

## SR 224 - MP 6.59 TO MP 9.90

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### **CHARACTERISTICS**

#### **Segment Description:**

MP 6.59 lies within the city limits of West Richland. The corridor runs through West Richland and ends at MP 9.90, the intersection of SR 240 in Richland.

**County/Counties:** Benton

**Cities/Towns Included:** This corridor runs through West Richland.

**Number of lanes in the corridor:** 2 to 4

**Lane width:** 12 to 12 feet.

**Speed limit:** 40 to 40 mph.

**Median width:** 0 to 0 feet.

**Shoulder width:** 4 to 8 feet.

#### **Highway Characteristics:**

This section of highway is classified as a urban-minor arterial.

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

Two way left turn lane at milepost 7.57 to MP 9.90.

#### **Access Control Type(s):**

From MP 6.59 to MP 9.84 SR 224 is a Managed Access highway that varies from class 3 to class 5. From MP 9.84 to MP 9.90 SR 224 has established Partial Access Control.

#### **Terrain Characteristics:**

The terrain in this section is rolling.

#### **Natural Features:**

This section allows access to grape growing areas around Benton City and West Richland. The Red Mountain Appellation is along this route.

#### **Adjacent Land Description:**

The land uses along this route are varied from commercial and residential closer to downtown to light and heavy industrial, to agriculture and open rangeland.

#### **Environmental Issues:**

The surrounding area of this route section are considered to be semiarid with many varieties of small and larger animals and birds that reside there. Some of these species could be threatened or endangered. There are few if any wetland issues in this area.

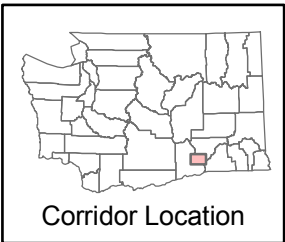
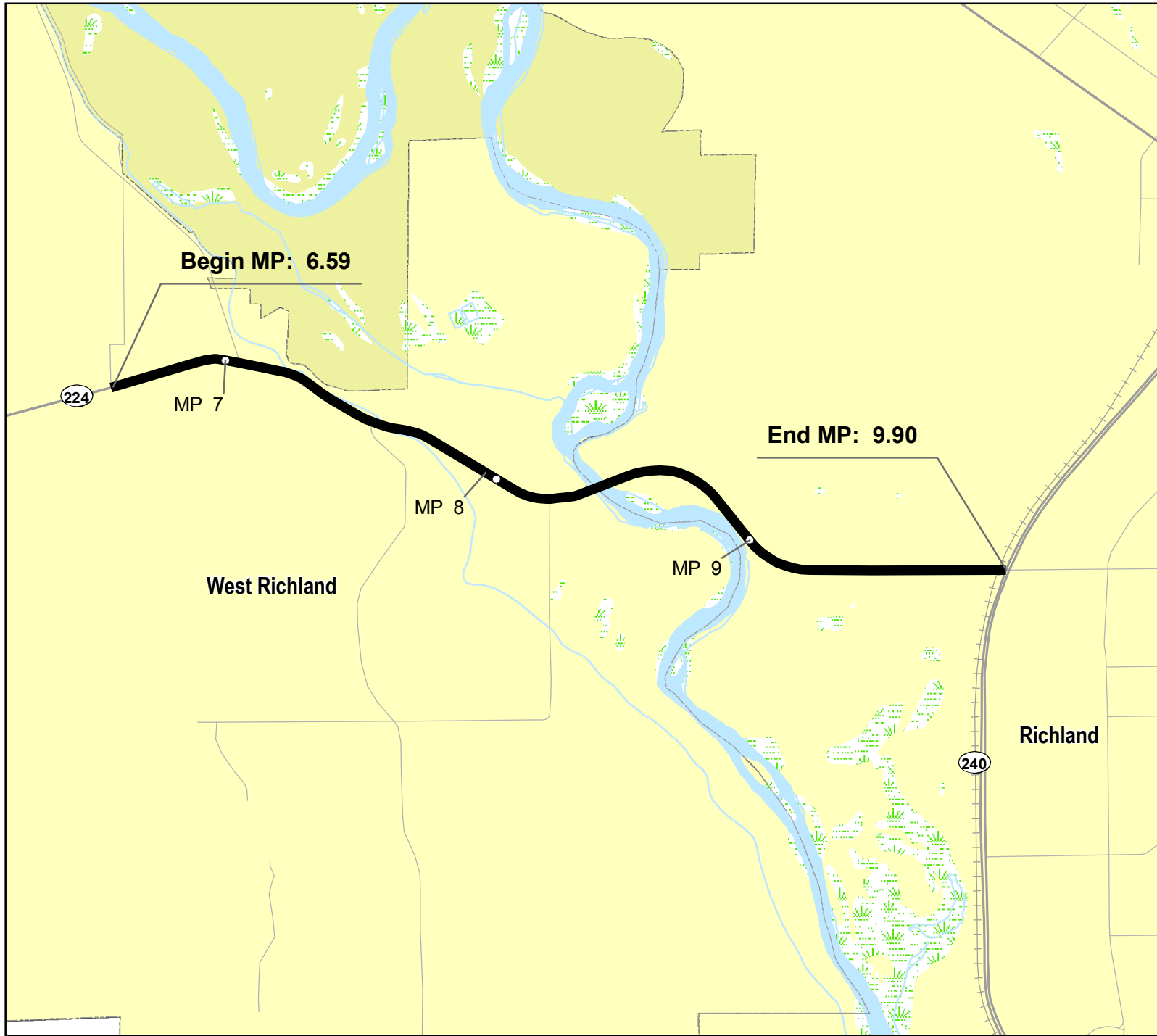
#### **Major Economic Issues:**

