SR 524, I-5 (LYNNWOOD) TO SR 522 (BOTHELL VIC),
ARM 5.37 TO ARM 14.68, SR MP 5.25 TO SR MP 14.56

CHARACTERISTICS

Segment Description:
Lynnwood I-5 to SR 522 (Bothell Vic), a 9.3 mile segment.

County/Counties: Snohomish
Cities/Towns Included: The SR 524 corridor passes through Mont Lake Terrace and Bothell.
Number of lanes in the corridor: 2 to 4
Lane width: 11 to 14 feet.
Speed limit: 35 to 35 mph.
Median width: 0 to 0 feet.
Shoulder width: 2 to 10 feet.

Highway Characteristics:
SR 524 has been assigned the functional class Urban Other Principal Arterial in the vicinity of MP 1.83-5.29 and Urban Minor Arterial in the vicinity of MP 5.29-14.56. SR 524 designated T-3 with annual tonnage of 2,610,000 in the vicinity of MP 2.61-14.31 and T-2 with annual tonnage of 4,327,345 in the vicinity of MP 14.31-14.56.

Special Use Lane Information (HOV, Bicycle, Climbing):
A two way left turn lane occurs in the vicinity of ARM 5.81 to 5.94, 7.68 to 7.82, and 9.67 to 9.76.

Access Control Type(s):
The access control is classified as Full in the vicinity of ARM 5.26 to 5.41 and Managed Class 3 in the vicinity of ARM 5.41 to 14.68.

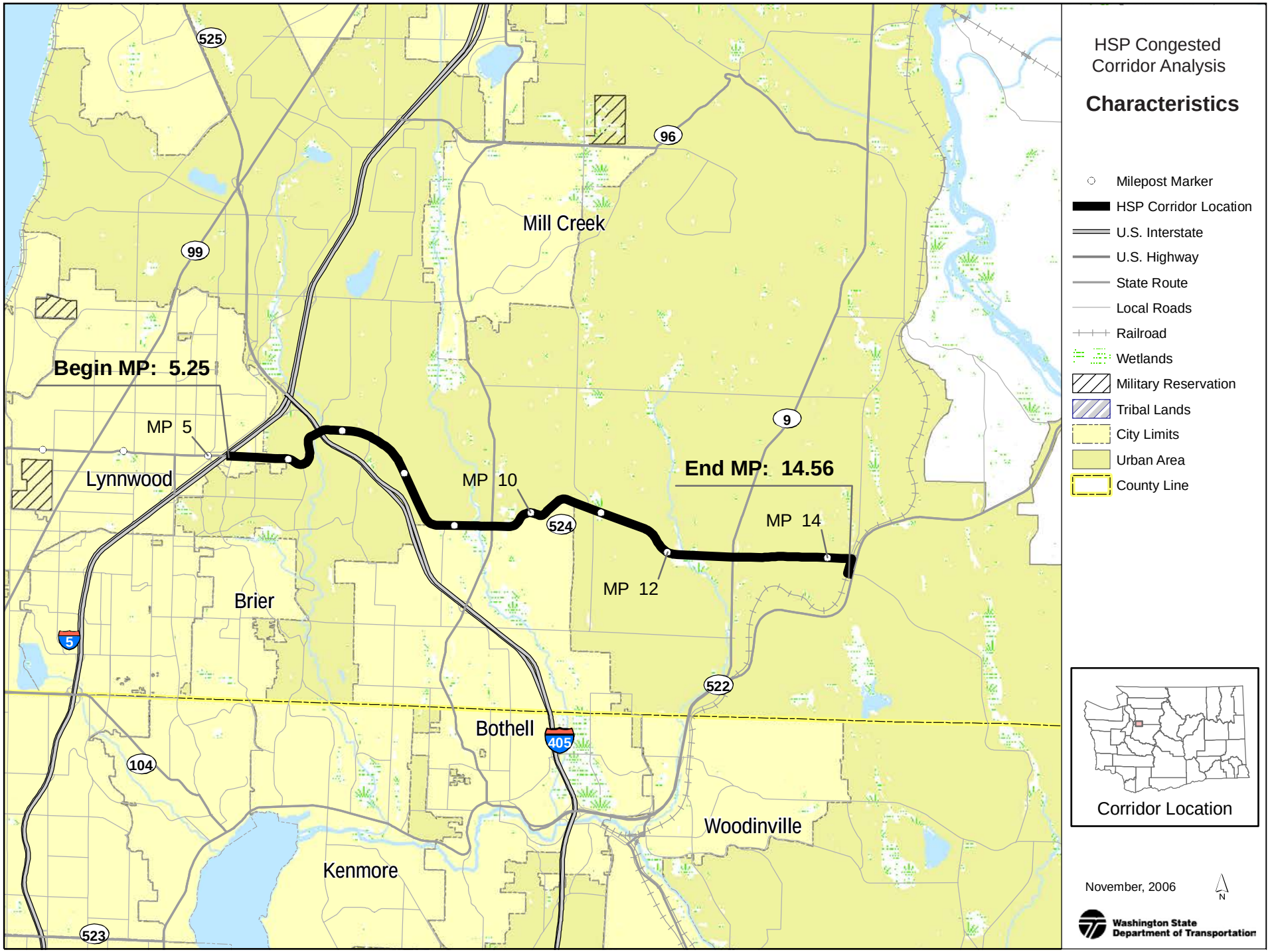
Terrain Characteristics:
The terrain is rolling for the entire corridor segment.

