

SR 24 - I-82 TO FAUCHER ROAD

CHARACTERISTICS

Segment Description:

This corridor begins at the I-82 westbound ramps and extends to Faucher Road on the east side of the City of Moxee.

County/Counties: Yakima

Cities/Towns Included: This corridor runs through City of Yakima and City of Moxee.

Number of lanes in the corridor: 2 to 4

Lane width: 12 to 12 feet.

Speed limit: 35 to 55 mph.

Median width: 0 to 0 feet.

Shoulder width: 8 to 10 feet.

Highway Characteristics:

This segment of SR 24 is classified as an Urban Arterial. The segment from milepost 0.00 to 0.84 is a T-1 designation (9.14 million tons). Milepost 0.84 to 4.44 is a T-2 (6.64 million tons), and milepost 4.44 to 5.57 is a T-3 (1.46 million tons).

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

None identified.

Access Control Type(s):

The entire corridor is partially-controlled limited access.

Terrain Characteristics:

This segment of SR 24 is level terrain.

Natural Features:

The majority of the segment is a plain, which has been used for agriculture (especially hops). In the west, SR 24 crosses the Yakima River, and includes the floodway, floodplain, and wetlands in the vicinity of the river.

Adjacent Land Description:

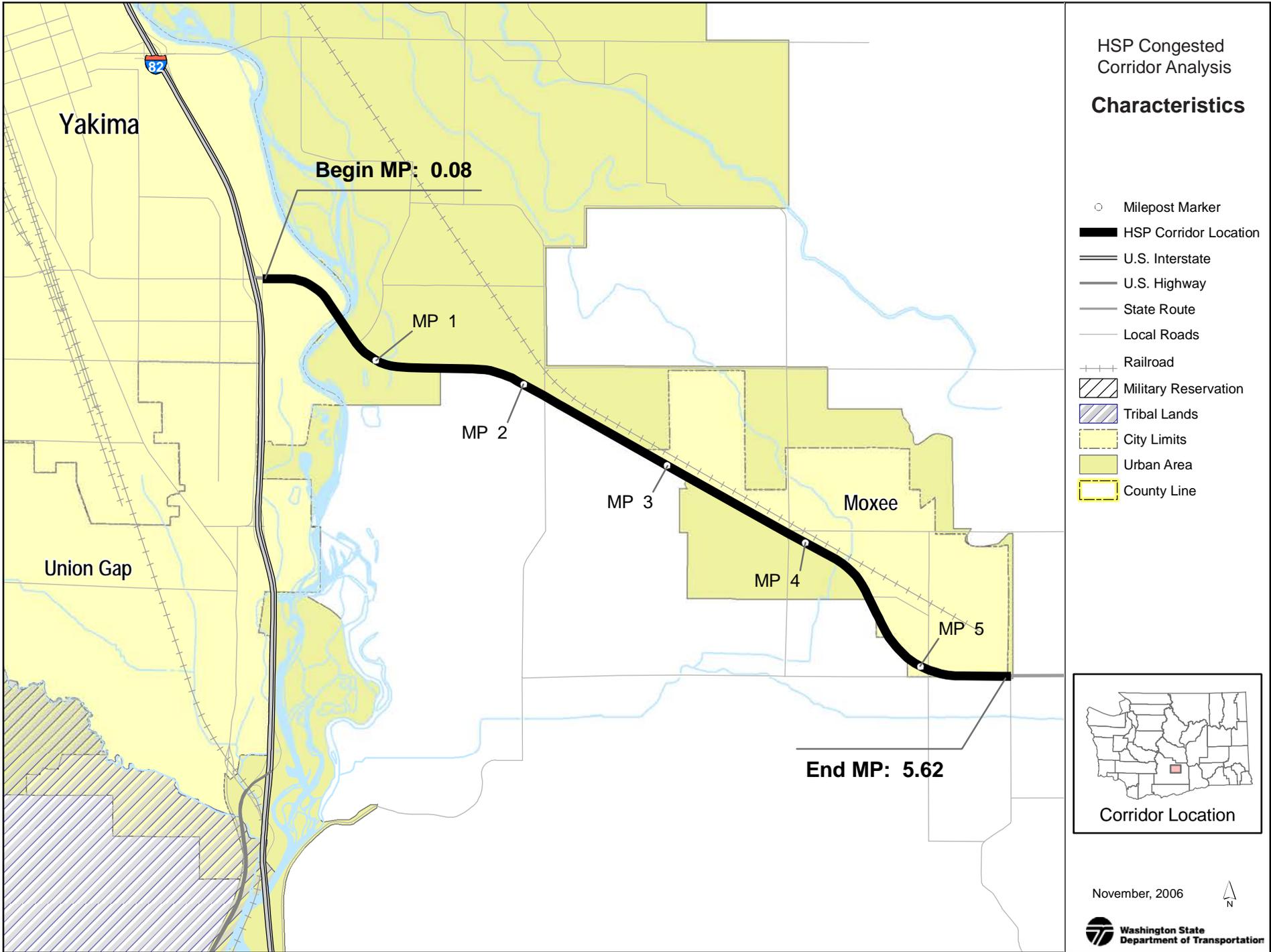
The majority of the land adjacent to this segment is agricultural. The eastern segment of this corridor abuts the City of Moxee.

