US 12 - SR 410 TO I-82

CHARACTERISTICS

Segment Description:
Beginning at the junction of US 12/SR 410 and ending at the I-82 N. First Street Interchange.

County/Counties: Yakima
Cities/Towns Included: This corridor runs through towns of Naches, and abuts the City of Yakima.
Number of lanes in the corridor: 2 to 4
Lane width: 12 to 12 feet.
Speed limit: 35 to 60 mph.
Median width: 0 to 0 feet.
Shoulder width: 4 to 8 feet.

Highway Characteristics:
This segment of US 12 is classified as both an Urban and Rural Principal Arterial. The entire route is both a Highway of Statewide Significance (HSS) and a National Highway System (NHS) highway. It carries a T-2 (6.7M tons) and T-3 (2.3M tons) freight designation.

Special Use Lane Information (HOV, Bicycle, Climbing):
None identified.

Access Control Type(s):
The corridor is Managed access from the junction of 12/410 (Class 2), becomes Class 4 through the town of Naches. The four lane section is Fully controlled limited access from I-82 to the 40th/Fruitvale I/C, then is partial control limited access westerly for the remainder of the four lane section.

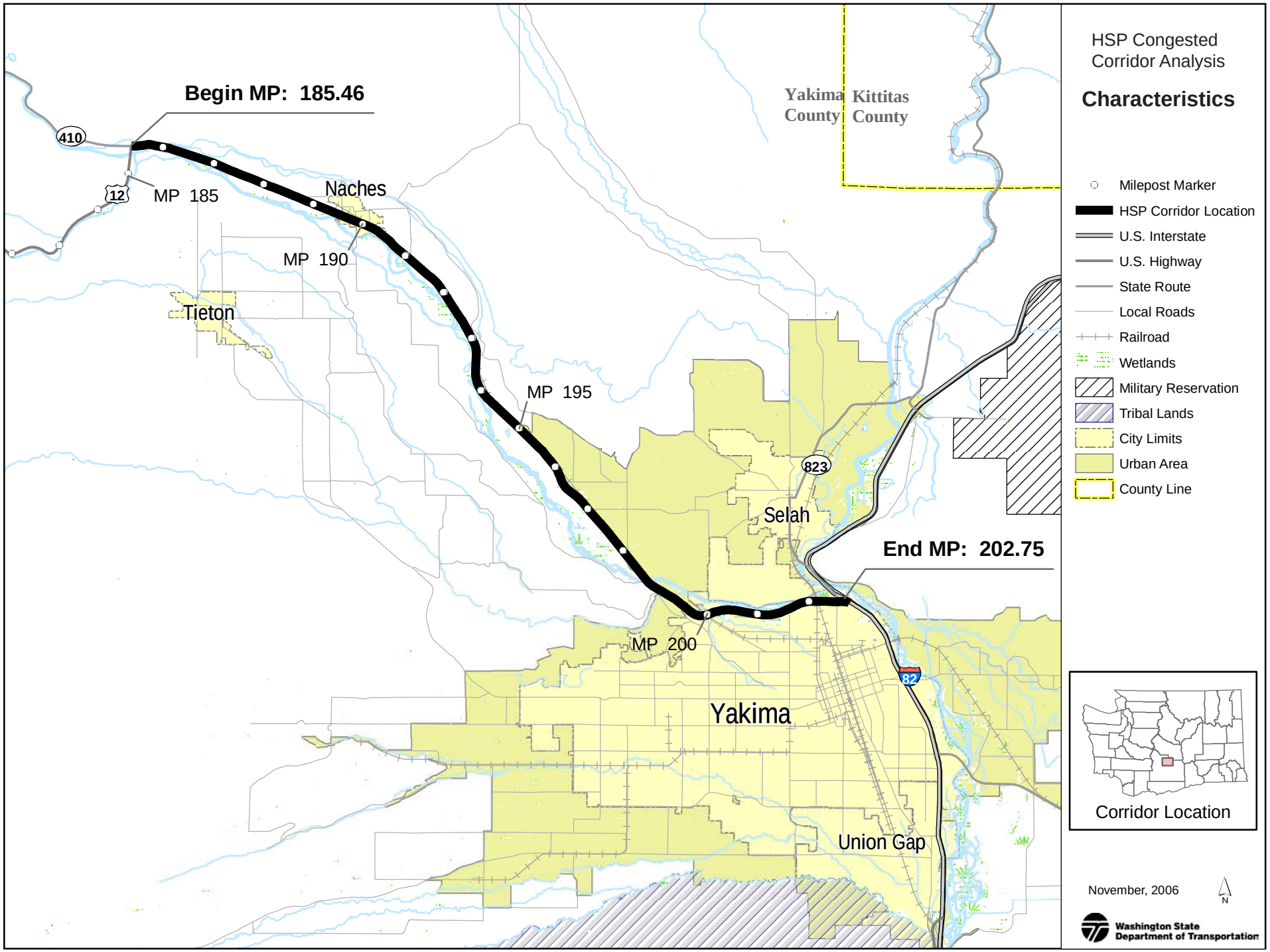
Terrain Characteristics:
This section of US 12 is level terrain.