Natural Features:
This corridor provides direct and indirect access to many recreational areas in the southerly portion of Snohomish County.

Adjacent Land Description:
The route traverses urban, semi urban, rural and forested areas, as characterized by the Roadside Classification Plan.

Environmental Issues:
Erosion of sediments into surrounding water bodies during large storm events.

Major Economic Issues:
This arterial serves as the primary link between the two large urban areas of Lynnwood and Bothell.


HSP Congested
Corridor Analysis
Characteristics
Milepost Marker
HSP Corridor Location
U.S. Interstate
U.S. Highway
State Route
Local Roads
Railroad
Wetlands
Military Reservation
Tribal Lands
City Limits
Urban Area
County Line
Begin MP: 5.25
End MP: 14.56
MP 5
MP 10
MP 12
MP 14
Lynnwood
Mill Creek
Brier
Bothell
Kenmore
Woodinville
525
96
99
9
524
522
104
523
5
405
Corridor Location
November, 2006
N
Washington State
Department of Transportation

SR 524, I-5 (LYNNWOOD) TO SR 522 (BOTHELL VIC),
ARM 5.37 TO ARM 14.68, SR MP 5.25 TO SR MP 14.56

ASSETS

Pavement:
There are approximately 40 lane miles of Hot Mix Asphalt on this segment of SR 524.

Signal:
There are twelve signalized intersections located along this corridor.

