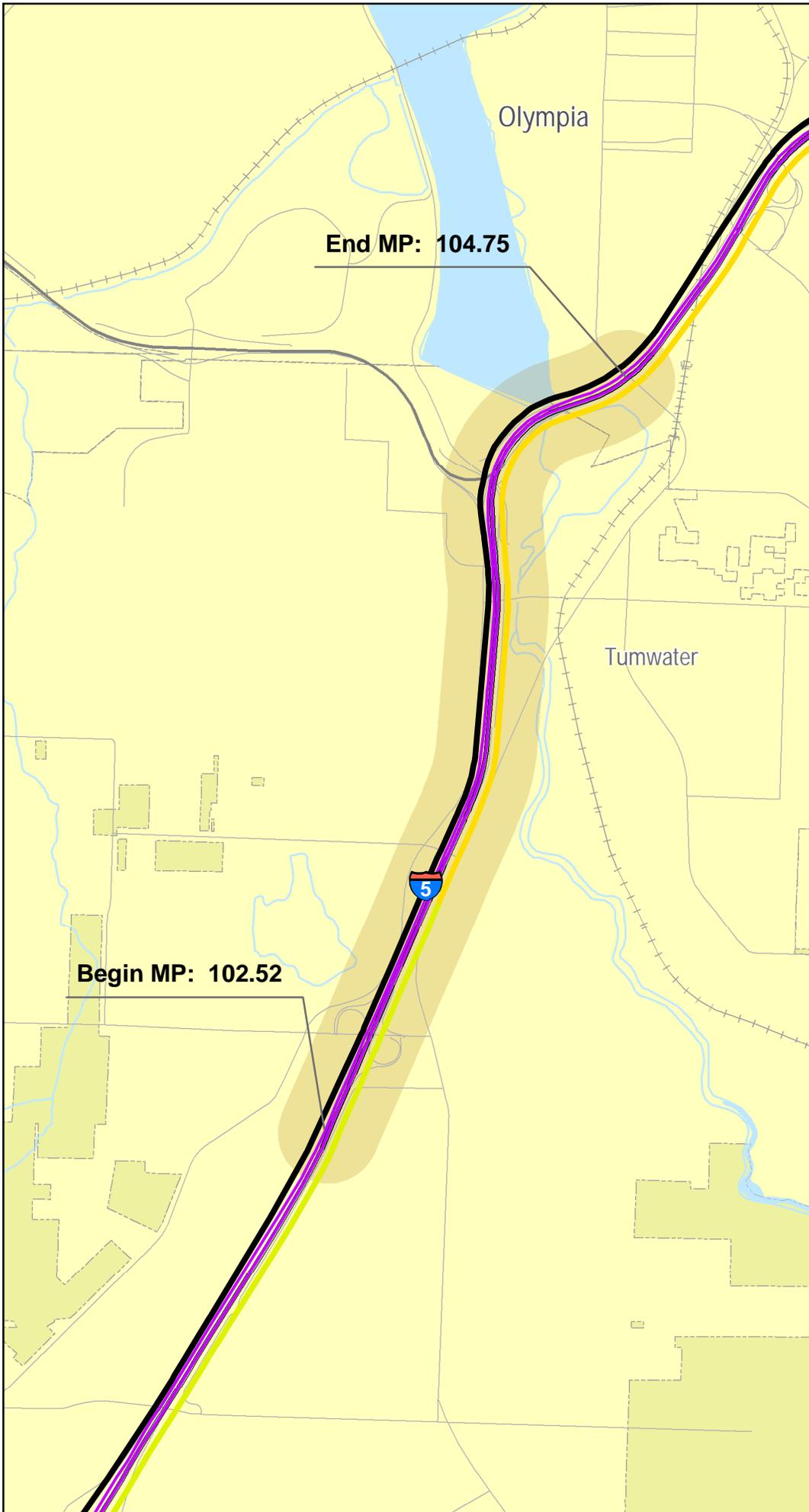
- HMA
- BST
- PCCP

Other Features

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

November, 2006





HSP Corridor Series Usage

 HSP Corridor Location

Safety Analysis Areas

-  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

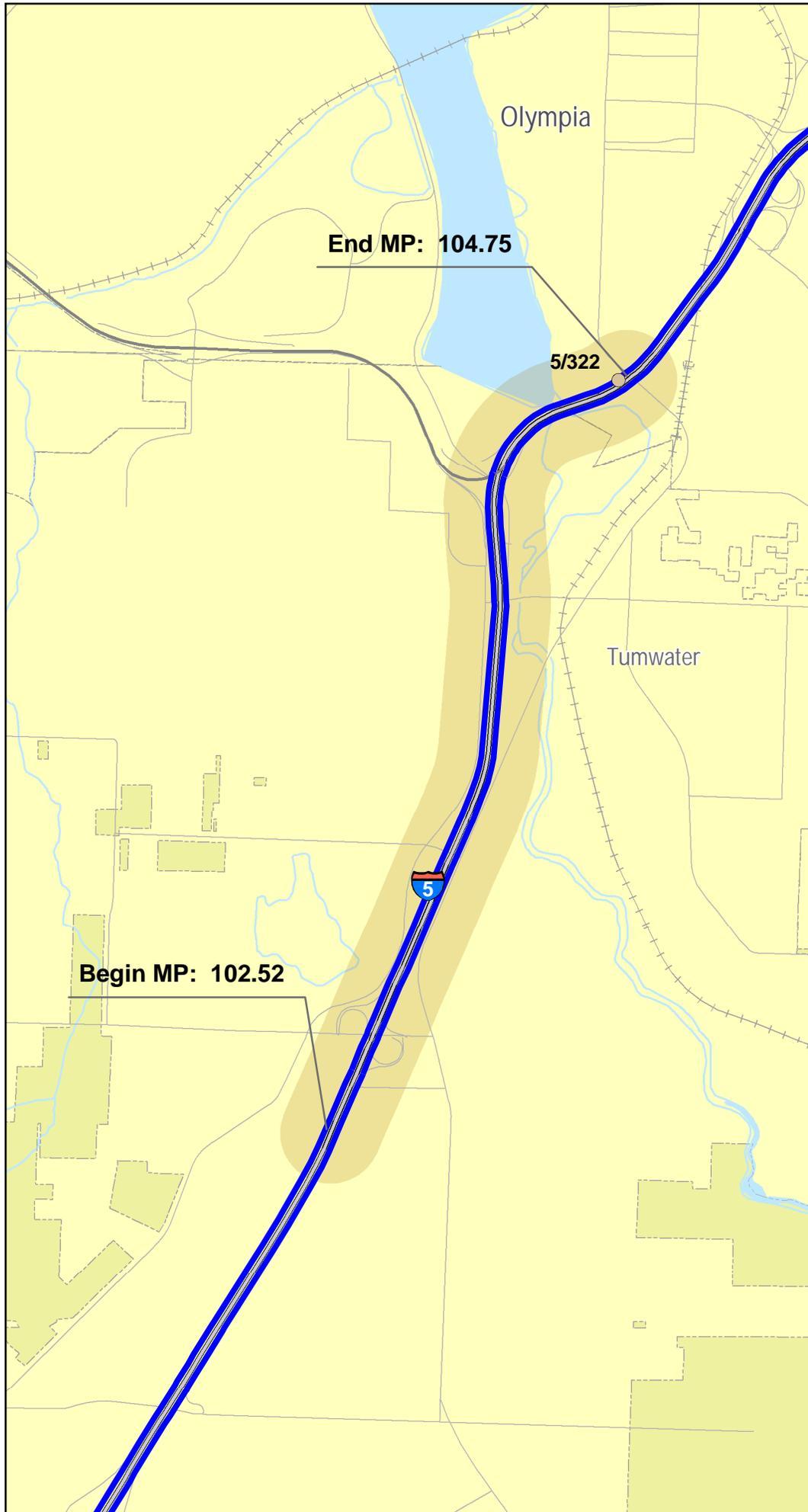
Other Features

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

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HSP Corridor Series Interstate Needs

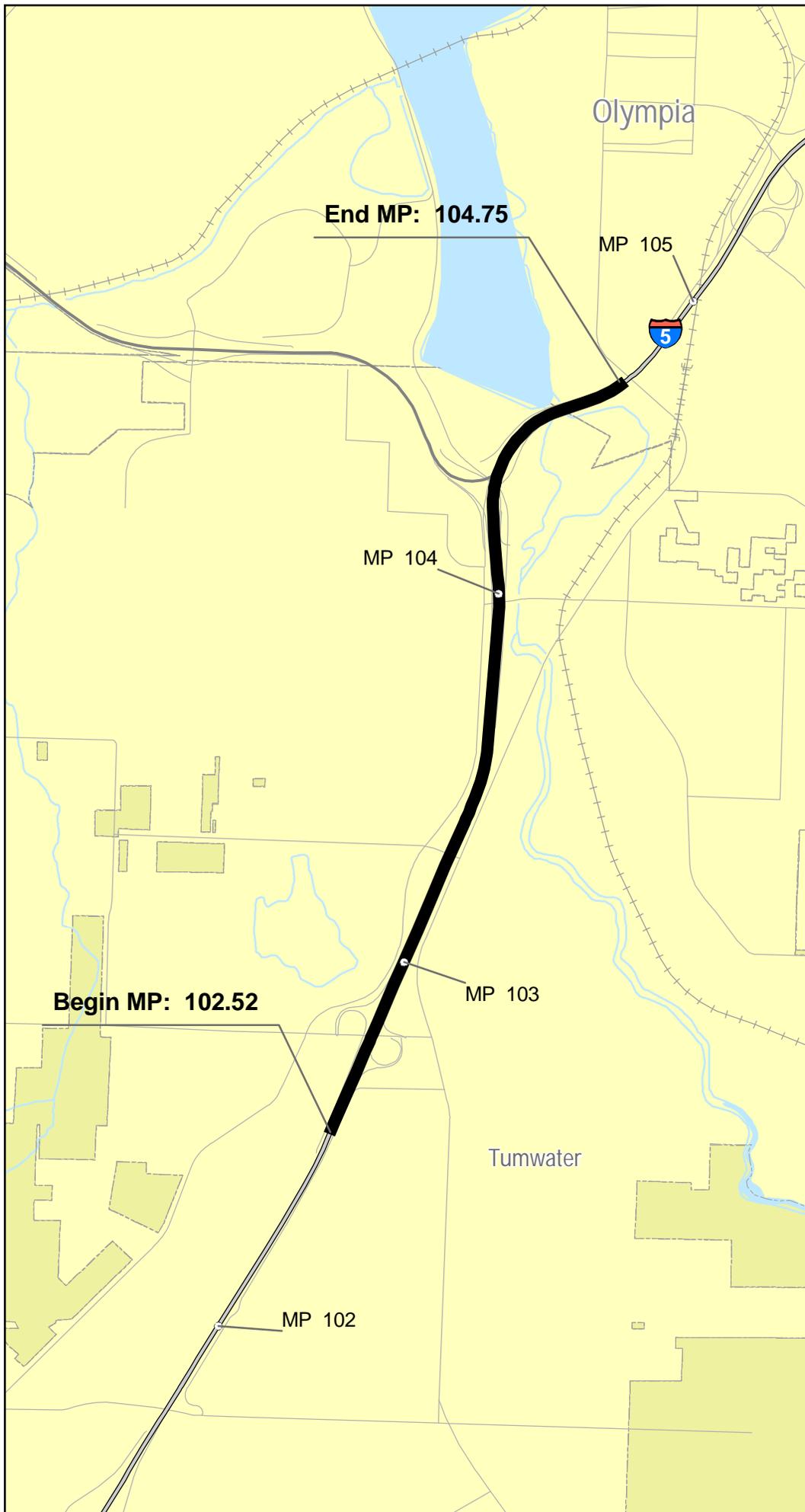


- HSP Corridor Location
- Bridge Replacement Priority**
 - Replacement
 - Seismic
 - Special
 - Scour
 - Painting
 - Miscellaneous
 - Bridge Deck
- Other Bridge Issues**
 - 2 Lane BW Narrow Bridge
 - Restricted Bridge
 - Posted Bridge
 - Vert. Clearance 15.5' Or Less
- Fish Barriers**
 - Require Repair
 - 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
- Urban Area
- County Line

November, 2006

**HSP Corridor Series
Interstate**

Solutions



Other Features

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

November, 2006



DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Capitol Blvd Vicinity To College/Sleater Kinney I/C Vicinity

Segment Number: 5

Route: 5 BARM: 104.82 EARM: 108.06 Length: 3.24
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
7	8	0	0	12	12	4	14	4	22	60	60

Corridor Description:

This segment begins near the Capitol Boulevard Undercrossing and ends near the Lilly Road Undercrossing before the College/Sleater Kinney I/C. This City of Olympia segment has active and abandoned train tracks crossing under I-5. Major employment at the beginning of this segment is State Government with access to the State Capital via Exit 105 City Center. Major employment at the end of this segment are medical facilities such as St. Peter Hospital and Group Health Cooperative located North of I-5 off Lilly Road. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~14 storm water outfalls and ~3 fish passages within this segment of I-5. Two of the fish passages require repair.