Environmental Issues:

The route crosses the Yakima River on the western end of the corridor with environmentally sensitive areas adjacent to the highway. The western portion flooded in 1996 doing major damage to public and private lands.

Major Economic Issues:

This segment of SR 24 is the major transportation link connecting the City of Moxee to the City of Yakima and Interstate 82, and an important regional transportation route. SR 24 is only one of two Yakima River crossings in the Yakima Urban Area. SR 24 is a principal agricultural transportation route, and has recently seen a significant increase in residential, industrial, and commercial development. SR 24 is also vital for local trucking firms to access I-82. In the Yakima vicinity, SR 24 provides the sole access to the Yakima Area Arboretum, Robertson Landing Park, K-Mart, Woodpecker Trucking, the Yakima Wastewater Treatment plant, and the Humane Society. Further east of the corridor, SR 24 serves as a major link to the U.S. Department of Energy Hanford Site. SR 24 provides access to a number of recreational areas including the Yakima Area Greenway (a major bicycle-pedestrian pathway paralleling the Yakima and Naches Rivers for several miles), the Yakima Sportsman State Park, a KOA campground, the Hanford Reach National Monument, and the Saddle Mountain National Wildlife Refuge.



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ASSETS

Pavement:

There are 10.98 lane miles of Hot Mix Asphalt on this segment of SR 24.

Signal:

There are five signalized intersections at I-82 westbound ramp terminals, W. Birchfield Road intersection, Riverside Road intersection, Birchfield Road intersection, and Beaudry Road intersection.

Structures:

There is one structure in this corridor that consists of a Concrete Box Girder.
(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 highway crosses the Yakima River.

ITS Facilities:

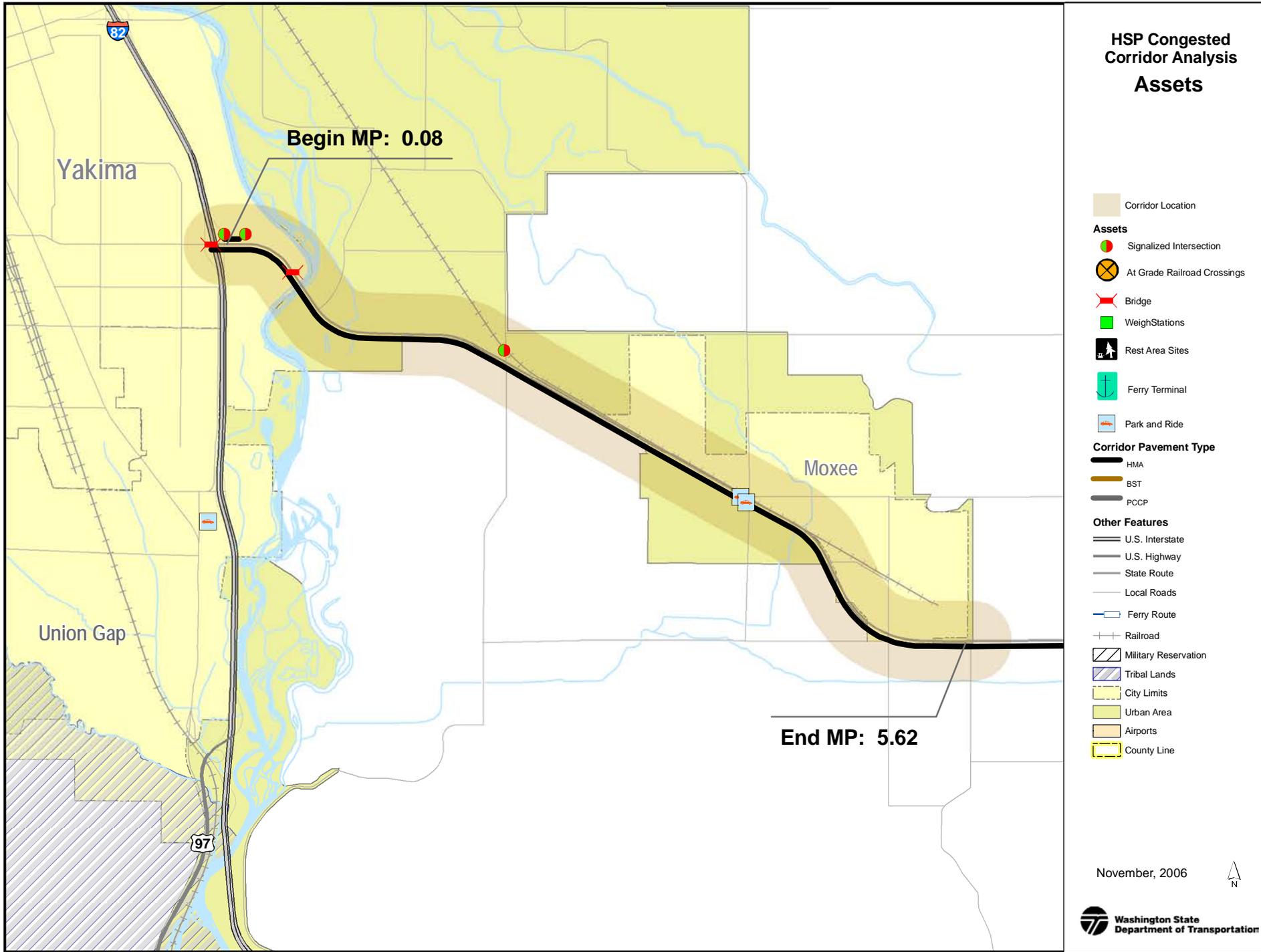
There are no intelligent Transportation systems on this corridor.

Railroad Crossings:

No railroad lines cross this segment of SR 24. However, a Burlington Northern Santa Fe spur line parallels SR 24 for about two miles. It does not cross SR 24, but lies within the functional limits of the SR 24/Beaudry Road intersection (about 100 feet from the edge of SR 24). The City of Moxee plans to construct flashing beacons and crossing gate.

Asset Other:

There is one major airport serving the region (Yakima Air Terminal) located over 3 miles to the west.



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USAGE

General Origin and Destination Travel Characteristics:

The corridor serves as the major transportation link connecting the City of Moxee to the City of Yakima and Interstate 82. This segment of SR 24 is an important route for transporting agricultural products. This corridor has seen significantly increased residential, industrial, and commercial development in recent years. Further east of the corridor, SR 24 serves a major link the U.S. Department of Energy Hanford Site, the Hanford Reach National Monument, and the Saddle Mountain National Wildlife Refuge . SR 24 is important for the regional transportation of goods and services. On the western end of the corridor, SR 24 provides the sole access to the Yakima Area Arboretum, K-Mart, Woodpecker Trucking, the Yakima Wastewater Treatment plant, and the a couple of other smaller businesses. SR 24 also provides access the Yakima Area Greenway, a major bicycle-pedestrian pathway paralleling the Yakima and Naches Rivers for several miles.

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 5,400 to 19,000.

Significant Seasonal Average Annual Daily Traffic Changes:

There are significant seasonal variation in traffic volumes in this corridor. Traffic volumes increase during harvest times, and particularly, during hop harvest.

General Description of Major Average Annual Daily Traffic Locations:

The average daily traffic is 19,000 near the I-82 ramps, 11,000 east of Birchfield Road; and 5,400 east of Bell Road.