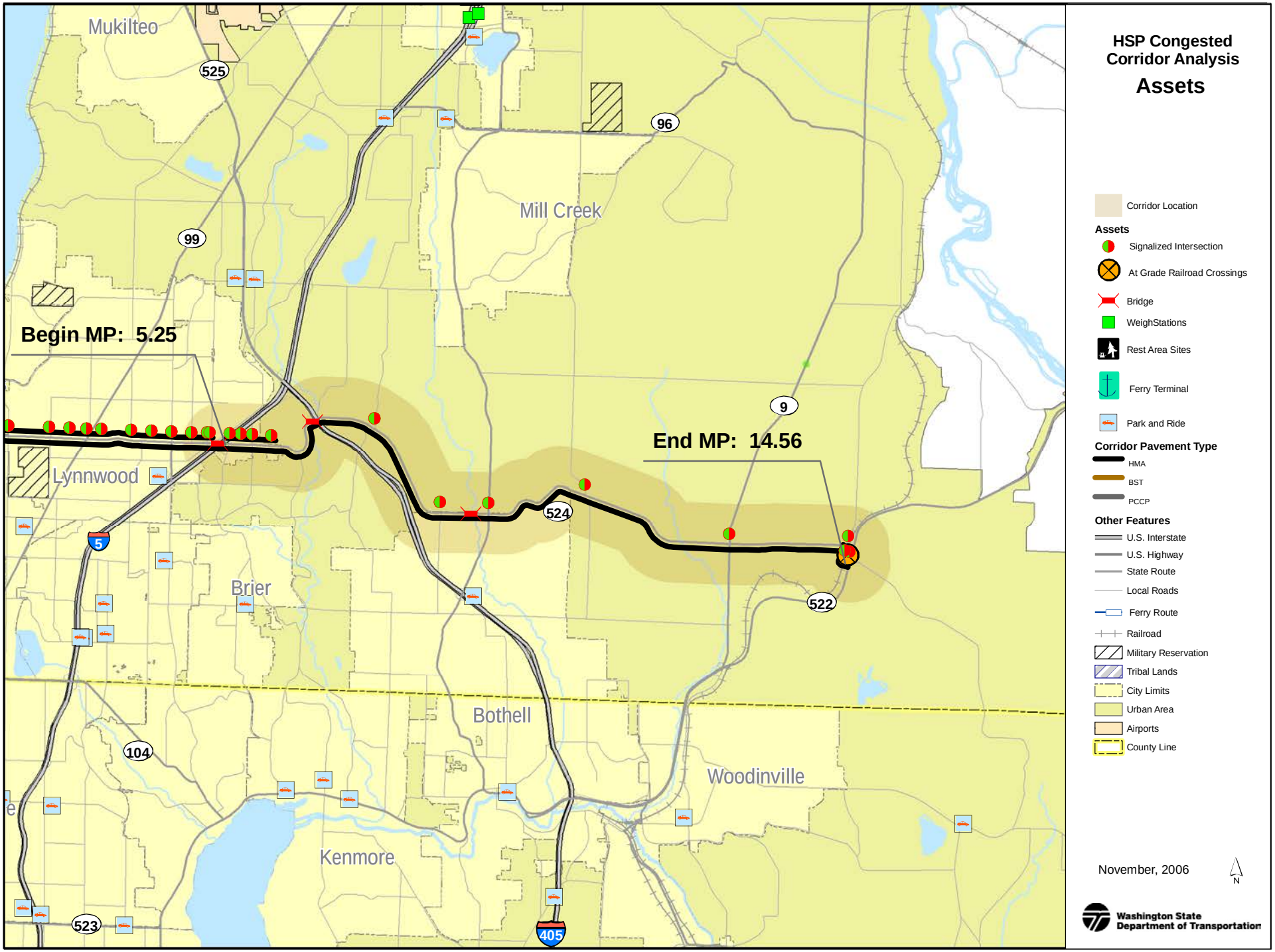
Structures:
There are two structures in this corridor that consist of: one Creosote Treated Timber Trestle and one Concrete T-Beam.
(Ramps, and locally owned structures (if any exist) are not identified in this section and may not be reflected on maps.)

Features Crossed:
This segment of the SR 524 corridor crosses Swamp Creek and North Creek.

ITS Facilities:
There are no intelligent Transportation systems on this corridor.

Railroad Crossings:
There is a railroad crossing in the vicinity of ARM 14.42 at-grade double track.

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


Mukilteo
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Mill Creek
99
Begin MP: 5.25
End MP: 14.56
9
Lynnwood
524
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Brier
522
Bothell
104
Woodinville
Kenmore
523
405
HSP Congested Corridor Analysis
Assets
Corridor Location
Assets
Signalized Intersection
At Grade Railroad Crossings
Bridge
WeighStations
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
November, 2006
N
Washington State Department of Transportation

SR 524, I-5 (LYNNWOOD) TO SR 522 (BOTHELL VIC),
ARM 5.37 TO ARM 14.68, SR MP 5.25 TO SR MP 14.56

USAGE

General Origin and Destination Travel Characteristics:
Users of this corridor include:

Local residents traveling to work and school.
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 6,426 to 26,158.

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.