Previously Identified Bottlenecks/Chokepoints:

There are **four** conceptual solutions in this segment. They are ramp metering between Trospen Rd I/C and Thurston/Pierce County Line, install a double left turn at the I-5 Northbound off ramp to Westbound Pacific Avenue at the ramp terminal, **study feasibility of** collector-distributor (C-D) or auxiliary lanes from Pacific Avenue I/C to Martin Way I/C, and a Southbound acceleration taper and/or auxiliary lane on Sleater Kinney to allow free right turn movement.

Known Restrictions:

The steep terrain near the Capitol Boulevard Undercrossing and Capitol Lake are likely to restrict widening in this vicinity. There is a major traffic weave at the neck of the Capitol Boulevard Arch Bridge that produces traffic queuing Southbound. There are short sections where the inside shoulders are narrow (less than 6-ft effective). The I-5 Class 1 bike trail, proposed Woodland Trail extension, and nearby parks may restrict widening on the right side of I-5.

Studies:

Existing Study Name	Completion Date
---------------------	-----------------

High Capacity Transit Feasibility Study 1995

Current/Underway: Study Name	Expected Completion Date
---------------------------------	--------------------------

West Olympia Access and Circulation Study 2008

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy Vehicle and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:

NONE

Planned:

I-5 High Occupancy Vehicle (HOV) Feasibility Study, freight lane, high speed ground transportation (HSGT) or commuter rail, high capacity transit (HCT to Eastside St), transportation demand management (TDM), Intelligent Transportation System (ITS), and a 80-stall park and ride lot near Lilly Road.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Capitol Blvd Vicinity to College/Sleater Kinney I/C Vicinity

Segment Number: 5

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300580B	I-5/Capitol Blvd. Bridge - Paint
300590E	I-5/Capitol Blvd. Overcrossing - Bridge Rail

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
NONE	

Deficiencies:

Current

The I-5/US 101 Interchange on/off ramp weaving causes PM peak traffic queuing. The most significant queue/shock wave is from the I-5 Southbound off ramp to US 101 (includes effects of on ramp weaving from 14th Ave. and Henderson Blvd.). The next major weaving deficiency is the on ramp from Plum Street to Northbound I-5 that generates queues/shock waves between the Plum Street on ramp and Pacific Avenue off ramp.

Future (5-10 years)

Mainline I-5 will fail within 5 years with the Southbound direction being congested between US 101 and Exit 105 City Center with the PM peak hour spreading.

Future (15-20 years)

Concrete Data

(lane miles calculated exclude bridges, other major gaps, add/drop lanes)	Lane Miles	BARM	EARM	BARM	EARM
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:					
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Hot Mix Asphalt (HMA)

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Capitol Blvd Vicinity to College/Sleater Kinney I/C Vicinity

Segment Number: 5

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
107.09	107.09	Double left turn lane on the Northbound off ramp to Westbound Pacific Avenue at the ramp terminal along with other intersection improvements.		30% placeholder	\$3.533 million
107.51	109.19	Study Collector-Distributor lane or auxiliary lane feasibility from Pacific Avenue I/C to Martin Way I/C and purchase right-of-way.		30% placeholder	\$23.823 million (~\$40 million if no deviations)
107.93	107.93	Southbound acceleration taper and/or auxiliary lane on Sleater Kinney to allow free right turn movement from the Northbound (EB direction) off ramp onto Southbound Sleater Kinney.		30% placeholder	\$0.945 million
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
104.82	106.17	High Capacity Transit Southbound off ramp and bridge to Eastside Street. Consider/study extending this proposed facility as a high-level ribbon ramp structure to US 101 off ramp for transit and/or HOV use (Exit 105 City Center/Plum connecting to Eastside Street and possibly into off ramp into US 101).			
		Implement Olympic Region ITS Master Plan			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
104.82	106.17	Study feasibility of adding a deck or lid over I-5 in this vicinity			
107.94	107.94	New 80 stall park and ride lot near Lilly Road undercrossing.			

Future Corridor Vision:

A Phase 1, I-5 High Occupancy Vehicle (HOV) Feasibility Study is needed to clarify a future corridor vision. One scenario is implementation of the Olympic Region Intelligent Transportation System (ramp metering, etc.). Another alternative is a new commerce corridor for trucks East of I-5 between I-90 in King County and Centralia/Chehalis in Lewis County. An offshoot idea to the commerce corridor could involve an Eastern ring road or bypass within or close to the urban boundaries of Tumwater, Olympia, and Lacey (SR 121/93rd I/C in Tumwater to Nisqually I/C North of Lacey). Options could include commuter train with high speed ground transportation (HSGT) between Portland and Seattle and redirecting slower Freight Access by Rail (FAR) to other nearby railroad tracks in Thurston County. Creating a deck or Olympia lid for high capacity transit (HCT) and express service along I-5 could be an alternative for consideration too (e.g. I-10 deck in Phoenix, AZ).