Freight:

Freight Classification: T1

Yearly Tonnage: 9.1M

Truck Percentage of Annual Average Daily Traffic: 21%

Additional Usage Comments:

There is a feasibility study to construct Black Rock Reservoir several miles east of this segment. If the reservoir is built, SR 24 will need to be relocated. If Black Rock Reservoir is developed, it is anticipated that there will be a significant increase in recreational traffic destined for the site, and that a significant portion of the traffic would utilize this segment of SR 24.

The Bureau of Reclamation is interested in seeing the levees removed along the east side of the Yakima River. This would have several environmental benefits including slowing the river speed during flood events reducing erosion and allowing more of the sediment to be dropped, improving water quality, allowing the river to meander more naturally, improving the habitat for fish and wildlife, and expanding and enhancing wetlands. The Bureau is in the process of buying properties at this time to allow for the eventual removal of levee(s). Due to this eventual plan, the new Yakima River bridge more than doubled in length in the current SR 24 improvement project from I-82 to Riverside Road to accommodate the future levee removal.

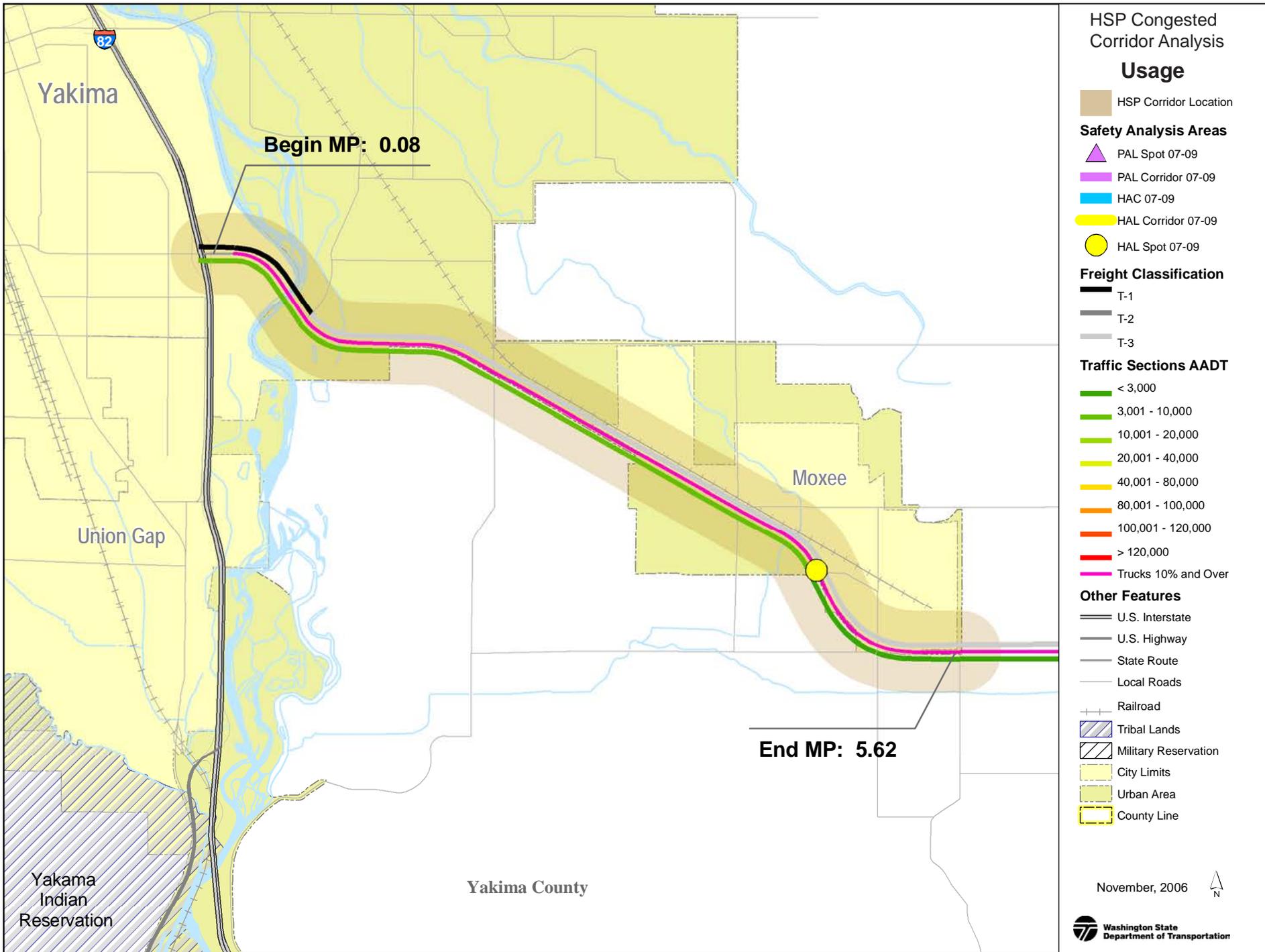
Average Annual Societal Cost of All Collisions: Approximately\$1.06M