Natural Features:
This segment of highway provides access to White and Chinook Passes, Mount Rainier National Park, Mount St. Helens National Volcanic Monument, national forests, wilderness areas and associated recreation activities. The route parallels the lower reach of the Naches River and terminates at the confluence of the Yakima and Naches Rivers.

Adjacent Land Description:
Beginning in rural agricultural lands and transitioning into suburban/urban locations adjacent to City of Yakima.

Environmental Issues:
The route parallels the Naches river, with sensitive areas immediately adjacent to the highway, in various locations within the corridor. The river flooded causing extensive damage to both private and public lands in 1996.

Major Economic Issues:
This highway segment serves as the beginning/ending point for major east-west traffic crossing the Cascade mountain range. The Yakima Valley is the largest producing region of fruit within Washington State, and this corridor serves as a vital link to transport agricultural products to ports and markets. The existing four lane segment of US 12 is a major transportation route for the Yakima urban area. It connects with SR 410, a National Scenic Highway. This segment of US 12 provides access to White, Chinook, and Cayuse Passes. It also provides access to numerous major recreational areas. These include Mount Rainier National Park, Mount St. Helens National Volcanic Monument, William O. Douglas Wilderness, Goat Rocks Wilderness, Norse Peak Wilderness, Wenatchee National Forest, Gifford Pinchot National Forest, and other associated recreation activities. US 12 White Pass is one of the few Cascade Mountain passes maintained year-round.


HSP Congested Corridor Analysis
Characteristics
Begin MP: 185.46
End MP: 202.75
MP 185
MP 190
MP 195
MP 200
Naches
Tieton
Selah
Yakima
Union Gap
Yakima County
Kittitas County
410
12
823
82
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
Corridor Location
November, 2006
N
Washington State Department of Transportation

ASSETS

Pavement:
There are 56.96 lane miles of Hot Mix Asphalt on this segment of US 12.

Signal:
There are three signalized intersections.