**HSP Corridor Series
Interstate**

Characteristics

 HSP Corridor Location

Other Features

 U.S. Interstate

 U.S. Highway

 State Route

 Local Roads

 Railroad

 Wetlands

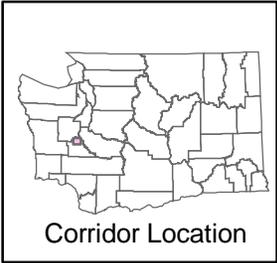
 Tribal Lands

 Military Reservation

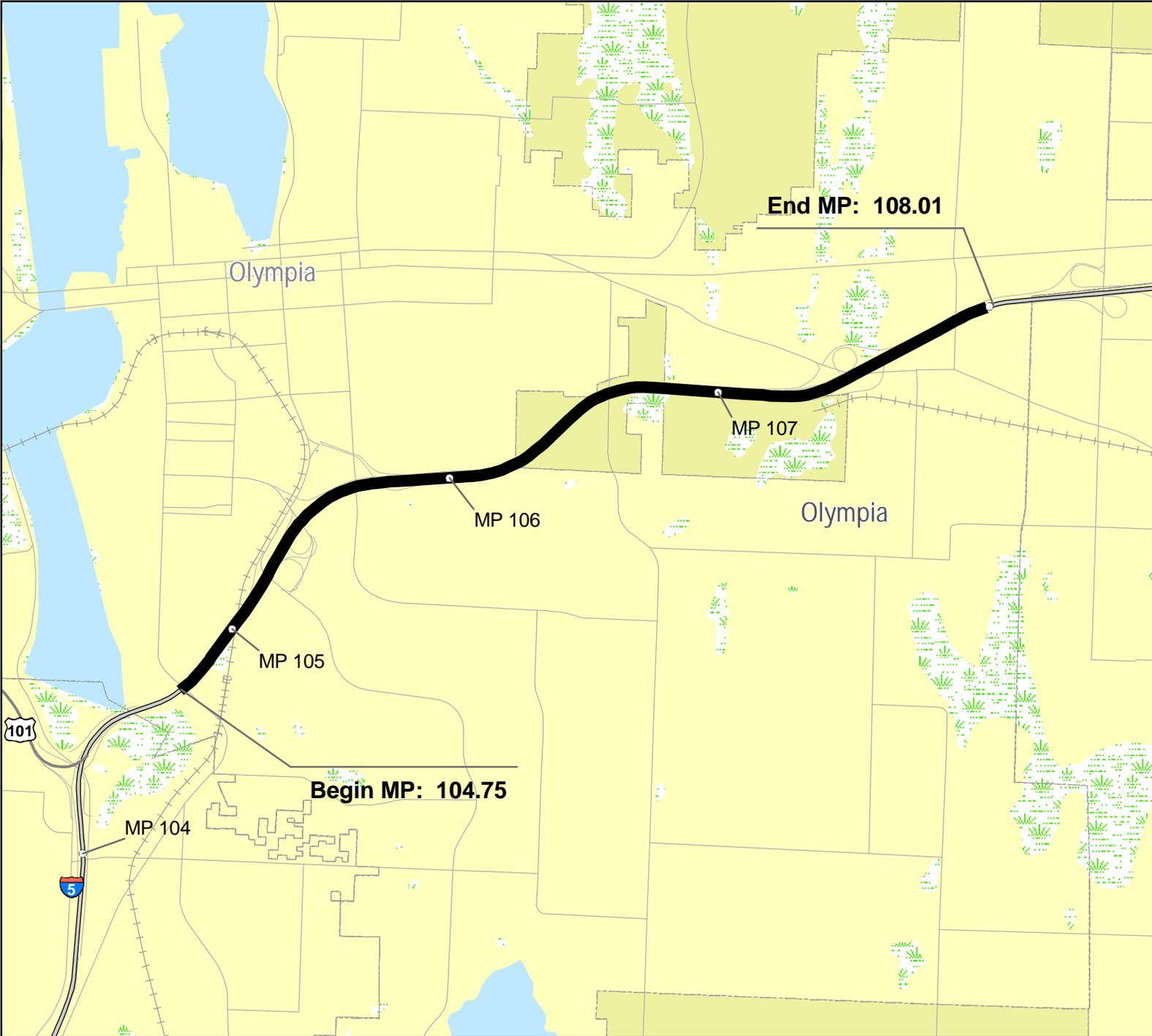
 City Limits

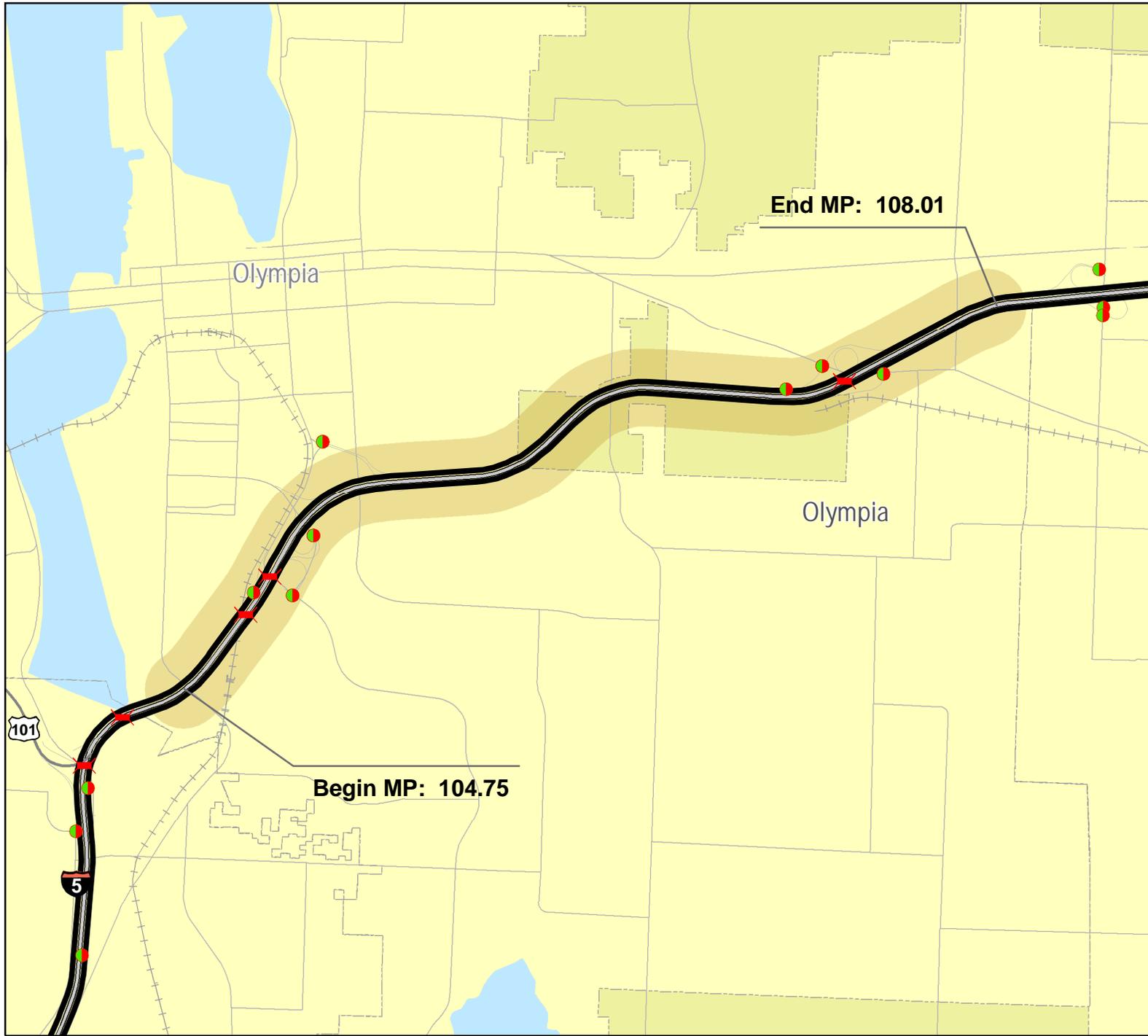
 Urban Area

 County Line



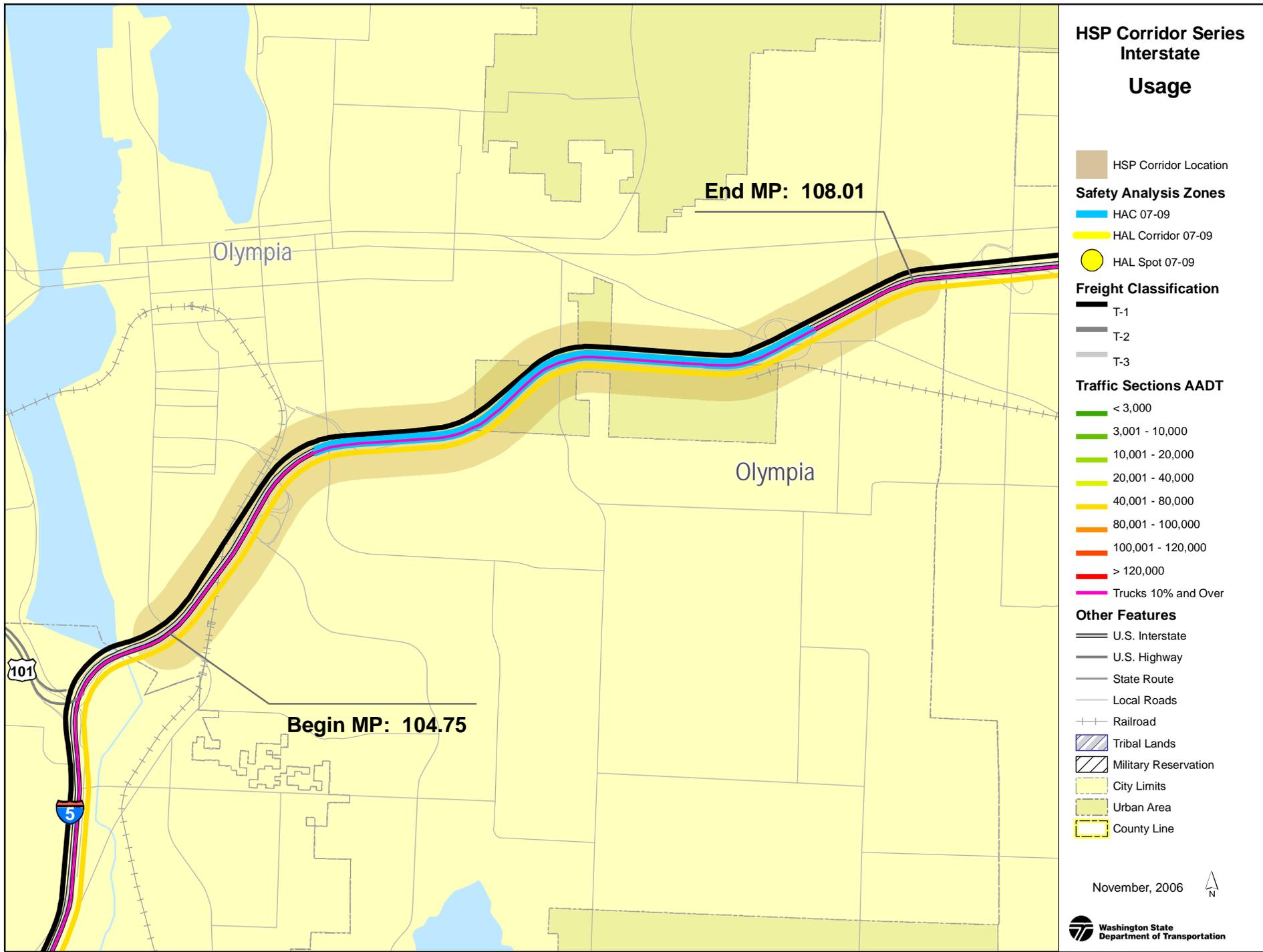
November, 2006

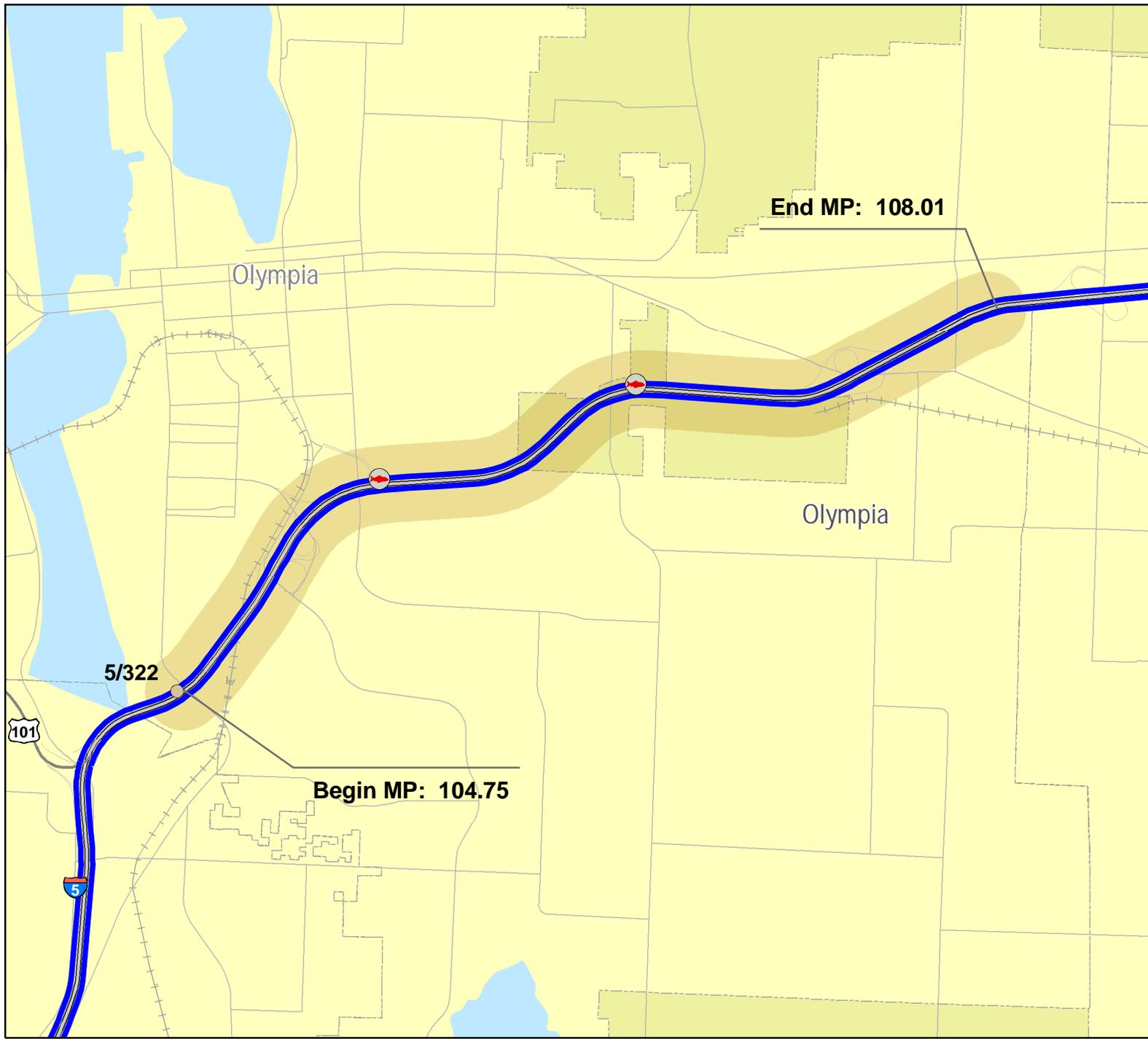




**HSP Corridor Series
Interstate
Assets**

- HSP Corridor Location
- Assets**
- Signalized Intersection
- X At Grade Railroad Crossings
- ⚡ Bridge
- ⚓ Ferry Terminals
- Ferry Route
- P&R Park and Ride
- W Weigh Stations
- R 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





HSP Corridor Series Interstate 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
- Urban Area
- County Line

November, 2006

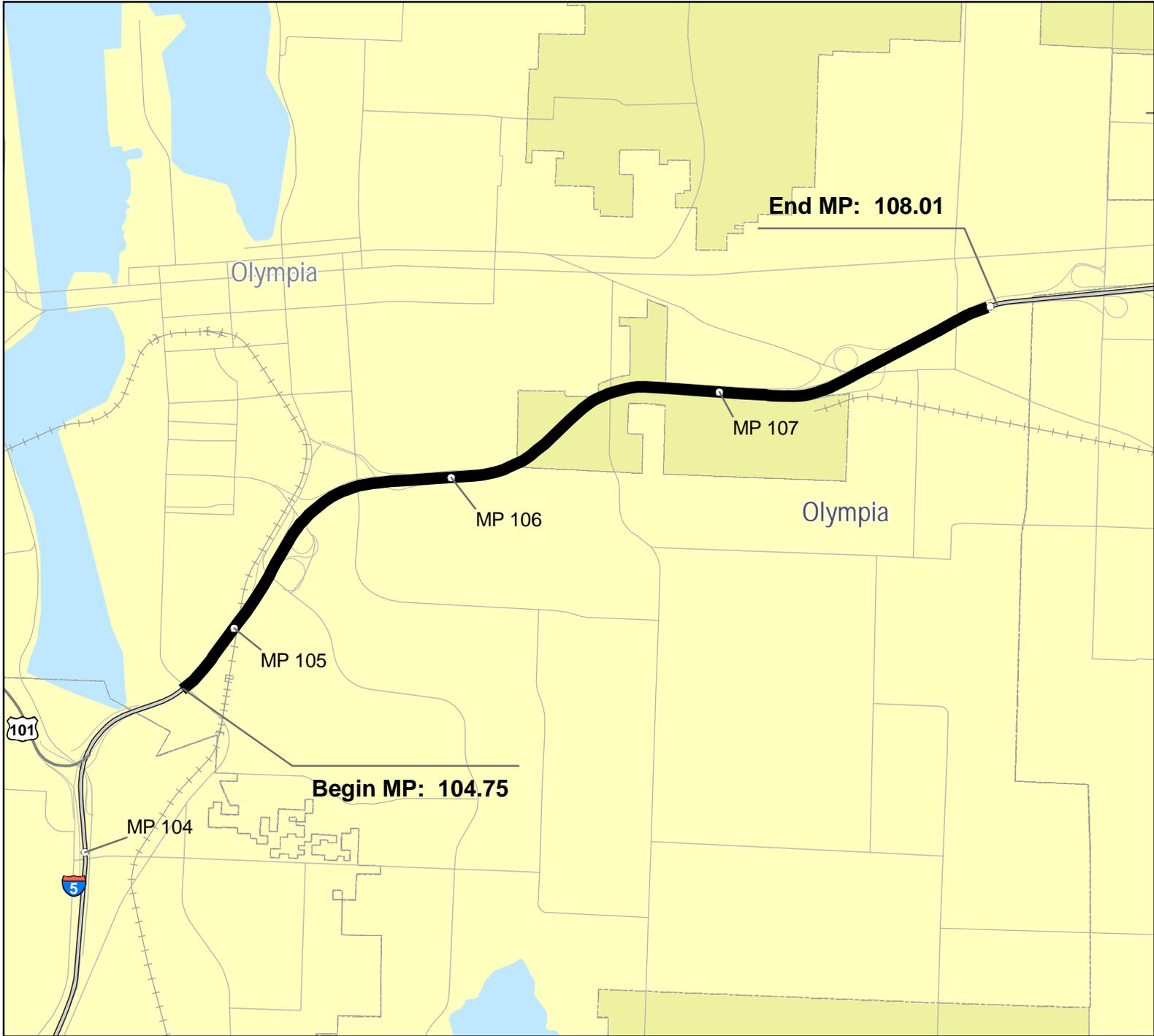


**HSP Corridor Series
Interstate**

Solutions

Other Features

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



November, 2006



DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: College/Sleater Kinney Vicinity to Martin Way Vicinity

Segment Number: 6

Route: 5 BARM: 108.06 EARM: 109.59 Length: 1.53

Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	7	0	0	12	12	6	24	22	40	60	60

Corridor Description:

This rolling terrain segment begins south of the College/Sleater Kinney I/C (near the City of Olympia and City of Lacey incorporation boundary) and ends north of the Martin Way I/C in Lacey. The South Sound Mall and other large retail developments are located around the two interchanges. Saint Martins College and the Department of Ecology Headquarters are also nearby. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There is one storm water outfall at the Martin Way I/C Undercrossing.

Previously Identified Bottlenecks/Chokepoints:

There are four conceptual solutions in this segment. They are ramp metering between Trosper Road I/C and Thurston/Pierce County Line, collector-distributor (C-D) or auxiliary lanes from Pacific Avenue I/C to Martin Way I/C, a northbound deceleration lane into the Martin Way I/C off ramp, and ramp terminal improvements (double right) at the Martin Way I/C southbound off/on intersection.