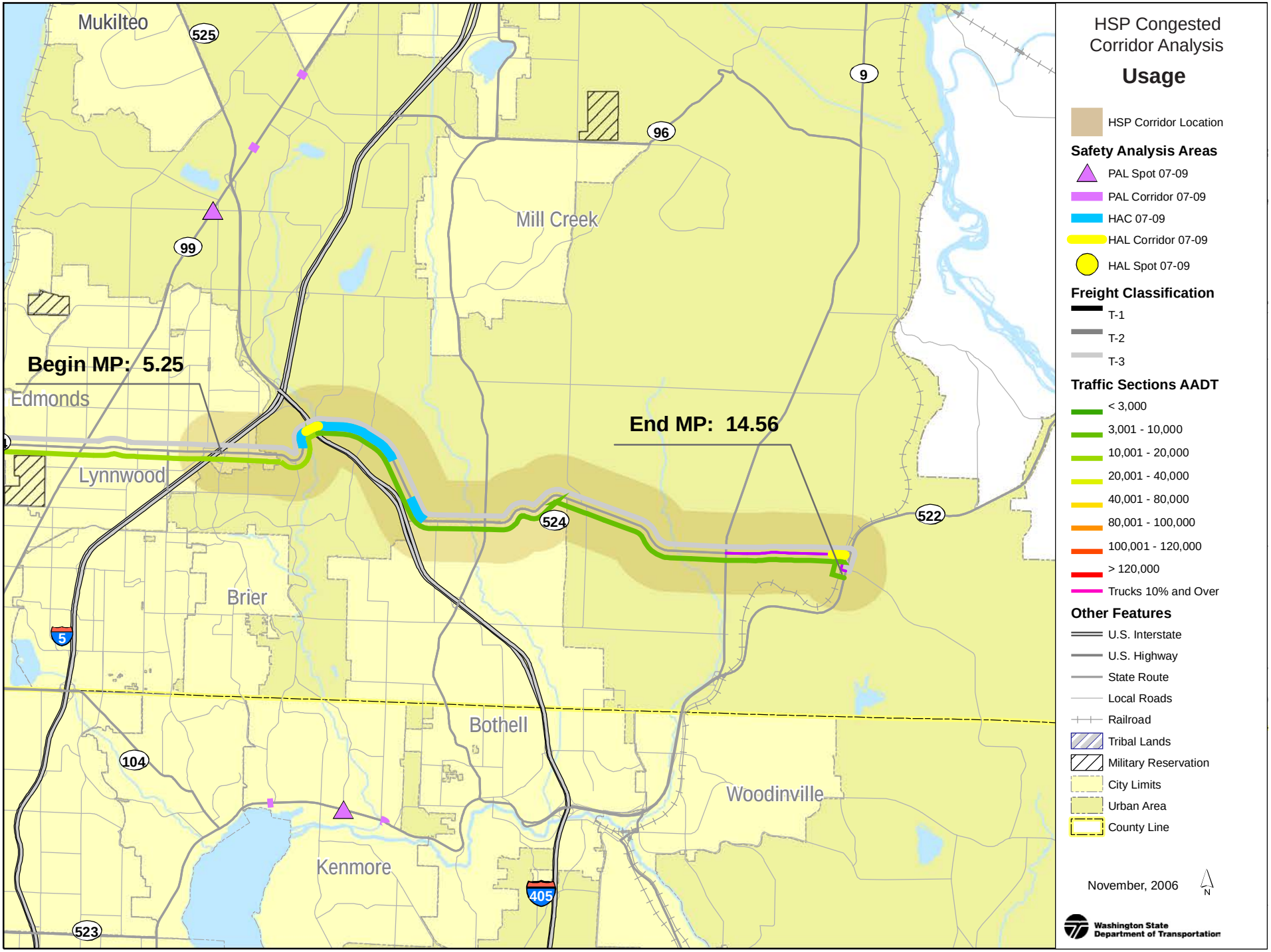
General Description of Major Average Annual Daily Traffic Locations:
On SR 524, the annual average daily traffic (AADT) in the vicinity of 24th Ave W is 26,200 and decreases to 18,000 In the vicinity of Larch Way and further drops to 8,900 in the vicinity of 39th Ave SE.

Freight:
Freight Classification: T-2 and T-3
Yearly Tonnage: 4.3M
Truck Percentage of Annual Average Daily Traffic: 5.7% to 11.4%

Additional Usage Comments:
There are no additional comments.

Average Annual Societal Cost of All Collisions: Approximately $8M

Collisions:
Severe No of Collisions: 10
Less Severe No of Collisions: 569
List Data Years: 2002 to 2004


Mukilteo
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Mill Creek
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Begin MP: 5.25
Edmonds
End MP: 14.56
Lynnwood
524
522
Brier
5
Bothell
104
Woodinville
Kenmore
405
523
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
November, 2006
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Washington State Department of Transportation

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 99% flexible and 1% rigid. Of the flexible pavement none 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:

There are 11 bridge structures in this portion of the corridor. Of them, a treated timber bridge (over Swamp Creek) needs replacement. This bridge was built in 1935 and is now functionally obsolete. (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. The treated timber bridge is planned to replace in 2025.