There are none defined.

# 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



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### **ASSETS**

#### **Pavement:**

There are 12.30 lane miles of Hot Mix Asphalt and 4.25 lane miles of Bituminous Surface Treatment on this segment of SR 224 .

#### **Signal:**

There is one signalized intersection.

#### **Structures:**

There are three structures in this corridor that consist of: one Concrete Culvert, one Concrete Slab and one Pre-Tensioned Concrete 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 section crosses the Yakima River and an irrigation canal.

#### **ITS Facilities:**

There are no intelligent Transportation systems on this corridor.

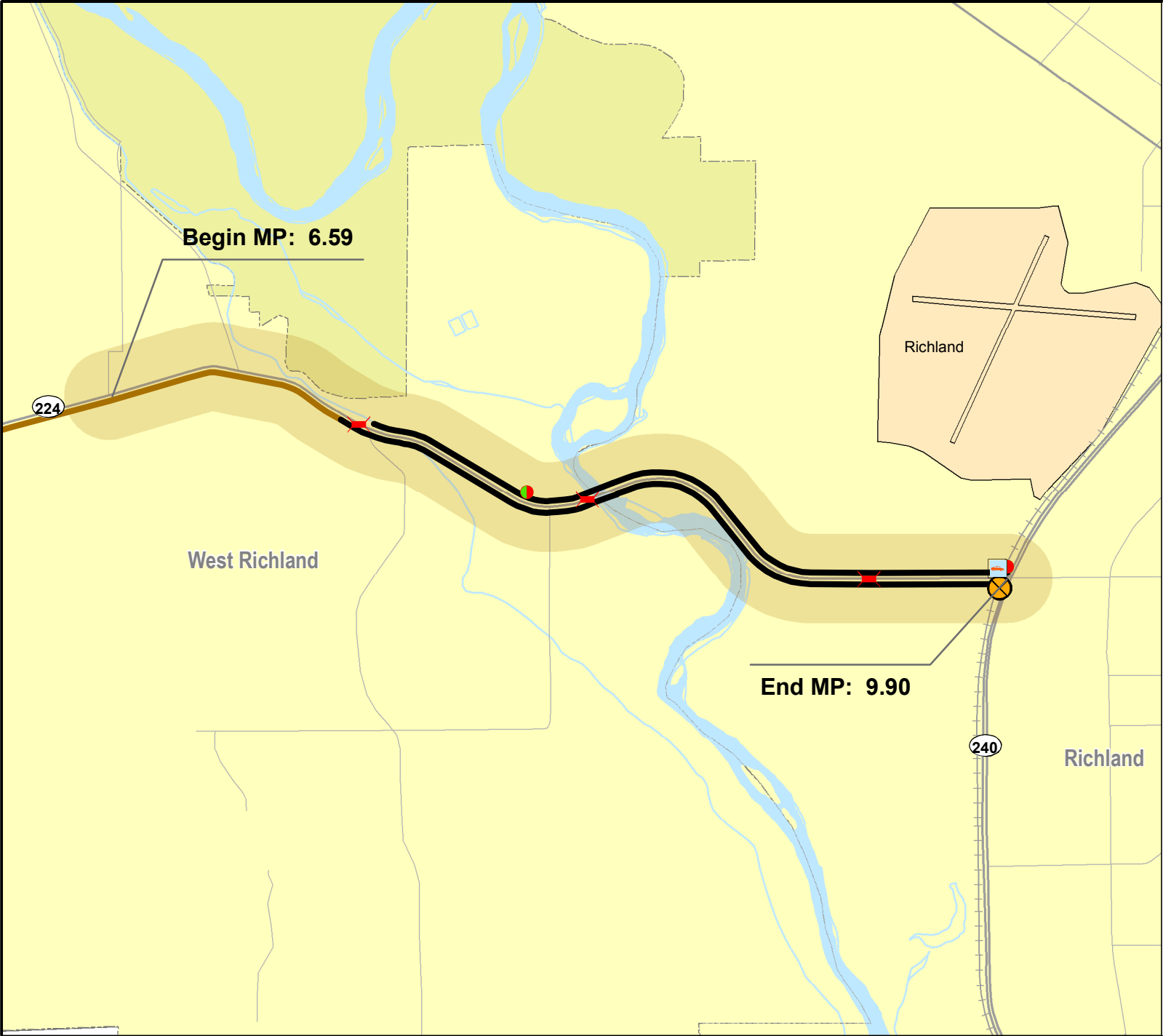
#### **Railroad Crossings:**

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

#### **Asset Other:**

None Identified.

# HSP Congested Corridor Analysis Assets



Corridor Location

**Assets**

- Signalized Intersection
- At Grade Railroad Crossings
- Bridge
- Weigh Stations
- Rest Area Sites
- Ferry Terminal
- Park and Ride

**Corridor Pavement Type**

- HMA
- BST
- PCCP

**Other Features**

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

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**USAGE**

**General Origin and Destination Travel Characteristics:**

This route section supports a pretty even split of commuter traffic commuting back and forth between Benton City, West Richland and the Hanford and Richland areas and local residents traveling to and from activities in West Richland. Truck traffic is minor and local.

**Snow/ice Issues:**

There are minor snow and ice issues with existing curbing, intersections, and driveways.

**Annual Average Daily Traffic:**

Ranges from 11,000 to 21,000.

**Significant Seasonal Average Annual Daily Traffic Changes:**

At present there is not a significant change seasonally in ADT

**General Description of Major Average Annual Daily Traffic Locations:**

Traffic volumes increase through the route segment, from 4,700 at the beginning of the segment to 21,000 before the intersection with SR 240.

**Freight:**

**Freight Classification:** T3

**Yearly Tonnage:** 2.0M

**Truck Percentage of Annual Average Daily Traffic:** 8%

**Additional Usage Comments:**

There are no additional comments.