Known Restrictions:

The Exit 108B Northbound off ramp to Sleater Kinney has a sharp ramp radii and deceleration lane appears short. The Southbound off ramp to Sleater Kinney also has a sharp ramp radii and short deceleration lane.

Studies:

Existing Study Name	Completion Date
High Capacity Transit Feasibility Study	1995

Current/Underway: Study Name	Expected Completion Date
I-5 Martin Way Interchange Predesign for \$250,000 under PN 5102.	2007

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy Vehicle and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:

NONE

Planned:

I-5 High Occupancy Vehicle (HOV) Feasibility Study, freight lane, high speed ground transportation (HSGT) or commuter rail, high capacity transit (HCT) to 6th between Sleater Kinney and College, transportation demand management (TDM), Intelligent Transportation System (ITS), collector-distributor (C-D) lanes, and expand the existing park and ride lot near Martin Way I/C by 60 stalls.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: College/Sleater Kinney Vicinity to Martin Way Vicinity

Segment Number: 6

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300591B	I-5/Chehalis Western Trail Pedestrian Bridge - New Structure
300539A	I-5/Martin Way O'xing - Bike Lanes

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
NONE	

Deficiencies:

Current

There are long traffic queues at the Martin Way I/C off ramps. The longest queues are at the southbound off ramp to Martin Way. These queues typically extend back to the I-5 shoulder in the PM peak period. The Martin Way I/C signalized ramp terminals are over capacity.

Future (5-10 years)

Mainline I-5 will fail within 5 years with the PM peak hour spreading.

Future (15-20 years)

Concrete Data

<i>(lane miles calculated exclude bridges, other major gaps, add/drop lanes)</i>	<i>Lane Miles</i>	<i>BARM</i>	<i>EARM</i>	<i>BARM</i>	<i>EARM</i>
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:	2.34	109.24	109.59		
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Hot Mix Asphalt (HMA) between College/Sleater Kinney I/C and Martin Way I/C. North of the Martin Way I/C, mainline I-5 is Portland Cement Concrete Pavement (PCCP)

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: College/Sleater Kinney Vicinity to Martin Way Vicinity

Segment Number: 6

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
108.71	109.01	Northbound I-5 deceleration lane into the Martin Way I/C off ramp.		30% placeholder	\$2.094 million
109.15	109.15	The Martin Way O'xing - Bike Lanes project could be modified/supplemented to add one additional lane under I-5 on Martin Way to double the length of left turn storage and place bike path behind bridge columns.			
109.26	109.26	Expand existing Martin Way park and ride lot by 60 stalls (expansion may be greater than 60 stalls due to closure of the Marvin Road park and ride lot). A "transit only" right turn drop lane between the existing Martin Way park and ride lot and the I-5 Northbound on ramp could also be considered in partnership with the City of Lacey along with other options.			
109.41	109.41	Southbound I-5 off/on ramp terminal improvements at Martin Way I/C (creating double right turn lanes at the off ramp terminal toward College Street).		30% placeholder	\$2.554 million
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
108.46	108.96	High Capacity Transit Ramps (i.e. northbound off and southbound on) between Sleater Kinney Undercrossing and College Street Undercrossing (in median).			
		Implement Olympic Region Intelligent Transportation System (ITS) Master Plan			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
		Need phase 1 of the I-5 High Occupancy Vehicle (HOV) and/or			

Future Corridor Vision:

The congested I-5/Martin Way I/C may become an urban interchange with double left and double right ramp turning movements. I-5 mainline would be widened for inside high occupancy vehicle (HOV) lanes and/or outside collector-distributor (C-D) lanes. If a new Carpenter Road I/C is pursued to the north, it may require collector-distributor (C-D) lanes through the Martin Way I/C.

**HSP Corridor Series
Interstate**

Characteristics

 HSP Corridor Location

Other Features

 U.S. Interstate

 U.S. Highway

 State Route

 Local Roads

 Railroad

 Wetlands

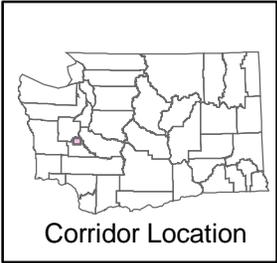
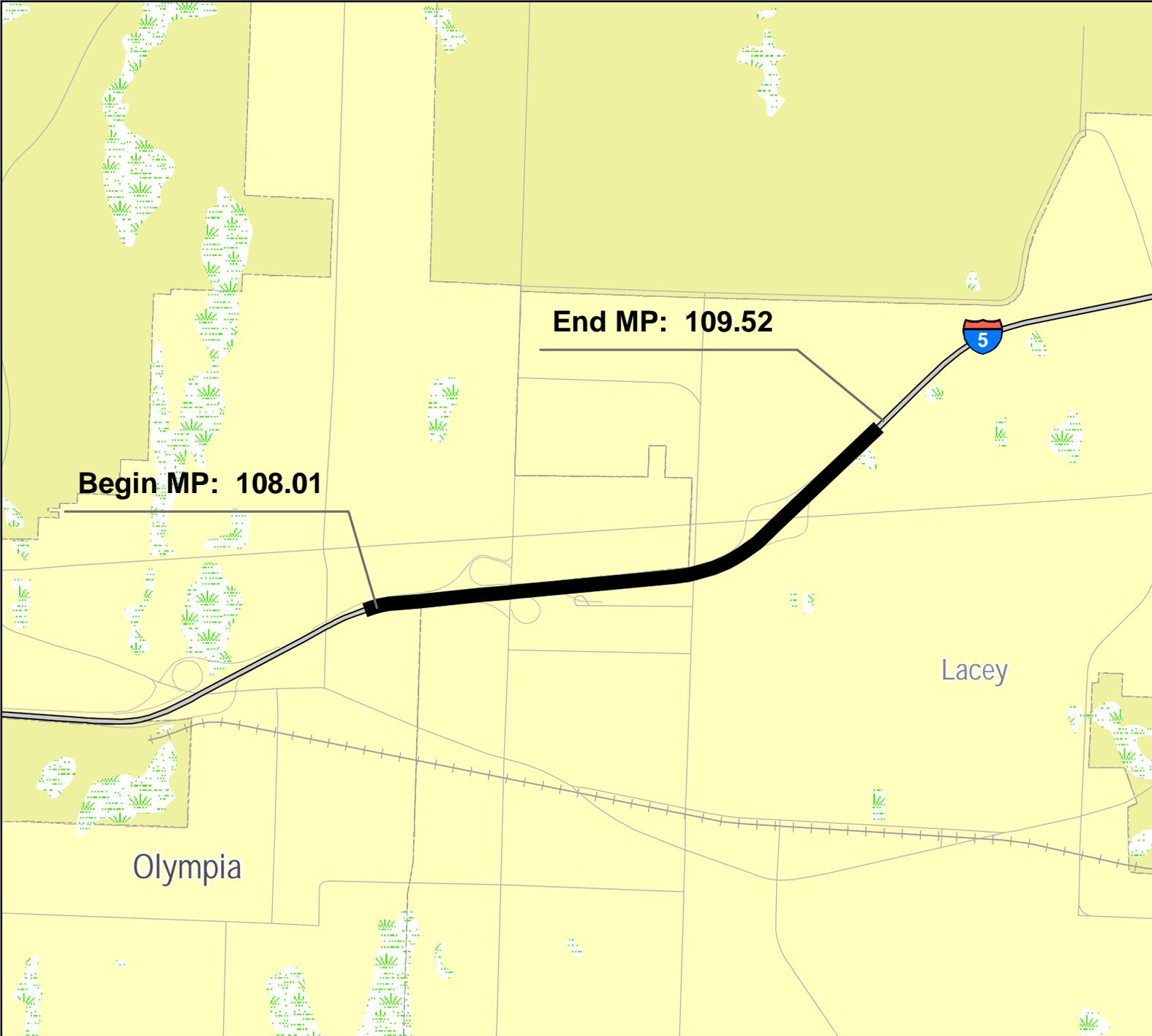
 Tribal Lands

 Military Reservation

 City Limits

 Urban Area

 County Line



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HSP Corridor Series Interstate 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

HSP Corridor Series Interstate Usage

HSP Corridor Location

Safety Analysis Zones

- HAC 07-09
- HAL Corridor 07-09
- HAL Spot 07-09

Freight Classification

- T-1
- T-2
- T-3

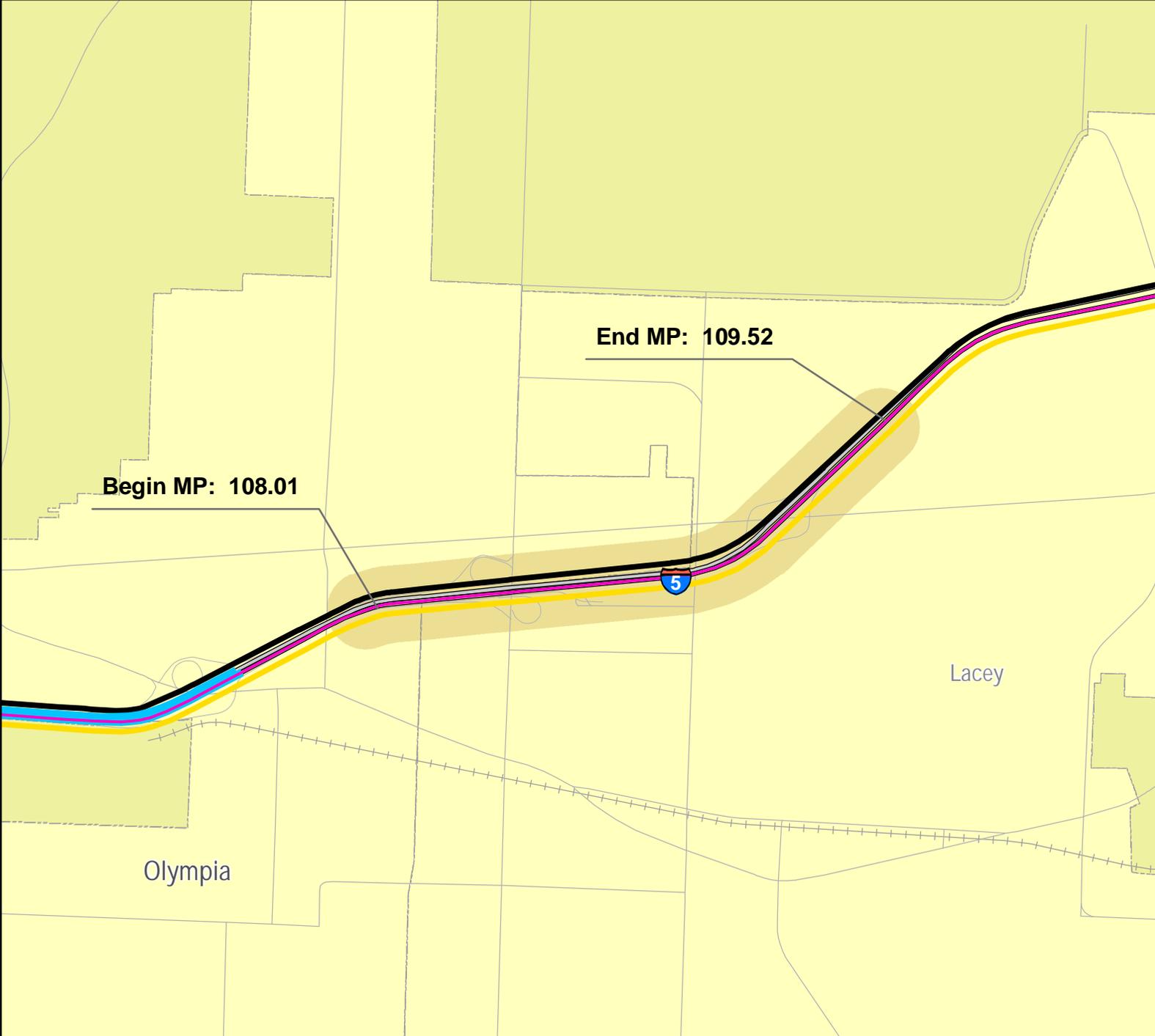
Traffic Sections AADT

- < 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

November, 2006





HSP Corridor Series Interstate 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
- Urban Area
- County Line