Collisions:

Severe No of Collisions: 2

Less Severe No of Collisions: 83

List Data Years: 2003 to 2005



Yakima

Begin MP: 0.08

Union Gap

Moxee

Yakama Indian Reservation

Yakima County

End MP: 5.62

82

SR 24 - I-82 TO FAUCHER ROAD

NEEDS AND STRATEGIES

Preservation

Pavement Condition and Needs:

This section of SR 24 is hot mix asphalt (HMA) and this segment of SR 24 was last resurfaced in 1999. The expected remaining pavement life is 3 years.

Pavement Management Strategies:

There is a pavement project planned for this segment in the 2007 to 2009 biennium. The project would include spot pavement repair followed by overlaying with asphalt.

Structures Condition and Needs:

1 Bridge: SR 24, MP 0.57, Bridge #024/005 - bridge over the Yakima River (This may include ramps and locally owned structures if any exist.)

Structures Management Strategies:

There are none identified.

Additional Condition and Needs:

There is a major Terrace Heights Sewer District sewer line that intersects and parallels SR 24. The sewer line intersects SR 24 at Keys Road (MP 0.84) and parallels SR 24 across the Yakima River on the bridge until near MP 0.50 where it heads to the Yakima Urban Area Wastewater Treatment Plant.

Additional Management Strategies:

The Terrace Heights Sewer District is in the process of making improvements to their system including expanding their sewer line capacity and constructing a lift station. No improvements to this system are planned as part of this submittal.

Improvement

Mobility Condition and Needs:

There are pockets of congestion near the City of Moxee. Future development on the existing 2-lane facility between Beaudry and Faucher Roads will increase congestion particularly during the AM and PM peak hour periods.

Mobility Management Strategies:

Extend the 4-lane section of SR 24 past Moxee. This will substantially increase the capacity for this important region link. The land along this segment is poised for substantial development. The additional capacity will accommodate this growth. Construct two new interchanges (Birchfield Road & Beaudry Road), and build a frontage road to Bell Road. This will significantly enhance the mobility safety, mobility, and operation of this segment of SR 24. In addition, constructing the Beaudry Road interchange will allow an added benefit. The crossover can be extended over the existing BNSF railroad tracks eliminating the at-grade intersection with the rail lines improving mobility and safety.

Safety Condition and Needs:

44% of the accidents are rear-ends. Another 16% are associated with left-turns, and 15% 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:

Signalize the three unsignalized intersections (Bell, Rivard, & Faucher Roads) to enhance safety and maintain acceptable level-of-service for those intersections adjacent to the City of Moxee. Adding right-turn lanes at all the intersections will reduce accidents and improve mobility in this corridor. Reduce run-off-the road accidents by installing shoulder rumble strips.

Environmental Condition and Needs:

SR 24 crosses through the Yakima River floodway and floodplain. There are some wetlands in these areas in the vicinity of SR 24.

Environmental Management Strategies:

No improvements to SR 24 planned within this environmentally-sensitive area as part of this submittal.