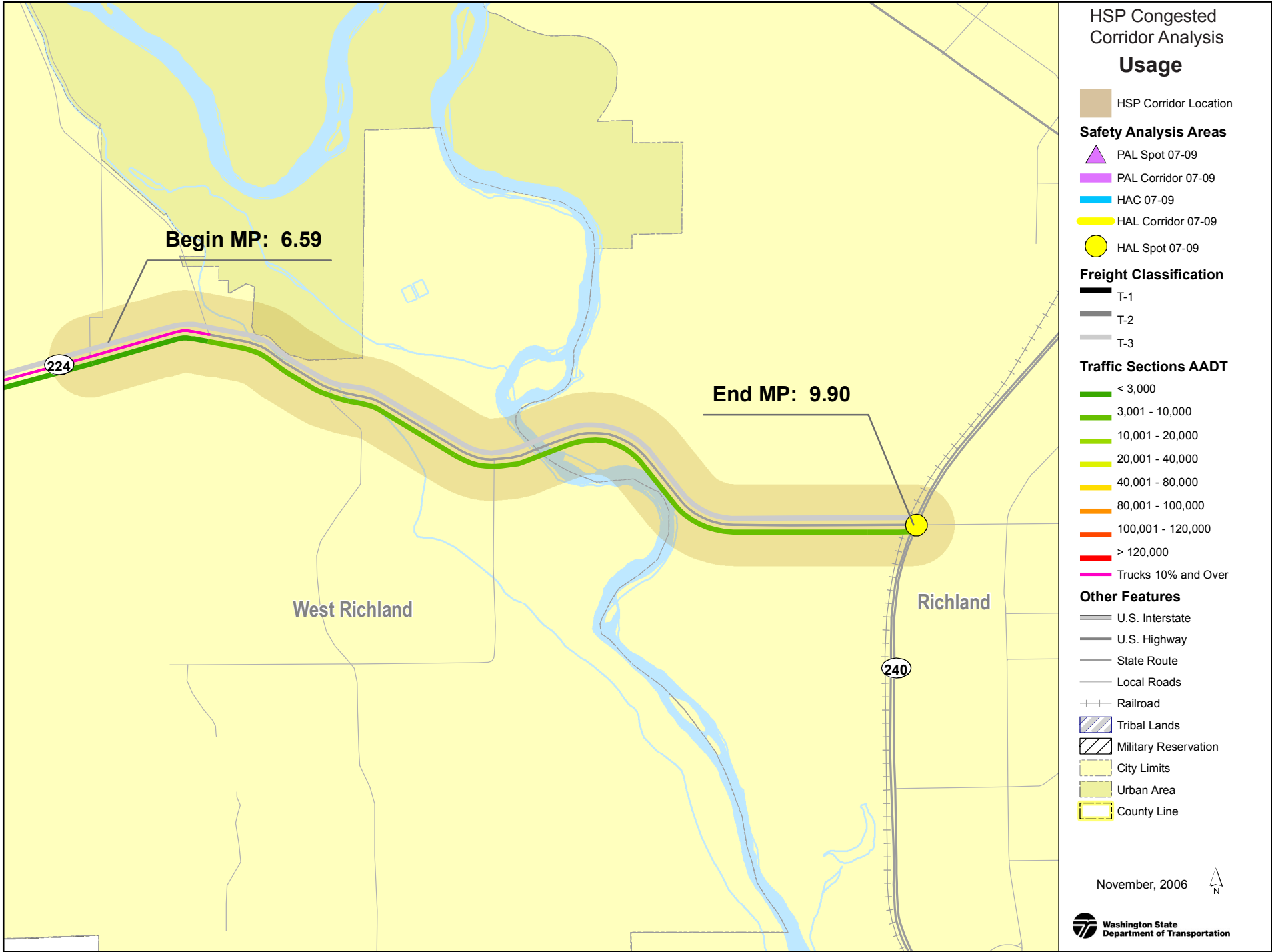
**Average Annual Societal Cost of All Collisions:** Approximately \$4.88M

**Collisions:**

**Severe No of Collisions:** 3

**Less Severe No of Collisions:** 67

**List Data Years:** 2003 to 2005



## ***NEEDS AND STRATEGIES***

### **Preservation**

#### **Pavement Condition and Needs:**

The bituminous surface treatment section from MP 6.59 to MP 7.44 was last paved in 1999 and was due for resurfacing in 2005.

#### **Pavement Management Strategies:**

This section is scheduled for resurfacing as a part of the 2006 region wide chip seal project

#### **Structures Condition and Needs:**

There are none described. (This may include ramps and locally owned structures if any exist.)