November, 2006

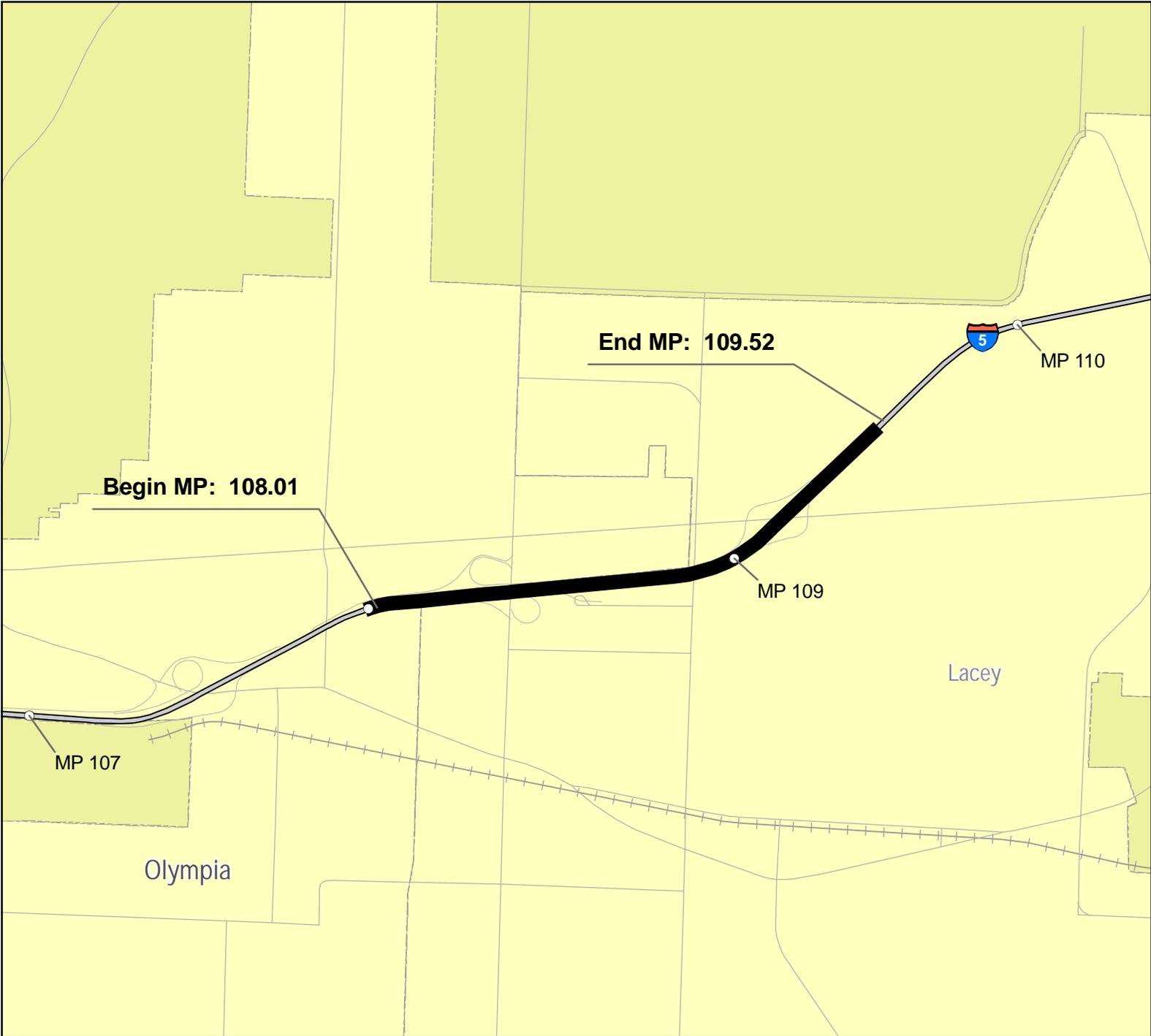


**HSP Corridor Series
Interstate**

Solutions

Other Features

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



November, 2006



DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Martin Way I/C Vicinity to Marvin Road (SR 510) I/C Vicinity

Segment Number: 7

Route: 5 BARM: 109.59 EARM: 112.83 Length: 3.24
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	6	0	0	12	12	6	10	40	140	60	60

Corridor Description:

This rolling terrain segment begins north of the Martin Way I/C and ends north of the Marvin Road (SR 510) I/C in the City of Lacey. There are large retail developments (Wal-Mart, Costco, etc.) and large residential subdivisions located south of the Marvin Road (SR 510) I/C and industrial development (Target Distribution Center and industrial park) and large residential subdivisions located north of the Marvin (SR 510) I/C. South Puget Sound Community College also has satellite classrooms and offices near the I/C. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~4 storm water outfalls and one fish passage within this segment of I-5. There is a covered landfill and the Thurston County Waste and Recovery Center in the northeast quadrant of the Marvin Road (SR 510) I/C. The Ostroms Mushroom Facility is south of I-5 and east of SR 510. There are known leaking underground storage tank locations (LUST) from nearby gas stations along SR 510 in the vicinity of the Marvin (SR 510) and Martin Way intersection. Siltation into Woodland Creek Wetlands located north of Martin Way on the right side has been a concern for developments.

Previously Identified Bottlenecks/Chokepoints:

There is one conceptual solution in this segment. The proposal is for an exclusive right turn lane on the I-5 Southbound (Westbound direction) off ramp to Marvin Road with an acceleration lane to the north on Marvin Road. The existing right turn could then be restriped as a second left (with through movement to the I-5 SB on ramp).

Known Restrictions:

Widening of mainline I-5 at the Carpenter Road undercrossing and the Marvin Road (SR 510) undercrossing are impacted by the existing bridge columns. Woodland Creek and associated wetlands located north of the Martin Way I/C may be a restriction, particularly for extending the Class I separated bike facility to the north.

Studies:

Existing Study Name	Completion Date
---------------------	-----------------

Access Point Revision Report, I-5/SR 510 Marvin Road Interchange, by Harding Lawson Associates. This report was 1997

Current/Underway: Study Name	Expected Completion Date
------------------------------	--------------------------

Carpenter Road Interchange Feasibility Study sponsored by the City of Lacey. This study is proposed to be part of the 2007

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:
NONE

Planned:

I-5 High Occupancy Vehicle (HOV) Feasibility Study, freight lane, high speed ground transportation (HSGT) or commuter rail, transportation demand management (TDM), Intelligent Transportation System (ITS), collector-distributor (C-D) lanes if Carpenter Road I/C pursued, and a new 400+ stall park and ride lot near Marvin Road (SR 510) I/C.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Martin Way I/C Vicinity to Marvin Road (SR 510) I/C Vicinity

Segment Number: 7

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300518D	I-5/14th Ave. Thompson Place - Noise Wall
300518C	I-5/Queets Dr. East Tanglewild - Noise Barrier
300507B	I-5/McAllister Creek - Stormwater

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
NONE	

Deficiencies:

Current

There are long traffic queues developing at the Marvin Road (SR 510) off ramps. The longest queues are at the Southbound (Westbound direction) off ramp to Marvin Road. These queues for vehicles desiring to turn left are beginning to extend back to the I-5 shoulder in the PM peak period.

Future (5-10 years)

The existing Marvin Road (SR 510) I/C phase 1 work was forecast to become deficient in 2008. Mainline I-5 will fail within 5 years with the PM peak hour spreading.

Future (15-20 years)

The proposed ultimate Marvin Road (SR 510) I/C phase 2 single point urban interchange (SPUI) will have failing ramp/mainline merges and diverges in 2018.

Concrete Data

<i>(lane miles calculated exclude bridges, other major gaps, add/drop lanes)</i>	<i>Lane Miles</i>	<i>BARM</i>	<i>EARM</i>	<i>BARM</i>	<i>EARM</i>
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:	19.5	<i>109.59</i>	<i>112.83</i>		
Number of Low Priority Concrete Miles:					

Comments:

The deceleration lane on Northbound I-5 exiting to Marvin Road (SR 510) I/C appears to be Hot Mix Asphalt (HMA). Mainline I-5 in this segment is Portland Cement Concrete Pavement (PCCP) with recent dowel replacement in the outside travel lane.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Martin Way I/C Vicinity to Marvin Road (SR 510) I/C Vicinity

Segment Number: 7

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
112.32	112.32	Ramp terminal improvements. This project will construct an exclusive right turn lane on the I-5 Southbound (Westbound direction) off ramp to Marvin Road. Dropping the right turn lane behind the mast arm in the NE quadrant into an acceleration lane and taper for free right turns may minimize traffic signal impacts. The existing right turn would then be restriped as a second left (with through movement to the I-5 SB on ramp). It may be cost effective to widen to the inside of the ramp rather than to the outside of the existing ramp. <i>Consider an auxiliary Southbound climbing lane from the Nisqually on ramp to the Marvin Road Undercrossing.</i>		30% placeholder	\$3.967 million (~\$10 million if HMA climbing lane included or ~\$25 million if PCCP climbing lane)
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
112.01	112.01	Access Point Decision Report Phase 2 work. This project would construct a single point urban interchange at the Marvin Road (SR 510) Interchange, relocate the Northbound on-ramp to Quinault, and possibly ramp meter the on-ramps.			
112.01	112.01	Install 400+ park and ride lot in the vicinity of the Marvin Road (SR 510) I/C.			
		Implement Olympic Region Intelligent Transportation System (ITS) Master Plan.			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
		Need phase 1 of the I-5 High Occupancy Vehicle (HOV) and/or			

Future Corridor Vision:

The congested Marvin Road (SR 510) I/C will become a single point urban interchange with bridge widening and ramp relocation. I-5 mainline would be widened for inside high occupancy vehicle (HOV) lane and/or outside collector-distributor (C-D) lanes. If a new Carpenter Road I/C is pursued to the south, it may require collector-distributor (C-D) lanes through the Marvin Road (SR 510) I/C. If a Carpenter Road I/C is not pursued there may be a need for additional auxiliary lanes between on and off ramps to improve weaving, merging, and diverging levels of service.