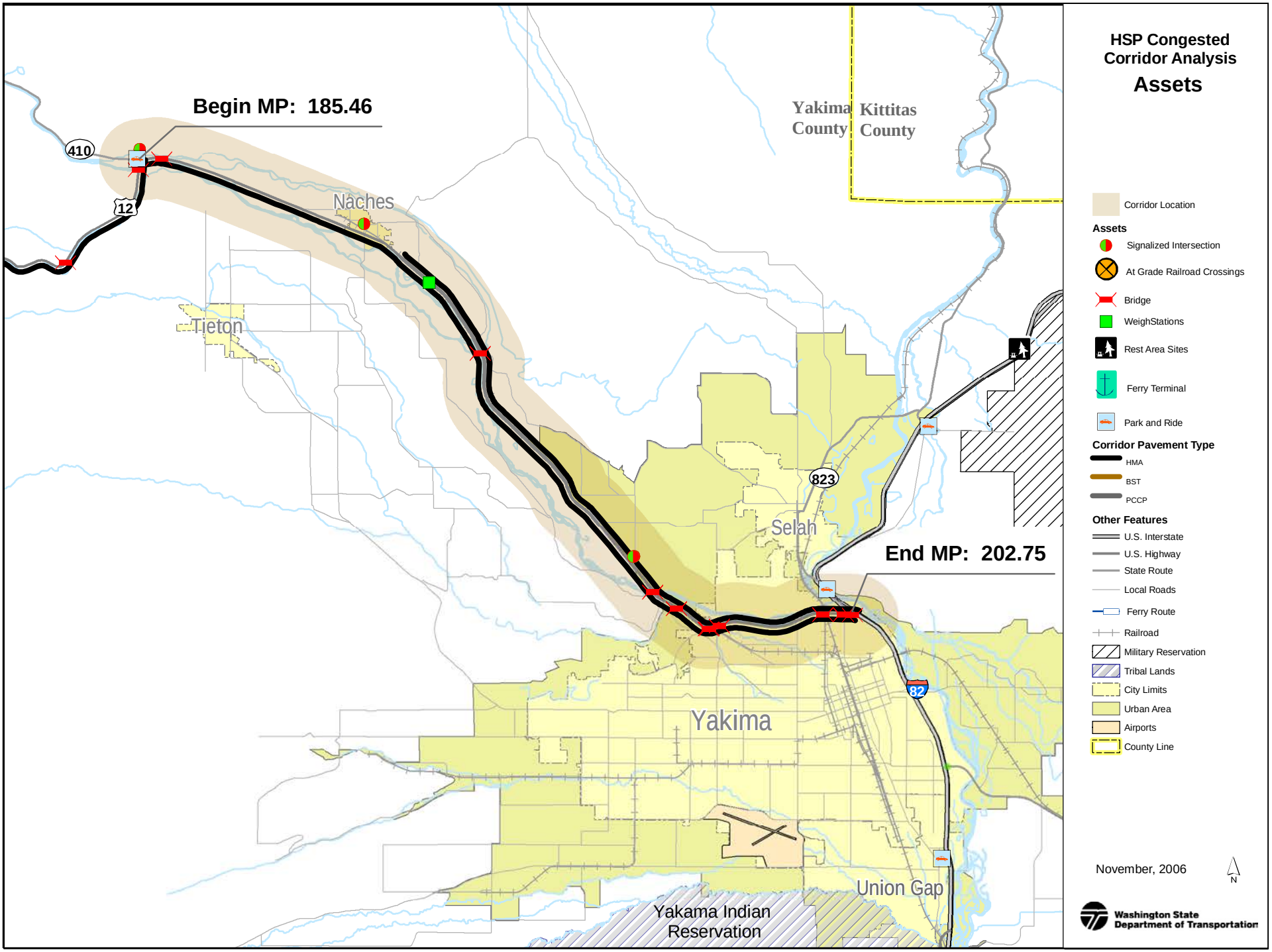
Structures:
There are sixteen structures in this corridor that consist of: two Concrete Box Girder, three Concrete Slab, one Concrete T-Beam, seven Pre-Tensioned Concrete Beam, two Steel Truss and one Concrete Culvert.
(Ramps, and locally owned structures (if any exist) are not identified in this section and may not be reflected on maps.)

Features Crossed:
There are two bridges crossing the Naches river at milepost 198.66, bridges 12/328 north and south.

ITS Facilities:
There is highway advisory radio at MP 192.84.

Railroad Crossings:
There are no at-grade rail crossings within this route segment.

Asset Other:
This section of highway has a plug and run weigh station at MP 191.61 right (eastbound only). There is one major airport serving the region, the Yakima Air Terminal.


HSP Congested Corridor Analysis
Assets
Begin MP: 185.46
End MP: 202.75
Yakima County
Kittitas County
Naches
Tieton
Selah
Yakima
Union Gap
Yakama Indian Reservation
410
12
823
82
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

USAGE

General Origin and Destination Travel Characteristics:
This highway segment serves as the beginning/ending point for major east-west traffic crossing the Cascade mountain range. In addition to the important truck route for goods and services, the existing four lane segment of US 12 is a major transportation route for the Yakima urban area. This segment of US 12 provides access to White, Chinook, and Cayuse Passes, and numerous major recreational areas. These include Mount Rainier National Park, Mount St. Helens National Volcanic Monument, William O. Douglas Wilderness, Goat Rocks Wilderness, Norse Peak Wilderness, Wenatchee National Forest, Gifford Pinchot National Forest, and other associated recreation activities. US 12 White Pass is one of the few Cascade Mountain passes maintained year-round.

Snow/ice Issues:
This segment of highway while generally level and moderately rolling is at the foothills of the eastern Cascade mountains. As a result, the corridor experiences winter weather including snow and ice events contributing to major maintenance efforts.

Annual Average Daily Traffic:
Ranges from 4,300 to 33,000.

Significant Seasonal Average Annual Daily Traffic Changes:
This section of US 12 sees seasonal changes in traffic, RV's and other recreational vehicles in the spring/summer; major fruit and other truck traffic in summer and fall; and winter recreation.