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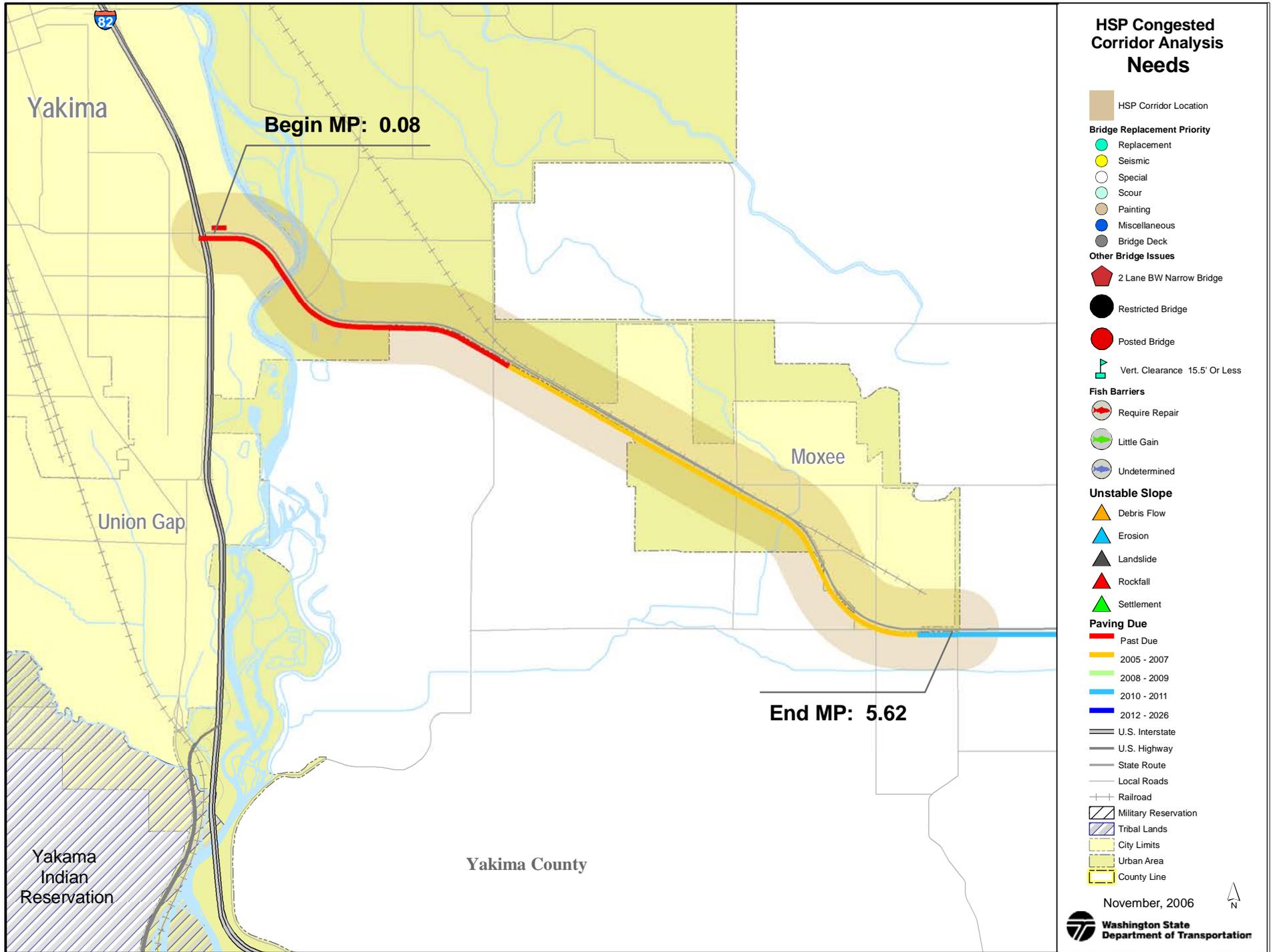
Restrictions:

There are none identified.

50-Year Configuration:

We expect this corridor to become fully urbanized 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 SR 24 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.

If Black Rock Reservoir is developed, it is anticipated that there will be a significant increase in recreational traffic to and from the site using this segment of SR 24. If the levees on the east side of the Yakima River are eventually removed, flood damage to public and private property should be reduced and wetland habitat expanded. Any projects along this SR 24 segment will have additional environmental impacts to address. The U.S. Department of Energy Hanford Site (and the newly created Hanford National Monument) could be converted into a national recreational area. This would further increase the recreational traffic in this corridor, but commuting traffic east of Moxee would be substantially reduced.



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TIERED PROPOSED SOLUTIONS

Minimum Fix

Description:

Signalize Bell, Rivard, and Faucher Roads intersections. Install rumble strips.

Delay Reduction: None identified.

Collision Reduction: None identified.