**HSP Corridor Series
Interstate**

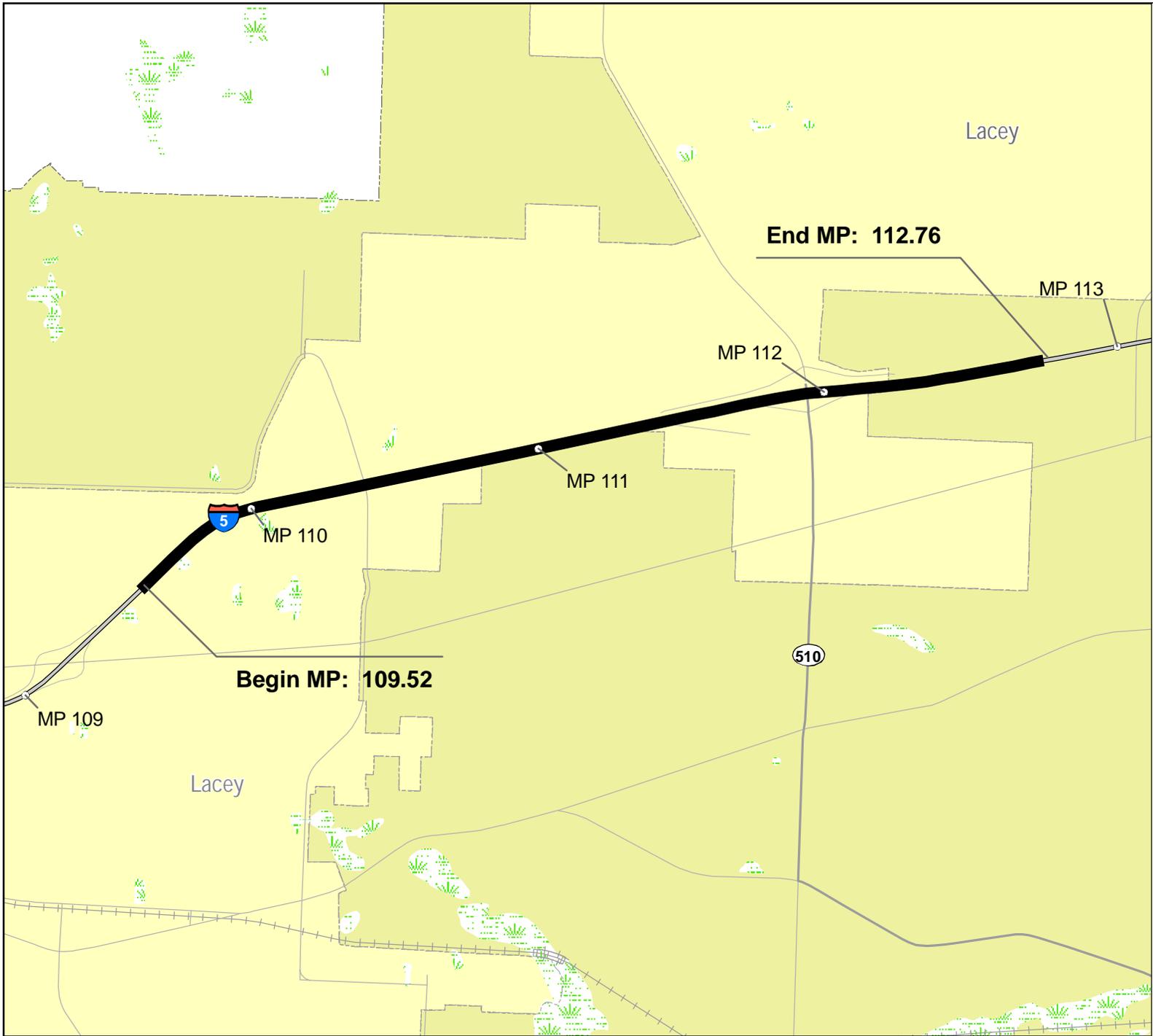
Characteristics

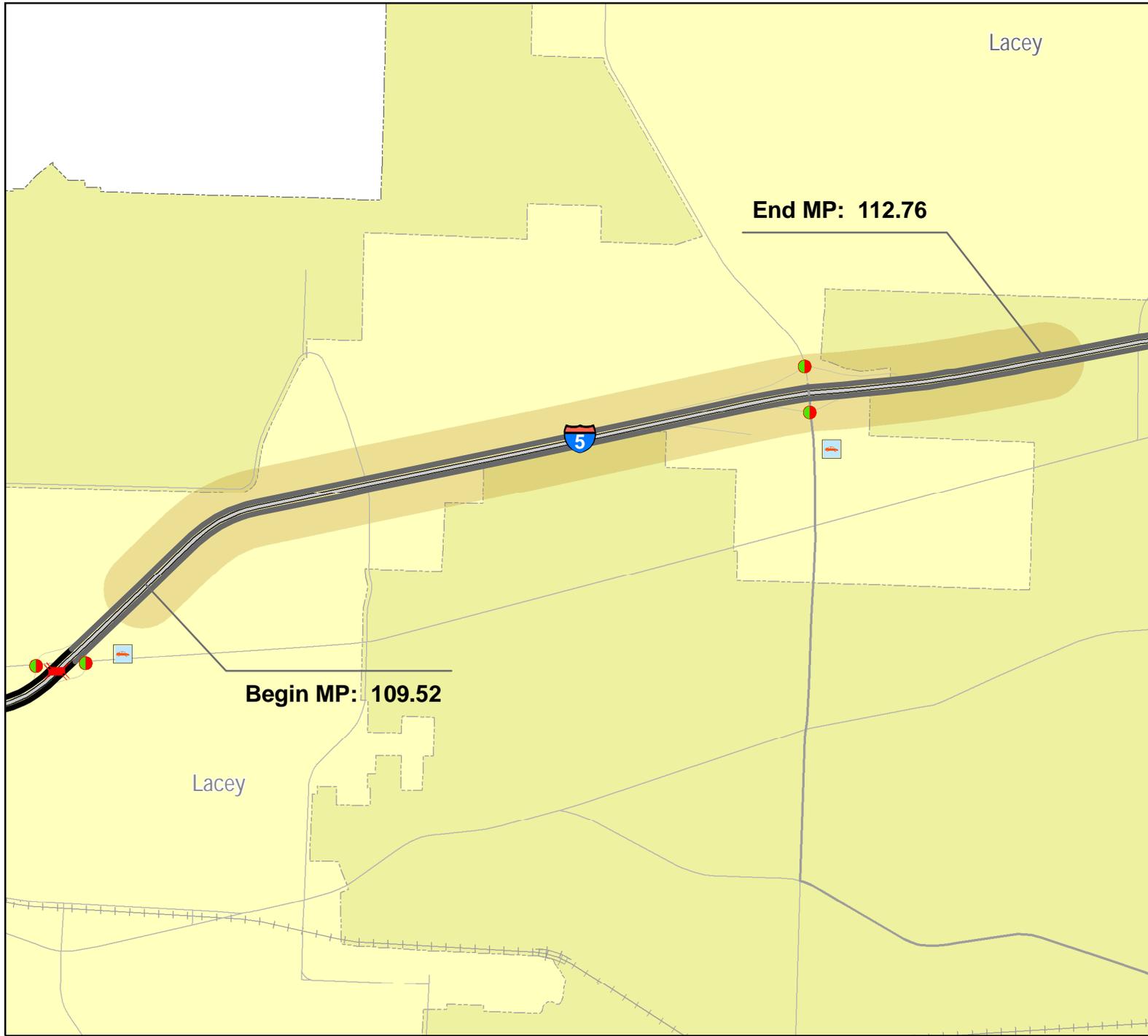
Other Features

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



November, 2006



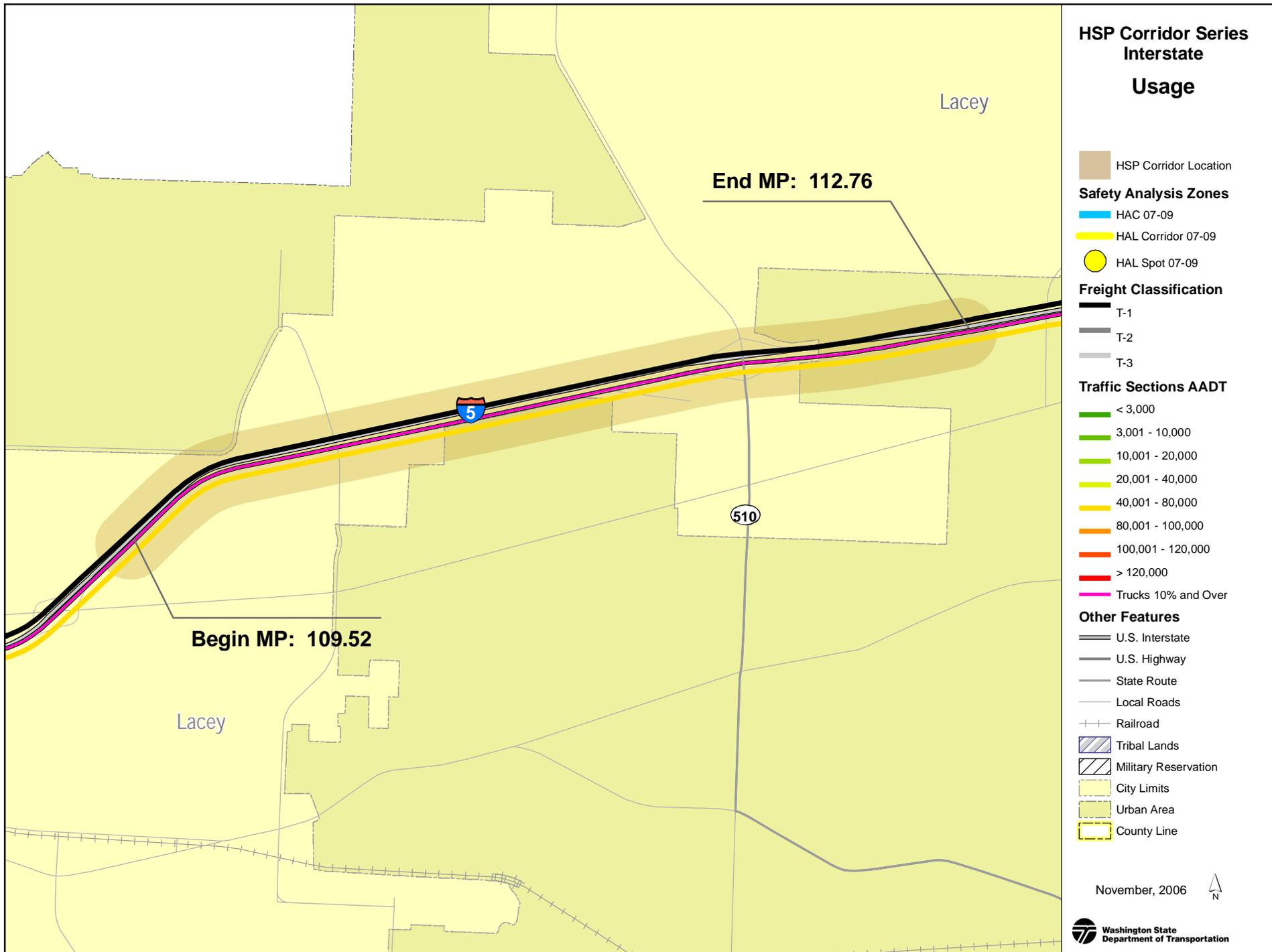


HSP Corridor Series Interstate Assets

- 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

November, 2006





HSP Corridor Series Interstate 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

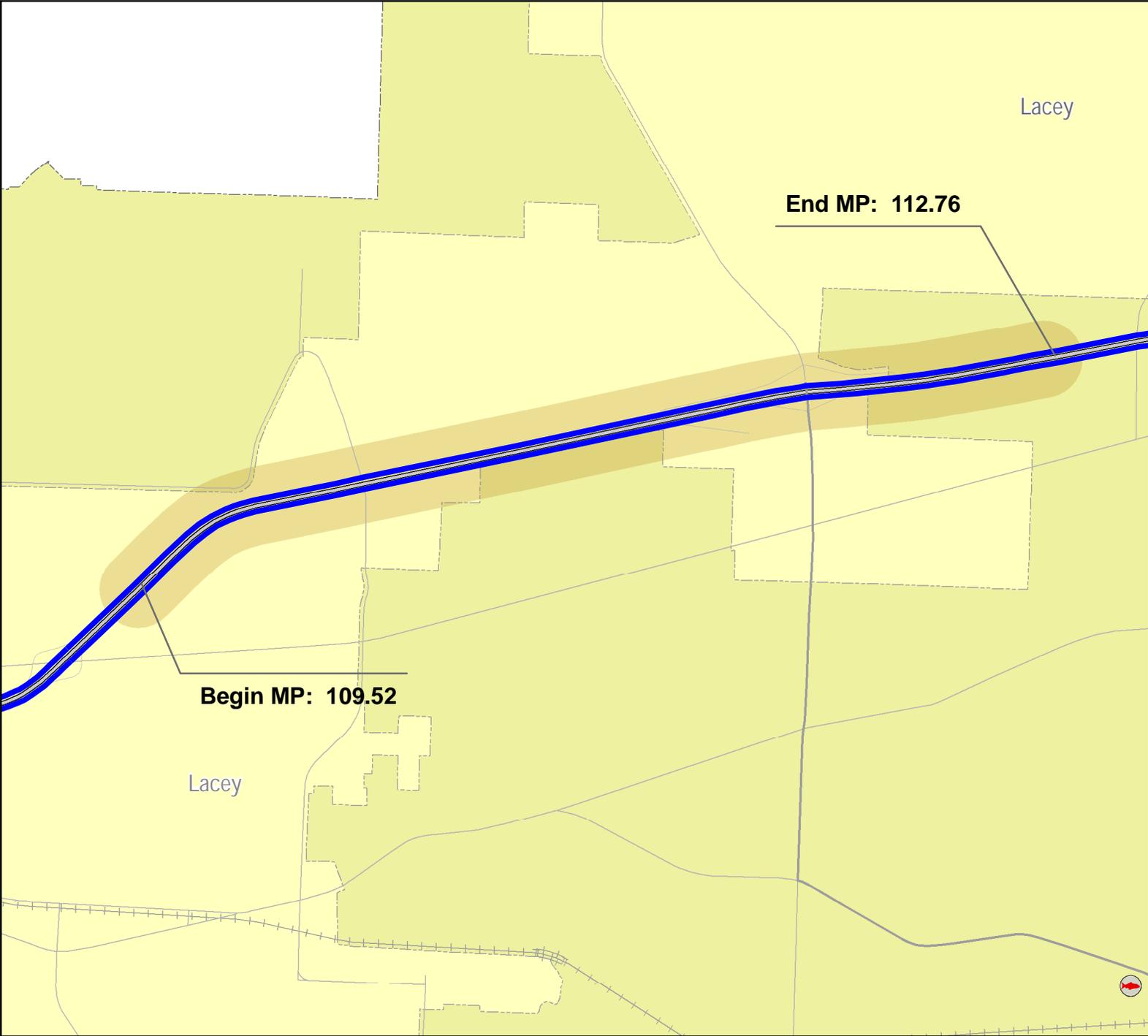
Unstable Slope

- ▲ 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
- Urban Area
- County Line