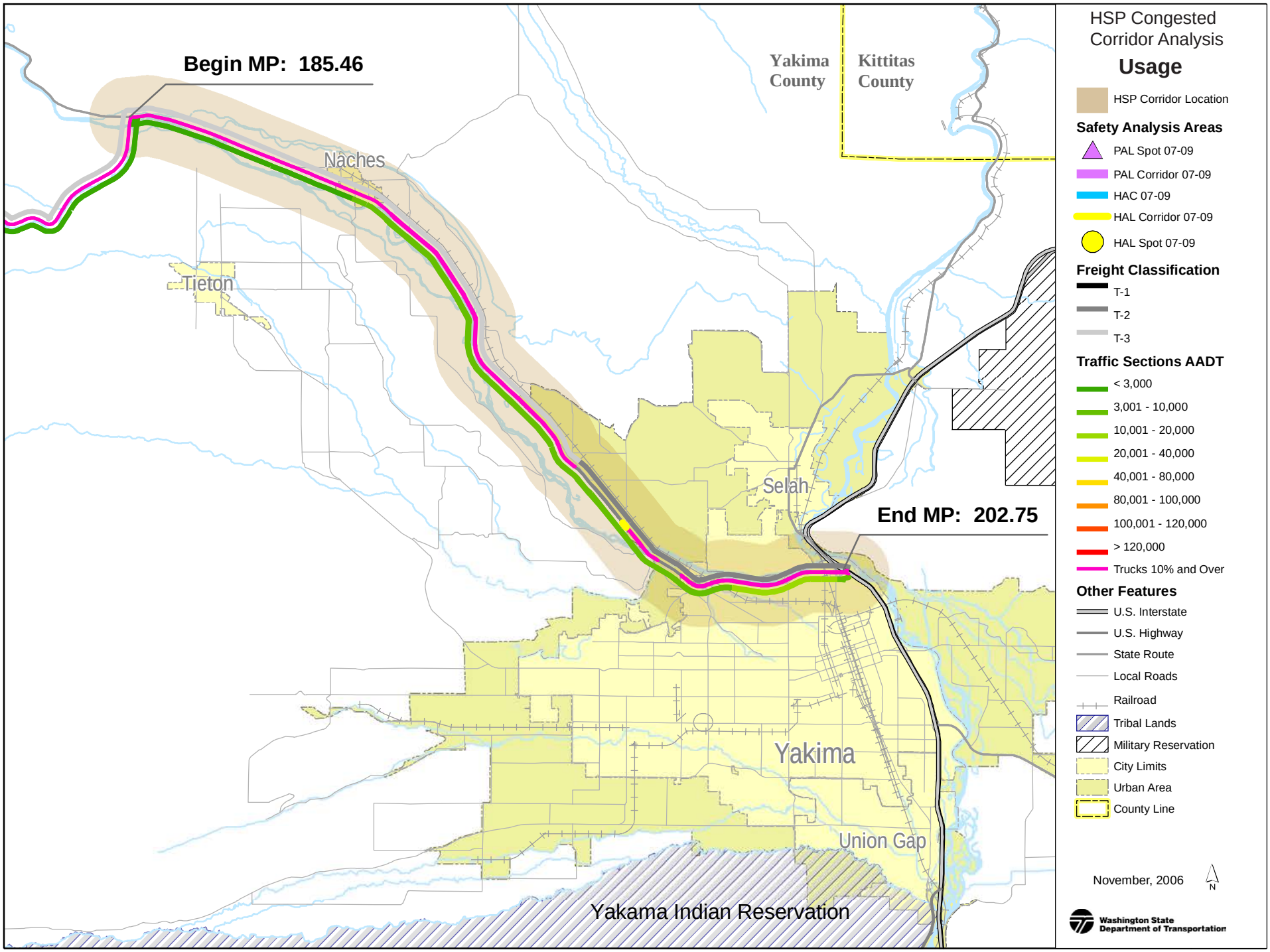
General Description of Major Average Annual Daily Traffic Locations:
Annual average daily traffic (AADT) is 4,300 east of SR 410; 11,000 east of S. Naches Road/Canal Avenue in Naches; 17,000 east of Old Naches Highway (Gleed area); 24,000 east of 40th Ave,./Fruitvale Blvd. interchange; and
33,000 east of 16th Ave. interchange.

Freight:
Freight Classification: T2
Yearly Tonnage: 6.7M
Truck Percentage of Annual Average Daily Traffic: 14%

Additional Usage Comments:
There are no additional comments.