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: 1.3 M

Cost Estimate Explanation:

The calculated present value cost of 1.3 million, for the minimum fix, yields a benefit of 10.7 million Net Present Value. The Benefit/Cost Ratio is 9.20.

Minimum Fix Benefits:

Signalize the three unsignalized intersections to enhance safety and maintain acceptable level-of-service for those intersections adjacent to the City of Moxee. Reduce run-off-the road accidents by installing shoulder rumble strips.

Moderate Fix

Description:

Extend the 4-lane section of SR 24 from Riverside Road to Faucher Road. Add right-turn lanes to all intersections (Birchfield, Beaudry, Bell, Rivard, and Faucher Roads). Signalize Bell, Rivard, and Faucher Roads intersections. Install rumble strips.

Delay Reduction: None identified.

Collisions Reduction: None identified.

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: 15.3 M

Cost Estimate Explanation:

The calculated present value cost of 15.3 million, for the moderate fix, yields a benefit of 132.0 million Net Present Value. The Benefit/Cost Ratio is 9.65.

Moderate Fix Benefits:

Extending the 4-lane section of SR 24 past Moxee will significantly increase the capacity for this important region link. The land along this segment is poised for substantial development. The additional capacity will accommodate this growth. Signalizing the three unsignalized intersections will enhance safety and maintain acceptable level-of-service for those intersections adjacent to the City of Moxee. Adding right-turn lanes at all the intersections will reduce accidents and improve mobility in this corridor. Reduce run-off-the road accidents by installing shoulder rumble strips.

Maximum Fix

Description:

Construct two new interchanges, one at Birchfield Road and one at Beaudry Road. Close SR 24/Bell Road intersection, and construct frontage road from Beaudry Road to Bell Road. Build railroad overcrossing over rail line at the SR 24/Beaudry Road intersection. Extend the 4-lane section of SR 24 from Riverside Road to Faucher Road. Add right-turn lanes to all intersections (Birchfield, Beaudry, Bell, Rivard, and Faucher Roads). Signalize Bell, Rivard, and Faucher Roads intersections. Install rumble strips.

Delays Reduction: None identified.

Collisions Reduction: None identified.

Deficient Concrete Lane Miles: None identified.

Total Estimate Cost: \$24.7 M

Cost Estimate Explanation:

The calculated present value cost of 24.7 million, for the maximum fix, yields a benefit of 123.0 million Net Present Value. The Benefit/Cost Ratio is 5.99.

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Maximum Fix Benefits:

Constructing the two new interchanges, and closing the Bell Road intersection will significantly enhance the safety, mobility, and operation of SR 24. In addition, constructing the Beaudry Road interchange allow an added benefit. The crossover can be extended over the existing BNSF railroad tracks eliminating the at-grade intersection with the rail lines. (The railroad crossing is constructed within the functional limits of the intersection. There is a potential for safety and operational concerns with this existing layout. These concerns will be further exacerbated as the traffic volumes increase, and the number and percentage of truck traffic increases. Building an overcrossing over the railroad will remove the road/rail conflict).

Extending the 4-lane section of SR 24 past Moxee will significantly increase the capacity for this important region link. The land along this segment is poised for substantial development. The additional capacity will accommodate this growth. Signalizing the three unsignalized intersections will enhance safety and maintain acceptable level-of-service for those intersections adjacent to the City of Moxee. Adding right-turn lanes at all the intersections will reduce accidents and improve mobility in this corridor. Reduce run-off-the road accidents by installing shoulder rumble strips.

Off-System Solutions:

Possibly re-align the Burlington Northern Santa Fe Railroad spur line to the north to allow greater separation between SR 24 and the rail line.

Special Studies/Reports:

RDP being developed for SR 24 corridor

SR 24 Corridor Study (1991) - from Yakima River to Faucher Road

Required Studies

None identified.

Start/Completion Date of Study:

None identified.

Expected Results

None identified.

Funded Projects within Corridor Limits

Project No	Title
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502403A/MS295	SR 24/Keys Road Intersection - Reconstruct Intersection
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502403H/XL075	SR 24/Riverside Road Intersection Improvements - Channelization Improvement
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0L 3549	SR 24/I-82 to Keys Road - Widen to 4 Lanes (Nickel Funds)
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502403J	SR 24/Keys Road to Moxee - Pavement Restoration Project programmed for 2007-2009 biennium
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Additional Comments:

None identified.