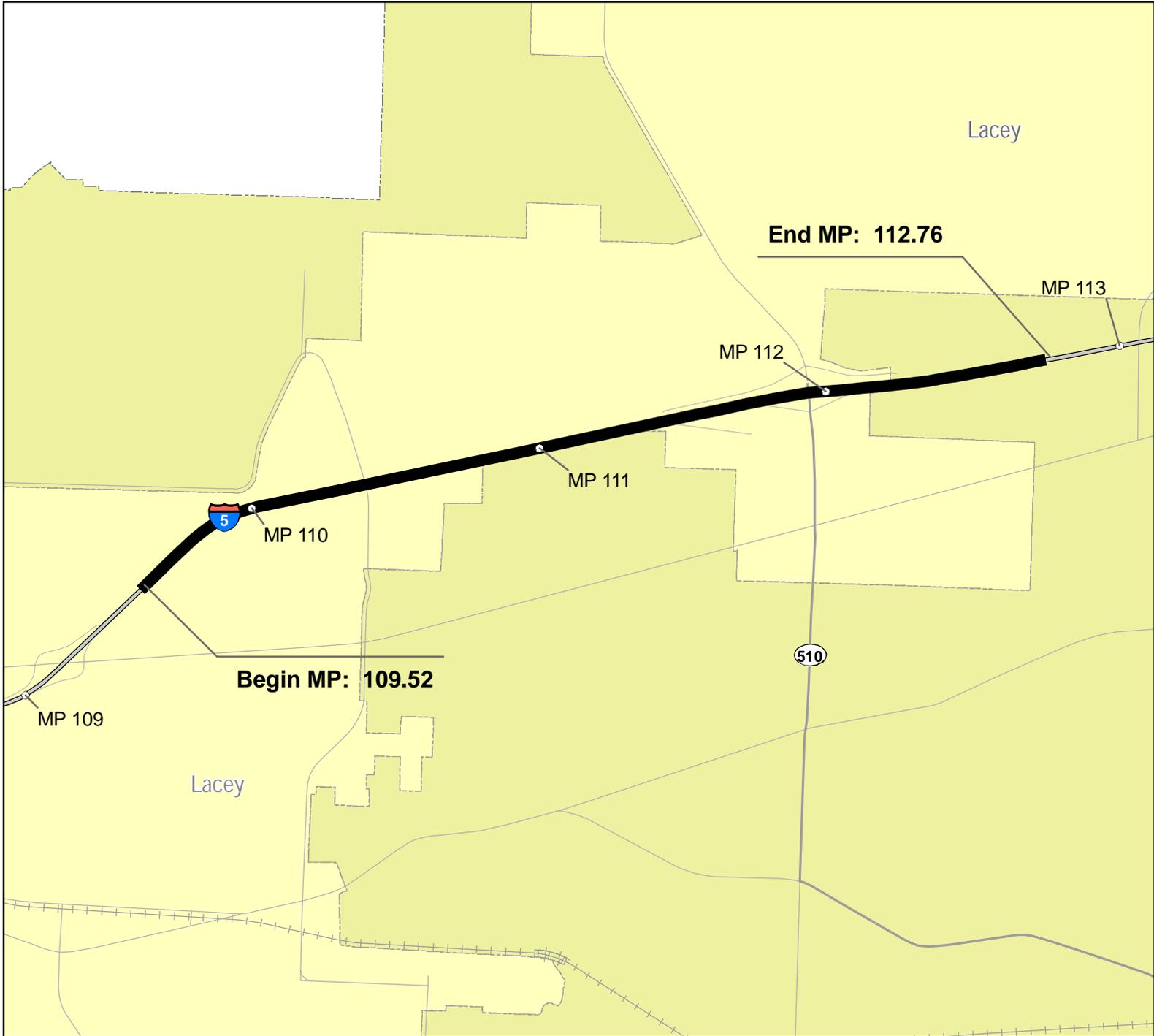
November, 2006

**HSP Corridor Series
Interstate**

Solutions

Other Features

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



November, 2006



DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Marvin Road (SR 510) I/C Vicinity to Nisqually I/C Vicinity

Segment Number: 8

Route: 5 BARM: 112.83 EARM: 114.93 Length: 2.1
 Region: Olympic County: Thurston

Number of GP Lanes		Number of HOV Lanes		Lane Width		Shoulder Width		Median Width		Posted Speed	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	6	0	0	12	12	6	10	28	40	60	60

Corridor Description:

This rolling terrain segment begins north of Marvin Road (SR 510) I/C and ends north of the Nisqually I/C west of the Nisqually River. A steep hill and the Nisqually Basin restrict development in the north half of this 2.1 mile segment. There is a wildlife refuge and farmlands in the Nisqually Basin that are accessed via the Nisqually I/C. I-5 in Thurston County is a T-1 Freight and Goods Transportation Facility that hauled 107,920,000 tons of freight in 2005. I-5 in Thurston County is within the consultation areas of the Chehalis, Cowlitz, Nisqually, Snoqualmie, Squaxin Island, and Yakama Tribes.

Known Environmental Issues:

There are ~3 storm water outfalls and one unstable slope (landslide) within this segment of I-5. Wetlands along the east half of the 2.10 mile segment in the Nisqually Basin will be an environmental issue. The preferred alternative (D) in the Nisqually National Wildlife Refuge (NWR) Final Comprehensive Conservation Plan and Environmental Impact Statement calls for a potential Refuge boundary expansion of 3,479 acres primarily to the south of I-5 in the basin. The NWR is a category 1 wetland. There have been prior efforts to convert the existing farmlands south of I-5 into wetlands similar to those found north of I-5 in the wildlife refuge. The Nisqually River is a salmon bearing stream of particular importance and the flow

Previously Identified Bottlenecks/Chokepoints:

There is one conceptual solution in this segment for ramp metering between Trosper Road I/C and Thurston/Pierce County Line. However, a second emerging bottleneck/chokepoint may be the steep hill along I-5 Southbound between the I-5 Marvin Road (SR 510) Southbound off ramp and the I-5 Southbound on ramp from Nisqually. This steep hill in combination with high off ramp volumes to Marvin Road may trigger the need for a deceleration lane to improve the diverge level of service or an auxiliary truck climbing lane to allow slower moving vehicles more time to merge from the Nisqually on ramp.

Known Restrictions:

Nisqually I/C Southbound on ramp is located on a steep incline, McAllister Creek Bridges have narrow inside shoulders, and Meridian Road Undercrossing bridge columns may restrict widening. The Nisqually River Bridges, just outside these limits, are steel truss structures that will require replacement when I-5 is widened. Additional right-of-way (ROW) and mitigation for wetland impacts are anticipated to be high (450-ft ROW corridor in Thurston County and a 400-ft ROW corridor in Pierce County with ~100 acres of wetland mitigation in the vicinity of Nisqually Basin for widening I-5 in both Thurston and Pierce Counties)

Studies:

Existing Study Name	Completion Date
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Nisqually National Wildlife Refuge (NWR) Final Comprehensive Conservation Plan and Environmental Impact Statement 2004

Current/Underway: Study Name	Expected Completion Date
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NONE

Recommended: (Identify Purpose, Need, Study Limits, Estimated Time to Complete, and Approximate Cost)

BARM	EARM	Identify Purpose, Need, Study Limits and Estimated Time to Complete	Approximate Cost
98.69	114.93	I-5 High Occupancy and/or Collector-Distributor (C-D) Feasibility Study. Phase 1 would analyze I-5 within the urban boundaries of Tumwater, Olympia, and Lacey. This study is needed because I-5 will be approaching or exceeding capacity in the PM peak within 5 years along portions of the urban interstate. Assume 2 years to complete a feasibility study of this magnitude.	\$2.5 million

HOV/HOT Lanes:

Existing:

NONE

Planned:

I-5 High Occupancy Vehicle (HOV) Feasibility Study, freight lane, high speed ground transportation (HSGT) or commuter rail, transportation demand management (TDM), and Intelligent Transportation System (ITS). A Southbound deceleration or auxiliary lane is an emerging need.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Marvin Road (SR 510) I/C Vicinity to Nisqually I/C Vicinity

Segment Number: 8

Programmed Projects:

Fully Funded: (List the PIN and project title for each project funded through construction)

PIN	Project Title
300507B	I-5/McAllister Creek - Stormwater (bioswales, access road, and retaining wall)
300507E	I-5/McAllister Creek Bridge - Repair (columns)
300522B	I-5/Nisqually River Bridge - Special Repair (steel stringer modification and sealing deck joints)

Not Fully Funded: (List the PIN and project title for each project that is not fully funded through construction)

PIN	Project Title
NONE	

Deficiencies:

Current

The vertical curve in the Southbound direction appears to meet the Design Manual speed reduction warrant and multilane level of service warrant for a Truck Climbing lane. Constructing an auxiliary lane between the Nisqually Southbound (Southwest direction) on ramp and the Marvin Road (SR 510) off ramp would provide this climbing lane, a deceleration lane into the off ramp, and an acceleration lane for the on ramp reducing weaving conflicts.

Future (5-10 years)

Mainline I-5 will fail within 5 years with the PM peak hour spreading.

Future (15-20 years)

Concrete Data

(lane miles calculated exclude bridges, other major gaps, add/drop lanes)	Lane Miles	BARM	EARM	BARM	EARM
Number of High Priority Concrete Miles:					
Number of Medium Priority Concrete Miles:	11.73	112.83	114.93		
Number of Low Priority Concrete Miles:					

Comments:

Mainline I-5 in this segment is Portland Cement Concrete Pavement (PCCP) with recent dowel replacement in the outside travel lane. There is 0.93 lane miles of Hot Mix Asphalt (HMA) in this segment.

DRAFT: Congested Interstate Corridor Report for WA State Highway System Plan

I-5: Marvin Road (SR 510) I/C Vicinity to Nisqually I/C Vicinity

Segment Number: 8

New Solutions:

<i>BARM</i>	<i>EARM</i>	<i>Near-term (Minimum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
112.77	113.77	Southbound climbing lane from the Nisqually on ramp past crest of 3% vertical curve near the Marvin Road (SR 510) I/C. This auxiliary lane would also function as an acceleration lane and deceleration lane from the Nisqually on ramp to the Marvin Road off ramp and help reduce weaving conflicts.			
<i>BARM</i>	<i>EARM</i>	<i>Mid-term (10-years) (Moderate Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
		Implement Olympic Region Intelligent Transportation System (ITS) Master Plan.			
<i>BARM</i>	<i>EARM</i>	<i>Long-term (15-20 years) (Maximum Fix)</i>	<i>Delay Reduction</i>	<i>Accident Reduction</i>	<i>Estimated Cost</i>
		Need phase 1 of the I-5 High Occupancy Vehicle (HOV) and/or			

Future Corridor Vision:

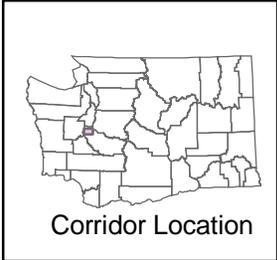
I-5 mainline would be widened for inside high occupancy vehicle (HOV) lanes and/or general purpose lanes. Meridian Road Undercrossing would be replaced due to bridge column spacing. Even though the Nisqually steel truss bridges are outside of this segment they will also require replacement to add mainline capacity. The length of these new bridges are likely to be significantly longer extending into this segment. There have been discussions about removing fill, dikes, etc. to allow the path of the Nisqually River to not be restricted and to have farmlands south of the Nisqually National Wildlife Refuge restored to wetlands (See National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement with a record of decision adopting Alternative D in November 1, 2004). A future 450-ft wide right-of-way corridor is anticipated in this segment due to cuts and fills associated with future widening. Widening I-5 in wetlands could result in ~100 acres or more of wetland mitigation.