Average Annual Societal Cost of All Collisions: Approximately $ 5.3M

Collisions:
Severe No of Collisions: 11
Less Severe No of Collisions: 181
List Data Years: 2003 to 2005


Begin MP: 185.46
End MP: 202.75
Yakima County
Kittitas County
Naches
Tieton
Selah
Yakima
Union Gap
Yakama Indian Reservation
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
N
Washington State Department of Transportation

NEEDS AND STRATEGIES

Preservation

Pavement Condition and Needs:

Hot Mix Asphalt (HMA). There are several different segments pavement conditions:

Mileposts	Last Paved	Life Expectancy of Pavement
185.60 - 189.38	1995	3
189.38 - 190.71	1996	0
190.71 - 191.24	1993	1
191.24 - 191.61	1999	2
191.61 - 193.06	1993	3
193.06 - 197.75	1996	1
197.75 - 199.21	2000	4
199.21 - 202.75	2002	6

Pavement Management Strategies:

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.

Structures Condition and Needs:

The following structures have preservation and improvement needs:
SR 12 MP 185.82 #012/321C-Canal spillway box culvert
SR 12 MP 193.04 #012/323S-Tailrace-concrete slab
SR 12 MP 193.04 #012/323N-Tailrace-concrete slab
SR 12 MP 193.5 #012/324.25-Canal culvert-box culvert
SR 12 MP 198.66 #012/328S-Steel truss overcrossing
SR 12 MP 198.66 #012/328N-Steel truss overcrossing
SR 12 MP 199.21 #012/329 concrete T-beam
SR 12 MP 199.92 #012/331N-BN RR concrete box girder undercrossing
SR 12 MP 199.95 #012/331S-BN RR concrete box girder undercrossing
SR 12 MP 200.13 #012/342N-Pre tensioned concrete beam undercrossing
SR 12 MP 200.13 #012/342S-Pre tensioned concrete beam undercrossing
SR 12 MP 201.55 #012/344 Pre tensioned concrete beam undercrossing
SR 12 MP 201.92 #012/346N Pre tensioned concrete beam undercrossing
SR 12 MP 201.92 #012/346S Pre tensioned concrete beam undercrossing (This may include ramps and locally owned structures if any exist.)

Structures Management Strategies:

There are none identified.

Additional Condition and Needs:

Preserve transportation infrastructure such as electronic systems, major drainage, traffic control systems, unstable slopes, weigh facilities.

Additional Management Strategies:

There are none identified.

Improvement

Mobility Condition and Needs:

There are pockets of congestion at the three interchanges within the four lane segment during the morning and evening peak periods.

US 12 - SR 410 TO I-82

Mobility Management Strategies:
Extend the 4-lane section of US 12 past Naches to the junction of SR 410. This will substantially increase the capacity for this important NHS link. The land along this segment is poised for substantial development. The additional capacity will accommodate this growth. Widen the 16th Ave interchange. This will significantly enhance the safety, mobility, and operation of this segment of US 12.

Safety Condition and Needs:
24% of the accidents are rear-ends. Another 16% are associated with vehicles overturned, and 12% are at angle accidents. Inattention and falling asleep while driving is a leading cause of all accidents, and of fatalities in the South Central Region.