#### **Structures Management Strategies:**

There are none identified.

#### **Additional Condition and Needs:**

There are none identified.

#### **Additional Management Strategies:**

There are none identified.

### **Improvement**

#### **Mobility Condition and Needs:**

This section of SR 224 experiences traffic back-ups beginning at 5:30 am Monday through Friday.

#### **Mobility Management Strategies:**

By adding two general purpose (GP) lanes and a two way left turn lane (two way left turn lane (TWLTL)) in the existing two lane section traffic will flow more freely.

#### **Safety Condition and Needs:**

This section of SR 224 experiences many rear-end type accidents due to slowing traffic caused by congestion and inattentive drivers.

#### **Safety Management Strategies:**

Adding a mile of two general purpose lanes and a two way left turn lane (TWLTL) will cause a more free flowing traffic stream and reduce severity of rear-end type collisions.

#### **Environmental Condition and Needs:**

There are none identified.

#### **Environmental Management Strategies:**

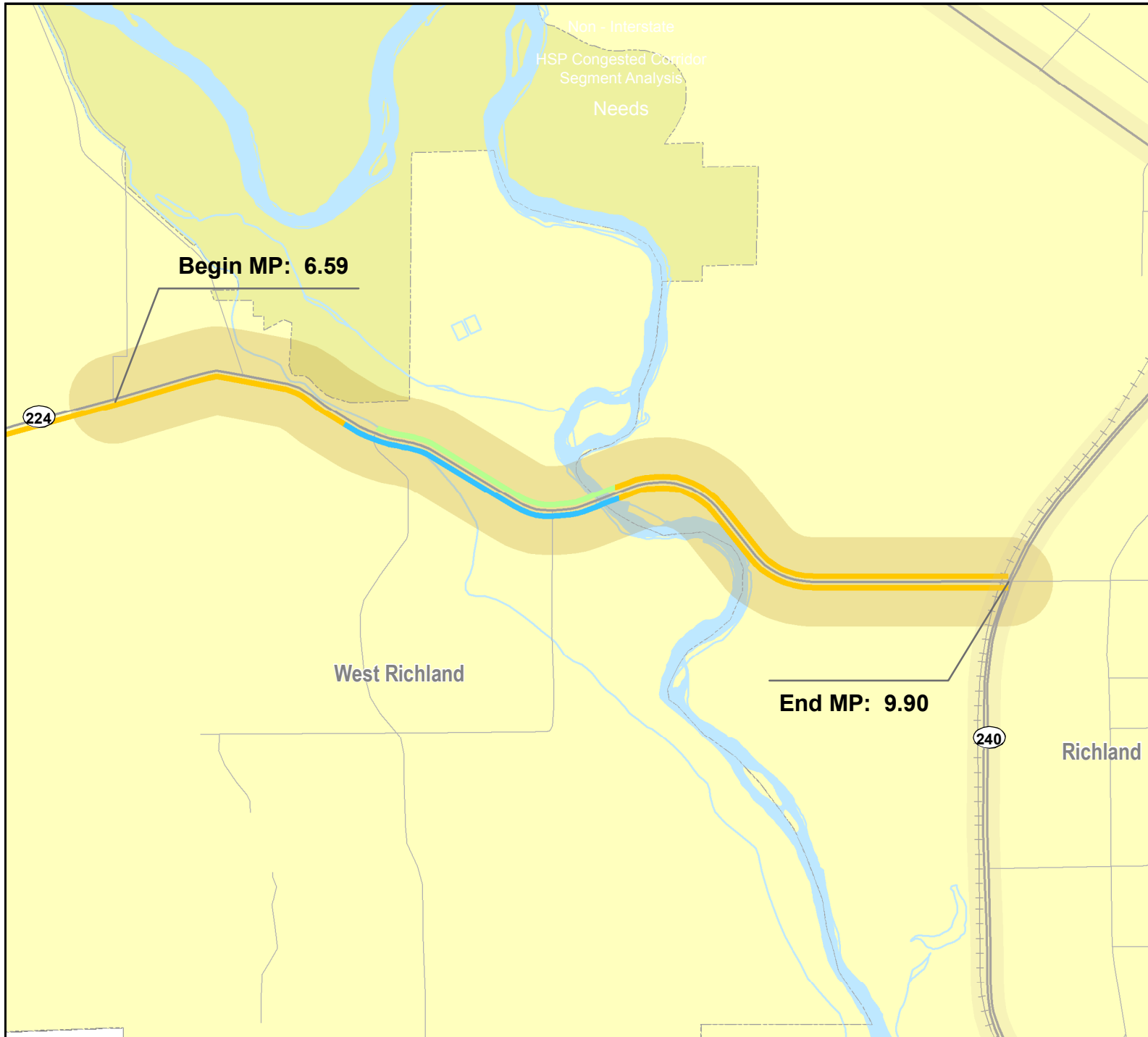
There are none identified.