Data Sources and Contacts used:

Collision Data Mart

2004 Annual Traffic Report

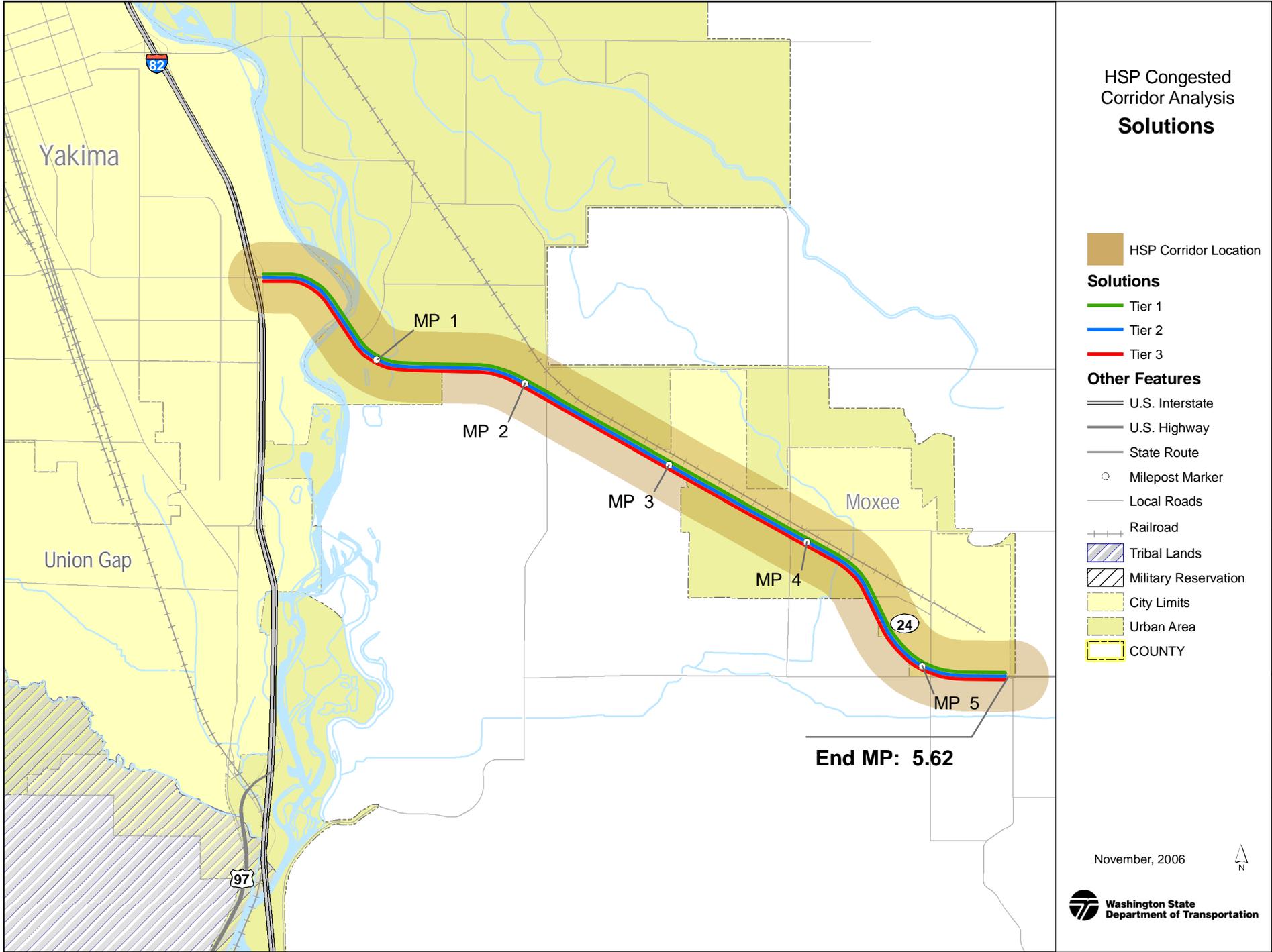
2005 State Highway Log

2003-2022 Washington State Highway System Plan

Pavement Management System

Geographic Information System

SR 24 Corridor Study - Final Study Report (CH2MHill, February 1991)



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

November, 2006