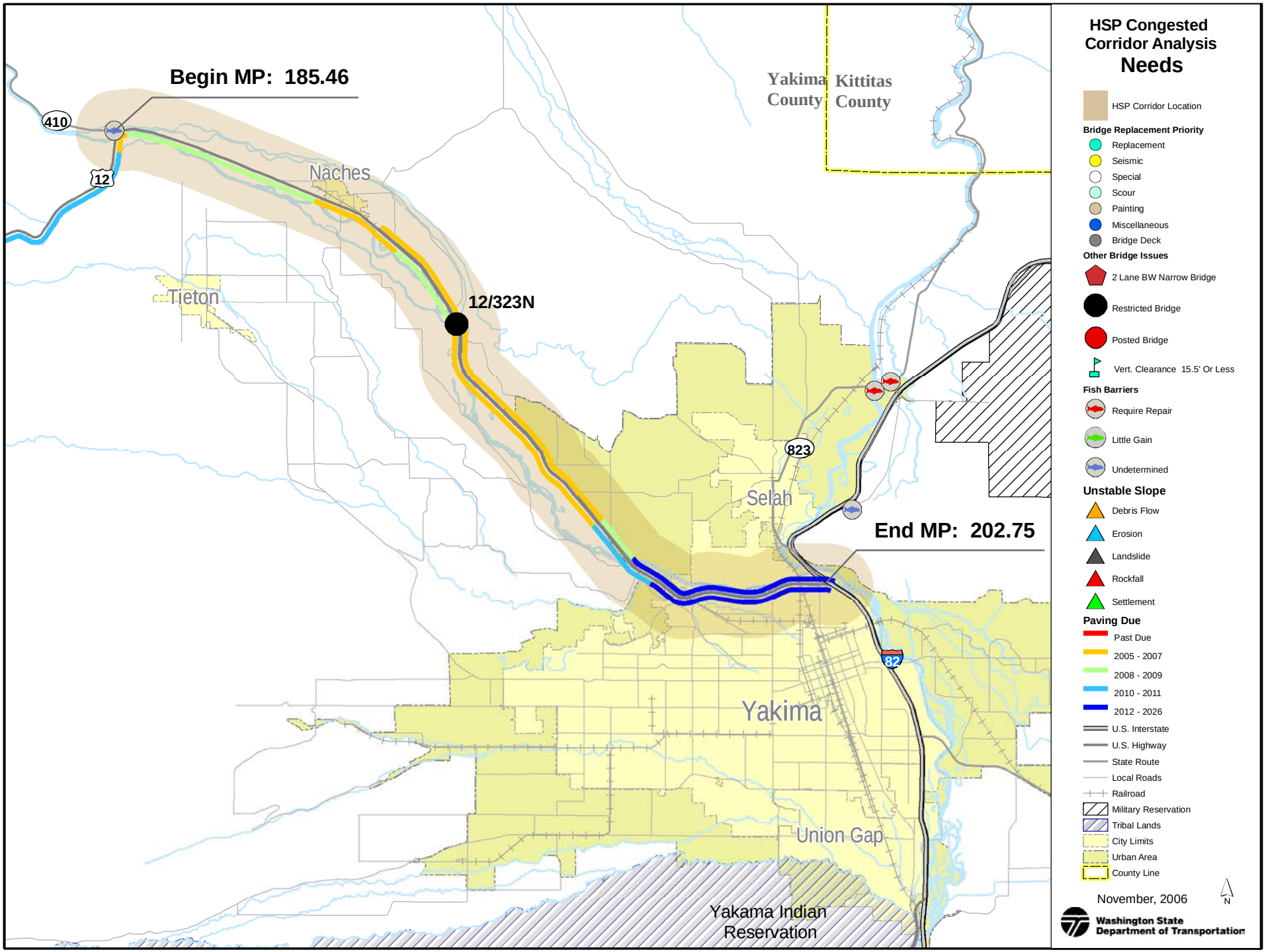
Safety Management Strategies:
Reduce and prevent deaths and the frequency and severity of disabling injuries, by adding lanes, making ramp, intersection and other defined mobility and safety improvements.

Environmental Condition and Needs:
The section west of Naches to the junction of SR 410 has environmentally restricted lands (wetland and other sensitive areas) due to the proximity of the Naches River, side channels, irrigation diversion structures and associated floodplain.

Environmental Management Strategies:
Stormwater; All projects within this corridor will provide adequate storm water treatment as outlined in the WSDOT Highway Runoff Manual to achieve compliance with Federal and State water quality regulations.

Restrictions:
There are none identified.

50-Year Configuration:
We expect this corridor to become fully urban/suburbanized to the Town of Naches with a mixture of industrial, commercial, multi-family residential and single-family residential. Some of the industrial sites will require large acreage. We expect this segment of US 12 to have four lanes with interchanges in selected locations with full access control. The other existing intersections will be removed, and frontage roads (possibly overcrossings) constructed where needed. An additional crossing of the Yakima River may be built two miles south (at the I-82/Valley Mall Boulevard interchange) to provide better traffic circulation to the surrounding area. This will reduce congestion at the I-82/SR 24 interchange, and create an alternative river crossing. It would also open up large areas of agricultural land to urban development. There are significant environmental issues that would need to be addressed with a new crossing in this location.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Needs
Begin MP: 185.46
End MP: 202.75
12/323N
410
12
823
82
Naches
Tieton
Selah
Yakima
Union Gap
Yakama Indian Reservation
Yakima County
Kittitas County
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
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TIERED PROPOSED SOLUTIONS

Minimum Fix

Description:
Improve access control through Naches with curb, gutter and sidewalk. Safety improvements include rumble strips and widening shoulders. Channelize US 12/W. Naches Road intersection.