#### **Restrictions:**

There are none identified.

#### **50-Year Configuration:**

During the next 50 years this corridor will continue to infill and become mostly urbanized. The exception to this will likely be the Red Mountain Appalachia that will continue to be a prime grape and wine producing area. The Red Mountain area is expected to draw close to 1,000,000 tourist visitors per year.



## 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
- County Line

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## ***TIERED PROPOSED SOLUTIONS***

### **Minimum Fix**

**Description:**

This low cost proposal will add right turn lanes at intersections at MP 7.56, MP 8.01, and MP 8.10. It will also add signal systems at MP 7.68 and 8.23.

**Delay Reduction:** None identified.

**Collision Reduction:** None identified.

**Deficient Concrete Lane Miles:** None identified.

**Total Estimate Cost:** \$1.4 M

**Cost Estimate Explanation:**

This estimate is based on adding right turn lanes at intersections, adding signals and interconnecting signals.

**Minimum Fix Benefits:**

This project will serve to maintain an acceptable level of service on the facility and to enhance safe operations in areas where turning movements are creating congestion and delay. There are \$20.3 in safety benefits associated with this project.

### **Moderate Fix**

**Description:**

This medium cost proposal will add a two way left turn lane (TWLTL) in the two lane section as well as adding two signal systems and right turn lanes at three intersections.

**Delay Reduction:** None identified.

**Collisions Reduction:** None identified.

**Deficient Concrete Lane Miles:** None identified.

**Total Estimate Cost:** \$4.1 M

**Cost Estimate Explanation:**

This estimate is based on constructing a two way left turn lane (TWLTL) in the two lane section as well as adding two signal systems and right turn lanes at intersections.

**Moderate Fix Benefits:**

This project will serve to maintain an acceptable level of service on the facility and to enhance safe operations in areas where turning movements are creating congestion and delay. There are \$5.9 M in two way left turn lane (two way left turn lane (TWLTL)) benefits and \$20.2 M in safety benefits associated with this project.

### **Maximum Fix**

**Description:**

This maximum cost proposal will add two new GP lanes and a two way left turn lane (TWLTL) in the two lane section as well as adding two signal systems and right turn lanes at three intersections.

**Delays Reduction:** None identified.

**Collisions Reduction:** None identified.

**Deficient Concrete Lane Miles:** None identified.

**Total Estimate Cost:** \$8.4 M

**Cost Estimate Explanation:**

This estimate is based on constructing two new GP lanes and a two way left turn lane (TWLTL) in the existing two lane section as well as two signal systems and right turn lanes at three intersections

**Maximum Fix Benefits:**

This project will serve to maintain an acceptable level of service on the facility and to enhance safe operations in areas where turning movements are creating congestion and delay. There are \$6.2 M in two way left turn lane (TWLTL) benefits, \$57.9 M ingeneral purpose lane benefits and \$20.3 M in safety benefits associated with this project.

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### **Off-System Solutions:**

None identified.

### **Special Studies/Reports:**

None identified.

### **Required Studies**

None identified.

### **Start/Completion Date of Study:**

None identified.

### **Expected Results**

None identified.