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 is 1 unstable slope identified along this corridor. The unstable slope has a conceptual design solution. There were no weight facilities identified for this corridor. There are no weigh station improvements planned for this corridor.

Additional Management Strategies:

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

Improvement

Mobility Condition and Needs:

Snohomish County has grown by more that 30 percent in the last ten years and the influx of people has greatly increased congestion on SR 524.

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. Improving this highway has long been a top priority for Snohomish County. It is a corridor that is included in their list of RTID projects. The corridor should be widened in sections moving from I-5 towards SR 522.

Safety Condition and Needs:

There are three High Accident Locations,along SR 524 in the vicinity of MP 5.54 to 5.82, 6.64 to 6.83. and 9.42 to 9.66. In addition, there are two High Accident Corridors identified on SR 522 in the vicinity of MP 6.42 to 7.91 and 8.42 to 9.91.

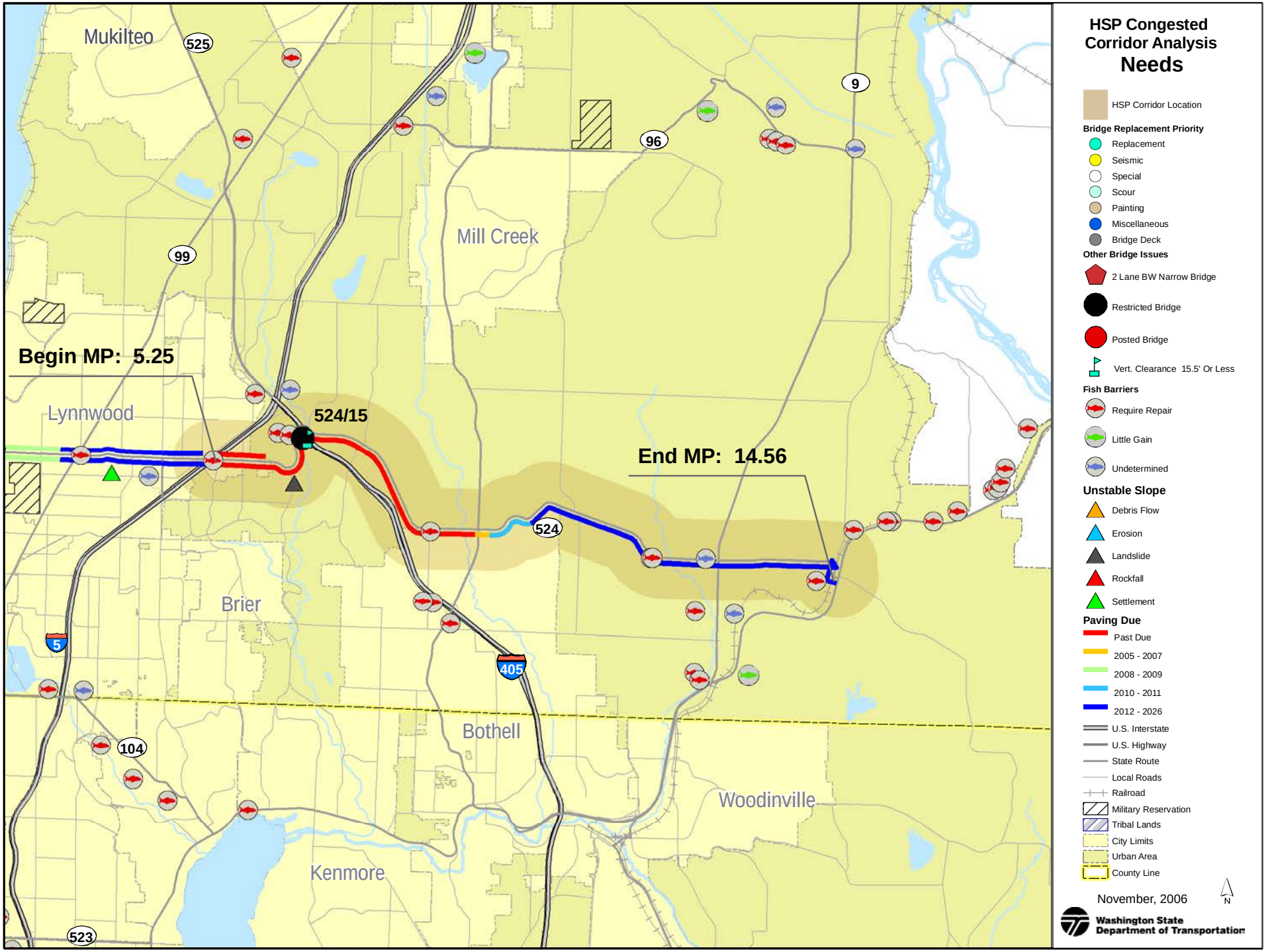
Safety Management Strategies:
Reduce and prevent deaths and the frequency and severity of disabling injuries, and reduce the societal costs of accidents (Focus on the rate of severity and frequency).
Safety improvements that will be strategically considered include:
1. Eliminate high accident locations on state highways through hazard mitigation.
2. Eliminate Pedestrian Accident Locations on state highway through hazard mitigation.
3. Eliminate high accident corridors using standards based highway safety solutions.
4. Construct and improve intersection channelization and/or signals in compliance with federal guidelines to improve safety.
5. Improve the geometrics of the Interstate system per Federal Highways Administration (FHWA)/WSDOT stewardship agreement.
6. Eliminate major at-grade intersections on multi-lane, divided highways with speeds of 45 MPH or greater.
7. Improve roadways where geometrics, traffic volumes, and speed limits indicated a high accident potential by instituting standards based highway safety solutions.
8. Proactively address pedestrian safety along state highway segments that exhibit high pedestrian use and the potential for future accidents.
9. 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:
1. Strategically prioritize and retrofit existing state transportation facilities for noise reduction.
2. Implement all transportation control measures as identified by the Washington State Implementation Plan for Air Quality.
3. Strategically prioritize repair, replace, and retrofit existing state transportation facilities for storm water runoff quality and quantity to reduce environmental impacts.
4. 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.
5. Develop criteria, strategically prioritize and repair existing chronic environmental deficiencies of transportation facilities.
6. 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 none identified.