Delay Reduction: None identified.
Collision Reduction: None identified.
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $ 8 M

Cost Estimate Explanation:
The calculated present value cost of 8.0 million, for the minimum fix, yields a benefit of 60.7 million Net Present Value.
The Benefit/Cost Ratio is 8.59.

Minimum Fix Benefits:
Installing curb, gutter and sidewalk within the Town of Naches will improve the safety and operation of this segment of US 12, and provide a safe separate pedestrian facility. Reduce run-off-the road accidents by installing shoulder rumble strips. Channelizing the US 12/W. Naches Road intersection will improve safety and mobility. Turning vehicles will have a separate lane to decelerate without interfering with the through stream of traffic.

Moderate Fix

Description:
Extend merge lane one eastbound US 12 to eastbound I-82. Widen US 12/16th Avenue interchange, and make ramp improvements. Improve access control through Naches with curb, gutter and sidewalk. Safety improvements include rumble strips and widening shoulders. Channelize US 12/W. Naches Road intersection.

Delay Reduction: None identified.
Collisions Reduction: None identified.
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $19.2 M

Cost Estimate Explanation:
The calculated present value cost of 19.2 million, for the moderate fix, yields a benefit of 52.9 million Net Present Value.
The Benefit/Cost Ratio is 3.75.

Moderate Fix Benefits:
Extending the US 12 eastbound merge lane onto eastbound I-82 will provide additional lane length for the N. 1st Street traffic to merge with the eastbound US 12 traffic before both traffic streams merge onto eastbound I-82. This will significantly improve the safety and operation of the US 12/I-82 interchange. Widening the US 12/16th Avenue interchange and improving the ramps will allow westbound 16th Avenue off-ramp traffic to avoid stacking up onto the westbound US 12 mainline. This will improve the safety and operation of the US 12 mainline and the 16th Avenue interchange. Installing curb, gutter and sidewalk within the Town of Naches will improve the safety and operation of this segment of US 12, and provide a separate safe pedestrian facility. Reduce run-off-the road accidents by installing shoulder rumble strips. Channelizing the US 12/W. Naches Road intersection will improve safety and mobility. Turning vehicles will have a separate lane to decelerate without interfering with the through stream of traffic.

Maximum Fix

Description:
Extend the 4-lane section of US 12 west to the US 12/SR 410 Wye. Extend merge lane one eastbound US 12 to eastbound I-82. Widen US 12/16th Avenue interchange, and make ramp improvements. Improve access control through Naches with curb, gutter and sidewalk. Safety improvements include rumble strips and widening shoulders. Channelize US 12/W. Naches Road intersection.

Delays Reduction: None identified.

US 12 - SR 410 TO I-82

Collisions Reduction: None identified.
Deficient Concrete Lane Miles: None identified.
Total Estimate Cost: $45.9 M

Cost Estimate Explanation:
The calculated present value cost of 45.9 million, for the maximum fix, yields a benefit of 1.49 Billion Net Present Value.
The Benefit/Cost Ratio is 33.53.

Maximum Fix Benefits:
Extending the 4-lane section of US 12 west through Naches to the SR 410 Wye will provide expanded capacity. US 12 is one of the few year-round routes across the Cascades. SR 410 is a National Scenic Highway, and entryway to Mount Rainier National Park and numerous recreational activities. Extending the US 12 eastbound merge lane onto eastbound I-82 will provide additional lane length for the N. 1st Street traffic to merge with the eastbound US 12 traffic before both traffic streams merge onto eastbound I-82. This will significantly improve the safety and operation of the US 12/I-82 interchange. Widening the US 12/16th Avenue interchange and improving the ramps will allow westbound 16th Avenue off-ramp traffic to avoid stacking up onto the westbound US 12 mainline. This will improve the safety and operation of the US 12 mainline and the 16th Avenue interchange. Installing curb, gutter and sidewalk within the Town of Naches will improve the safety and operation of this segment of US 12, and provide a separate safe pedestrian facility. Reduce run-off-the road accidents by installing shoulder rumble strips. Channelizing the US 12/W. Naches Road intersection will improve safety and mobility. Turning vehicles will have a separate lane to decelerate without interfering with the through stream of traffic.

Off-System Solutions:

None identified.

Special Studies/Reports:

None identified.

Required Studies

None identified.

Start/Completion Date of Study:

None identified.

ExpectedResults

None identified.