**HSP Corridor Series
Interstate**

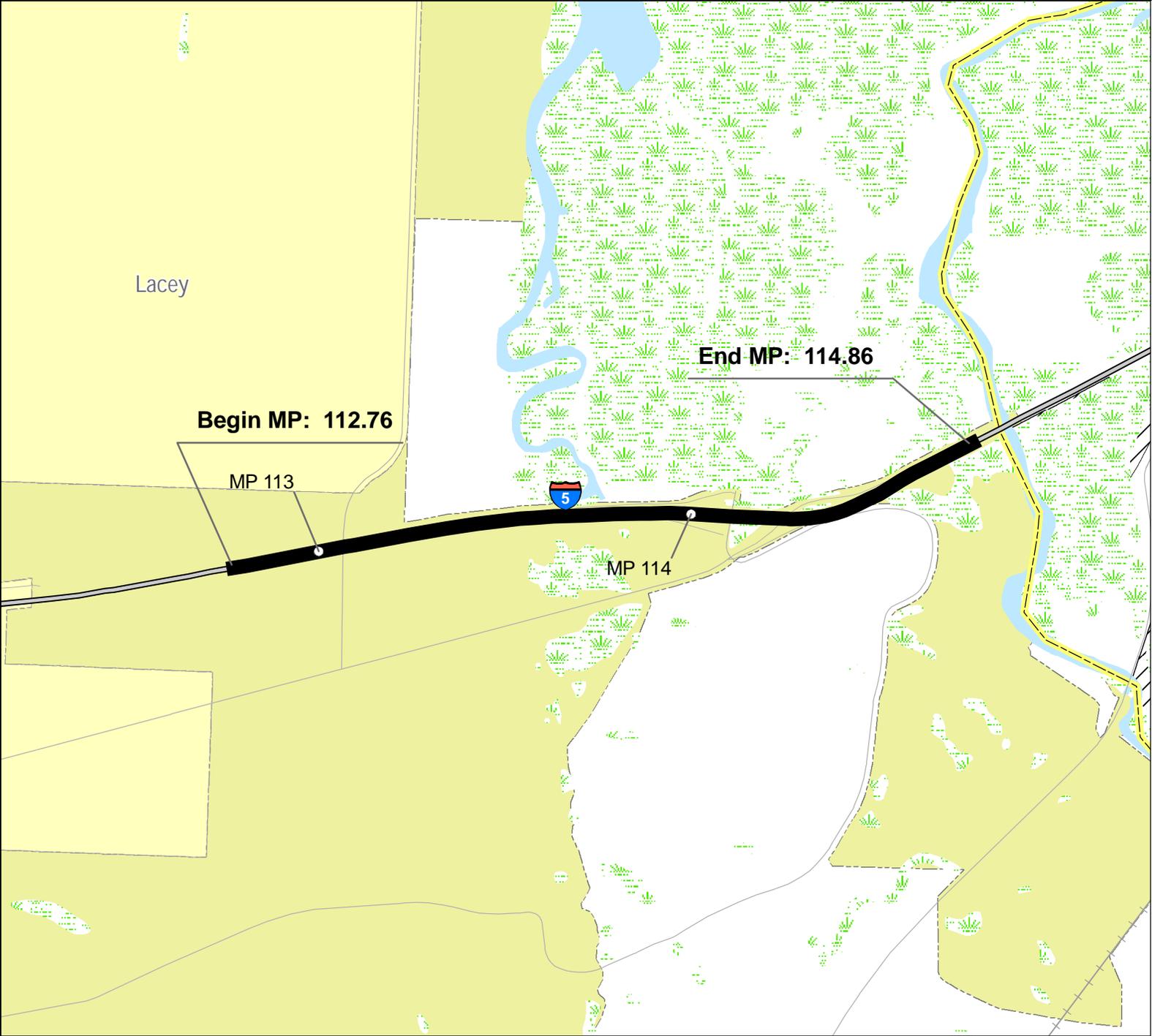
Characteristics

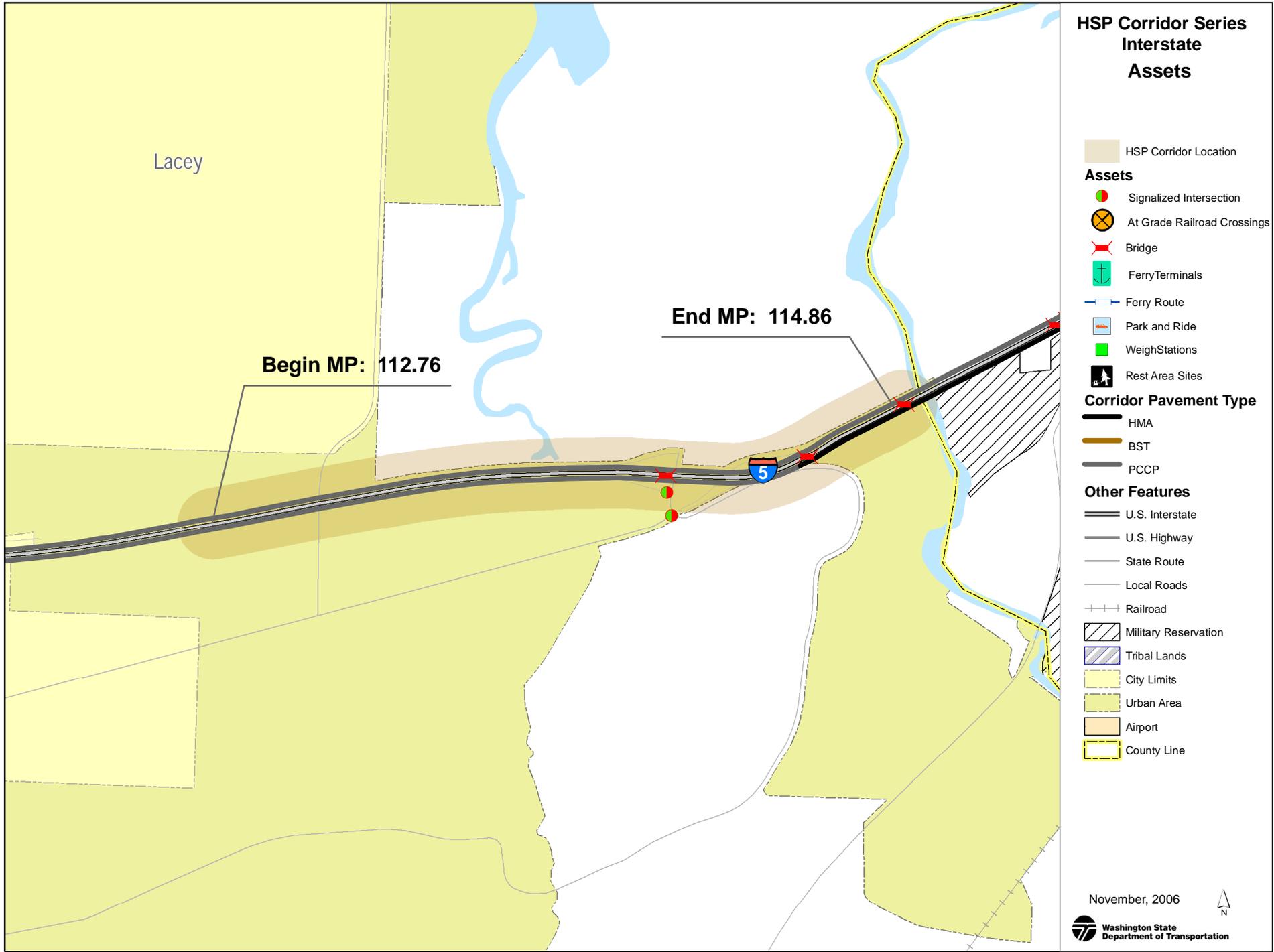
Other Features

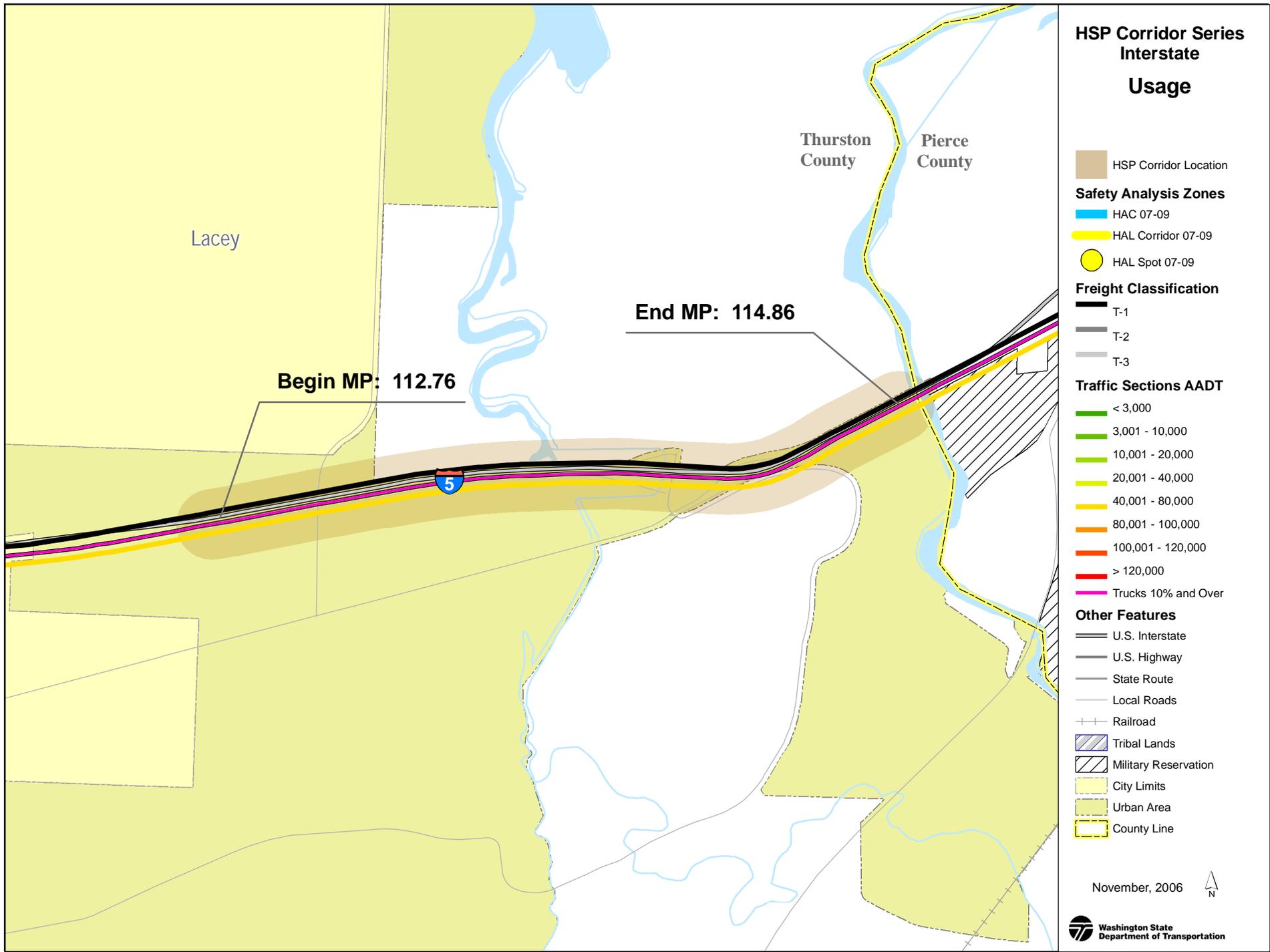
-  U.S. Interstate
-  U.S. Highway
-  State Route
-  Local Roads
-  Railroad
-  Wetlands
-  Tribal Lands
-  Military Reservation
-  City Limits
-  Urban Area
-  County Line

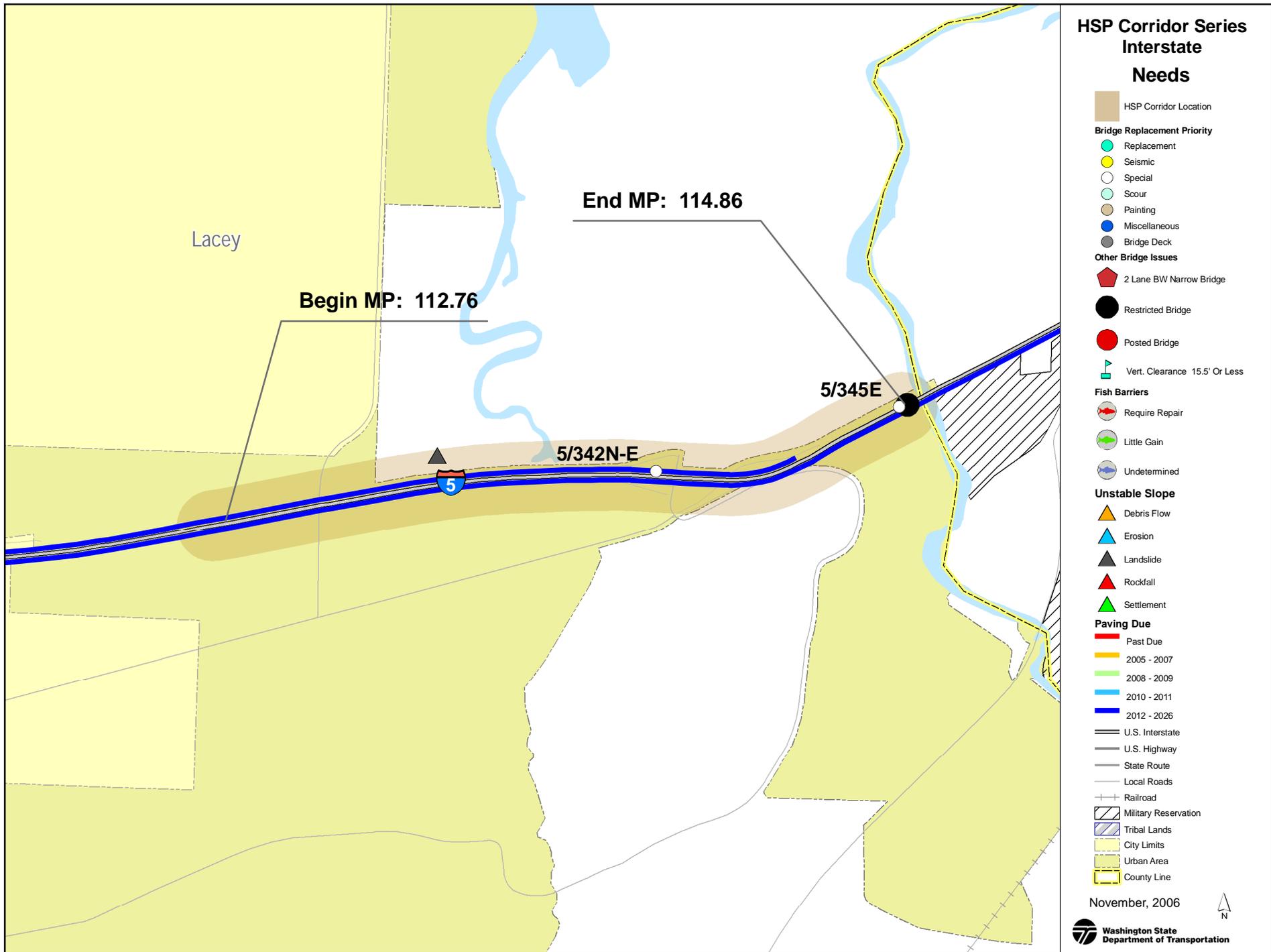


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HSP Corridor Series Interstate Needs

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
- Urban Area
- County Line

November, 2006

**HSP Corridor Series
Interstate**

Solutions

Other Features

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

November, 2006