50-Year Configuration:
The corridor will be progressively expanded to a five lane highway. The corridor needs will continue to be refined as future studies are accomplished.


Mukilteo
525
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Begin MP: 5.25
Lynnwood
524/15
End MP: 14.56
524
Brier
5
405
Bothell
104
Woodinville
Kenmore
523
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
Urban Area
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TIERED PROPOSED SOLUTIONS

Minimum Fix

Description:
(SR 524 BARM 5.99 to EARM 9.62): Widen to five lanes adding two general purpose lanes and a two-way-left-turn-lane from 24th Ave. W to SR 527. ($41M - $55M, solution cost) (55 to 65 % Collision Reduction + 75 to 80% Reduction in Daily Vehicle hours of Delay = $68M Benefit)

(SR 524 BARM 0.00 to EARM 11.10) CCTV, is Loop Detection, fiber optic cable ($7.40M - $9.86M Solution Cost)

Delay Reduction: 75 to 80%
Collision Reduction: 55 to 65%
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $48.0 M to $65.0 M

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

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

Moderate Fix

Description:
(SR 524 BARM 9.62 to EARM 11.05): Widen to five lanes adding two general purpose lanes and a two-way-left-turn-lane from SR 527 to 35th/39th Ave SE. ($13M - $17M, solution cost) (55 to 65 % Collision Reduction + 70 to 80% Reduction in Daily Vehicle hours of Delay = $13M Benefit)

Delay Reduction: 70 to 80%
Collisions Reduction: 55 to 65%
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $13 M to $17 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:
(SR 524 BARM 11.05 to EARM 14.68): Widen to five lanes adding two general purpose lanes and a two-way-left-turn-lane from 35th/39th Ave. SE to SR 522 (Maltby). ($39M - $52M, solution cost) (55 to 65 % Collision Reduction + 70 to 75% Reduction in Daily Vehicle hours of Delay = $16M Benefit)

Delays Reduction: 70 to 75%
Collisions Reduction: 55 to 65%
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $39 M to $52 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:

None identified.

Required Studies

Corridor studies will be identified in the future.

Start/Completion Date of Study:

None identified.

ExpectedResults

None identified.