### **Funded Projects within Corridor Limits**

<b>Project No</b>	<b>Title</b>
522402B	SR 224/Yakima River to SR 240 - Paving (HMA)

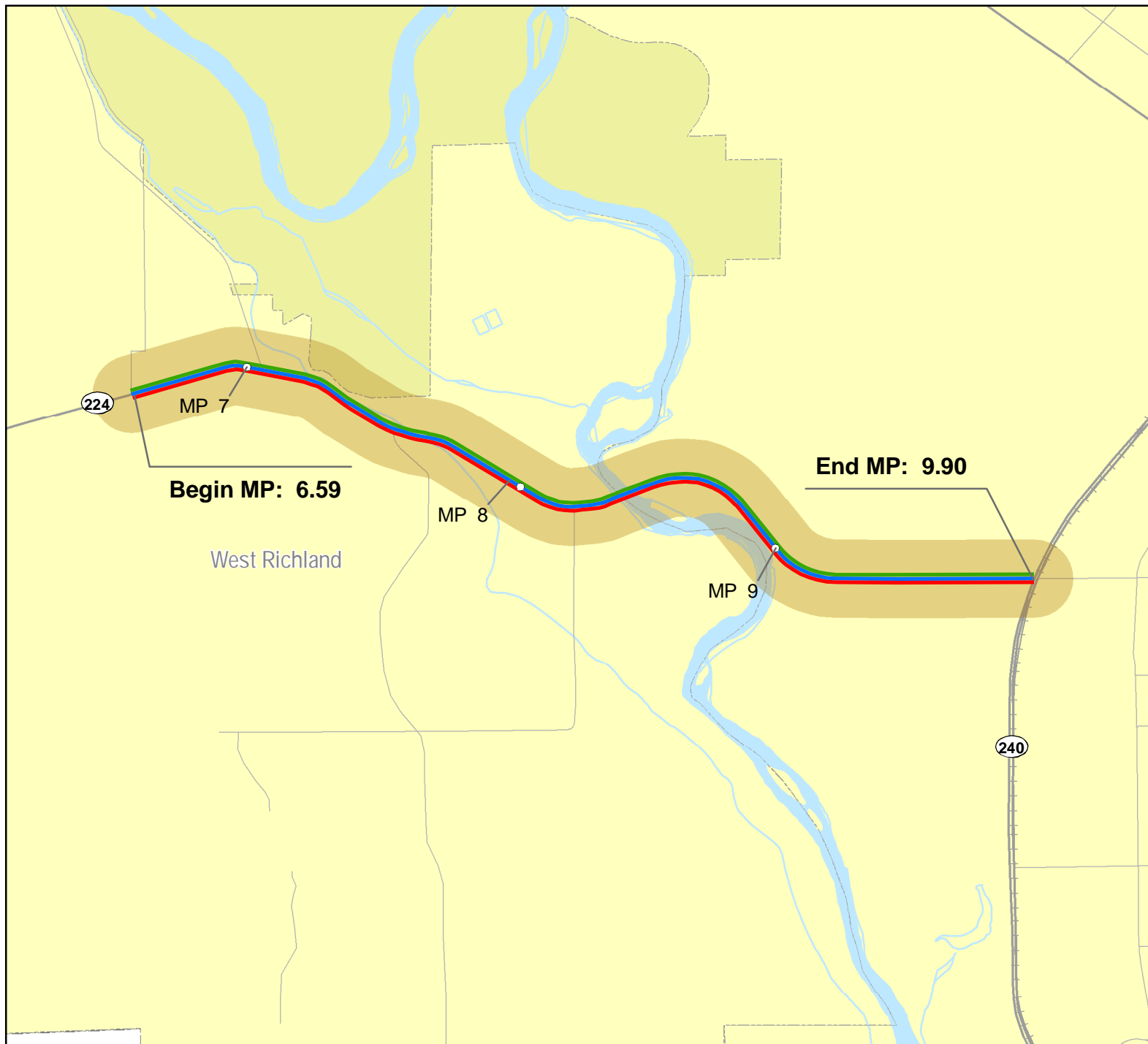
### **Additional Comments:**

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

# 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