Funded Projects within Corridor Limits

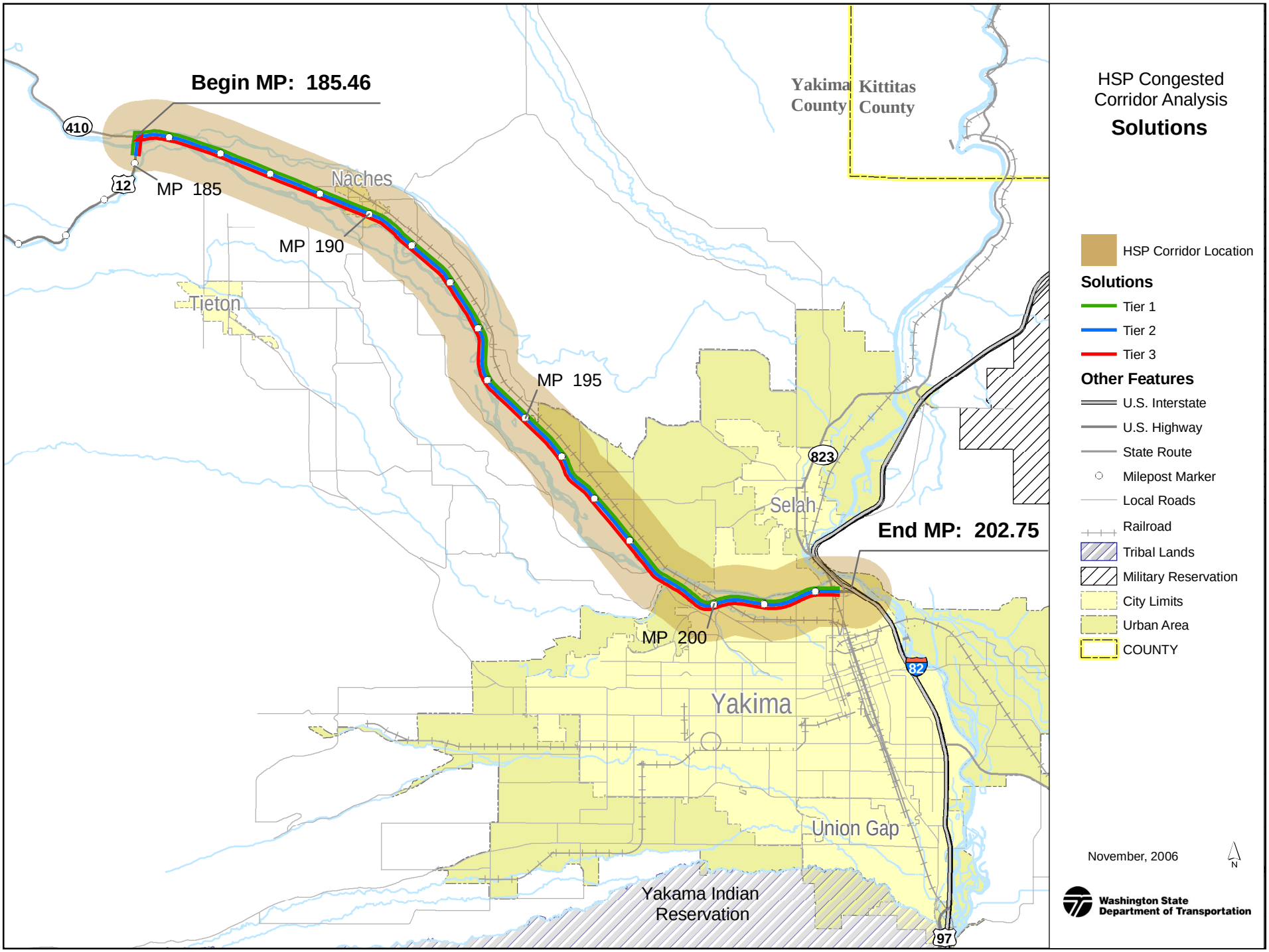
Project No	Title
501213F/XL2851	US 12/Naches to Pacific Power & Light Spillway Paving (HMA)
501212M/XL285	US 12/Naches Vicinity Paving (HMA)
501208J/XL0751	US 12/Old Naches Highway Interchange - New Interchange, PE Only
501213E/XL223	US 12 Naches River - Flood Plain Work - Repair River Bank Erosion
501212O/XL245	US 12/Yakima - 40th Avenue Interchange - Signal & Ramp Improvements

Additional Comments:

None identified.

Data Sources and Contacts used:

Collision Data Mart
2004 Annual Traffic Report
2005 State Highway Log
2003-2022 Washington State Highway System Plan
Pavement Management System
Geographic Information System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Tier 3
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