Funded Projects within Corridor Limits

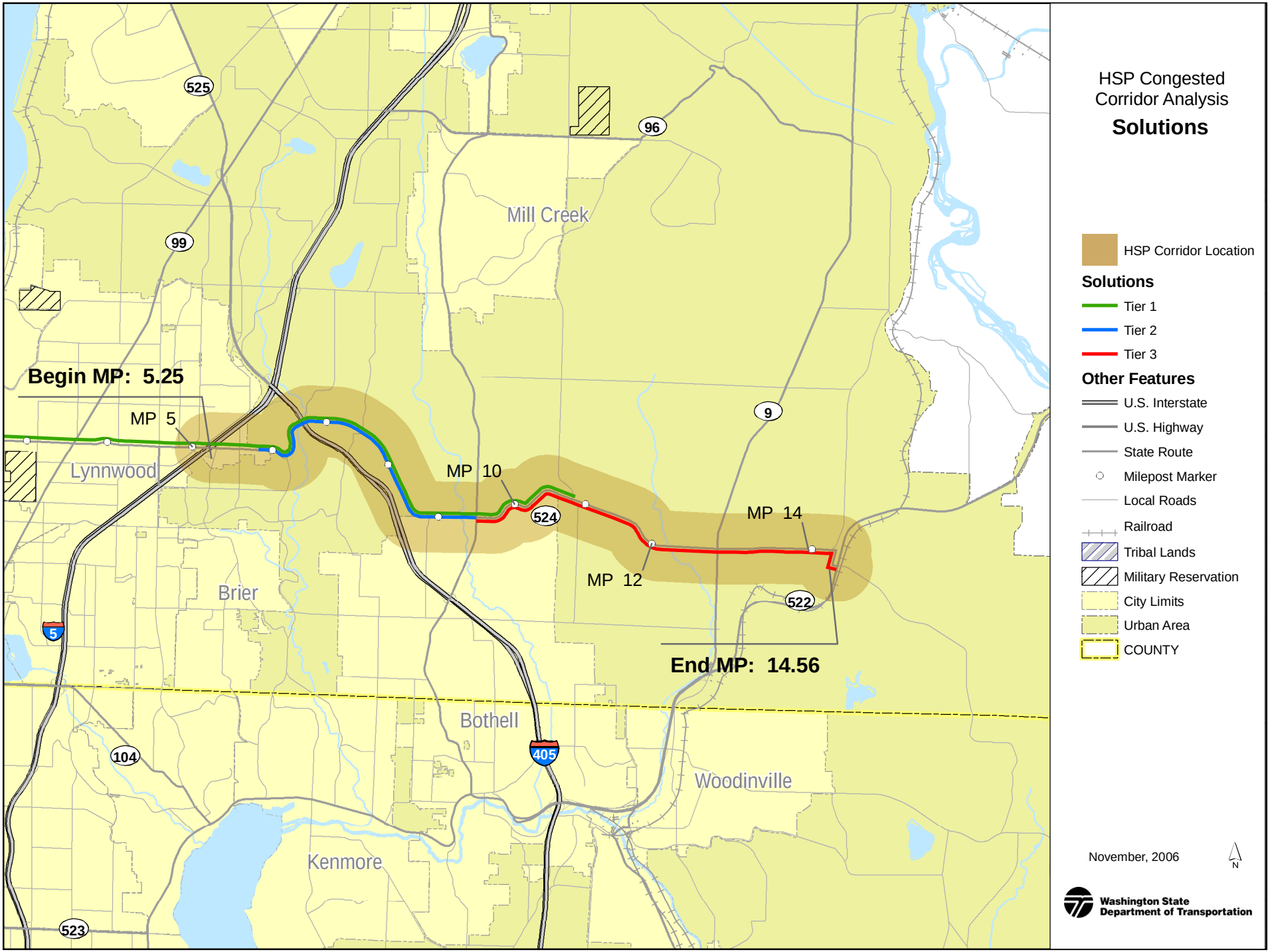
Project No	Title
152409S	SR 524/I-5 to Floral Hills Cemetery Vic.
152412B	SR 524/Floral Hills Cem. to E of SR 527
152412B	SR 524/Floral Hills Cem. to E of SR 527

Additional Comments:

None identified.

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 Planning Library (internal)
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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MP 10
MP 12
MP 14
End MP: 14.56
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