

DRAFT

Technical Memorandum 6

---

CONCEPTS AND EVALUATION

---

IAMP 21

Interchange Area Management Plan for the  
Interstate-5 Exit 21 Interchange

December 30, 2014

Oregon Department of Transportation  
Region 3

# INTRODUCTION

This memorandum presents and evaluates concepts for possible inclusion in the interchange area management plan (IAMP) for the Interstate 5 (I-5) interchange at Exit 21 in Talent, Oregon. The concepts address deficiencies within the Interchange 21 Area of Primary Impact (API). Deficiencies were identified in Technical Memorandum 5, Existing and Future Deficiencies, related to vehicular traffic, non-vehicular travel, roadway standards, and access spacing. Technical Memorandum 5 identified no deficiencies regarding freight movement, safety, or facilities used by racial and ethnic minorities, low-income persons, the physically and mentally disabled, or the elderly. The purpose of the memorandum is to help in deciding which concepts to include in the IAMP and how the included concepts should be modified.

Concepts are proposed in three areas within the API. Figure 1 shows the API.

- **Urban Area** – These concepts focus on the urban section of West Valley View Road, which is from OR 99 to the I-5 southbound ramps, and include improvements to sidewalks, bike lanes, travel lanes, and access points. The concepts include three-lane and five-lane alternatives because these are being considered as part of the on-going City of Talent Transportation System Plan update process.
- **Interchange Area** – These concepts address bridge and ramp deficiencies at the interchange, itself.
- **Rural Area** – These concepts address the rural section of West Valley View Road from the I-5 northbound ramps to Suncrest Road and include improvements to shoulders, travel lanes, and access spacing.

No concepts for Transportation Demand Management, Transportation System Management, or changes to land use plans, zoning, or zoning regulations are proposed. This is because forecasted intersection performance in 2038, taking into account allowed development in the API and forecasted development elsewhere in Talent and the region, falls well within the applicable standards. This is documented in Technical Memorandum 5, Existing and Future Deficiencies. Amendments to Talent Zoning Code development regulations may be necessary to implement the concepts for improvements to West Valley View Road included in this memorandum.

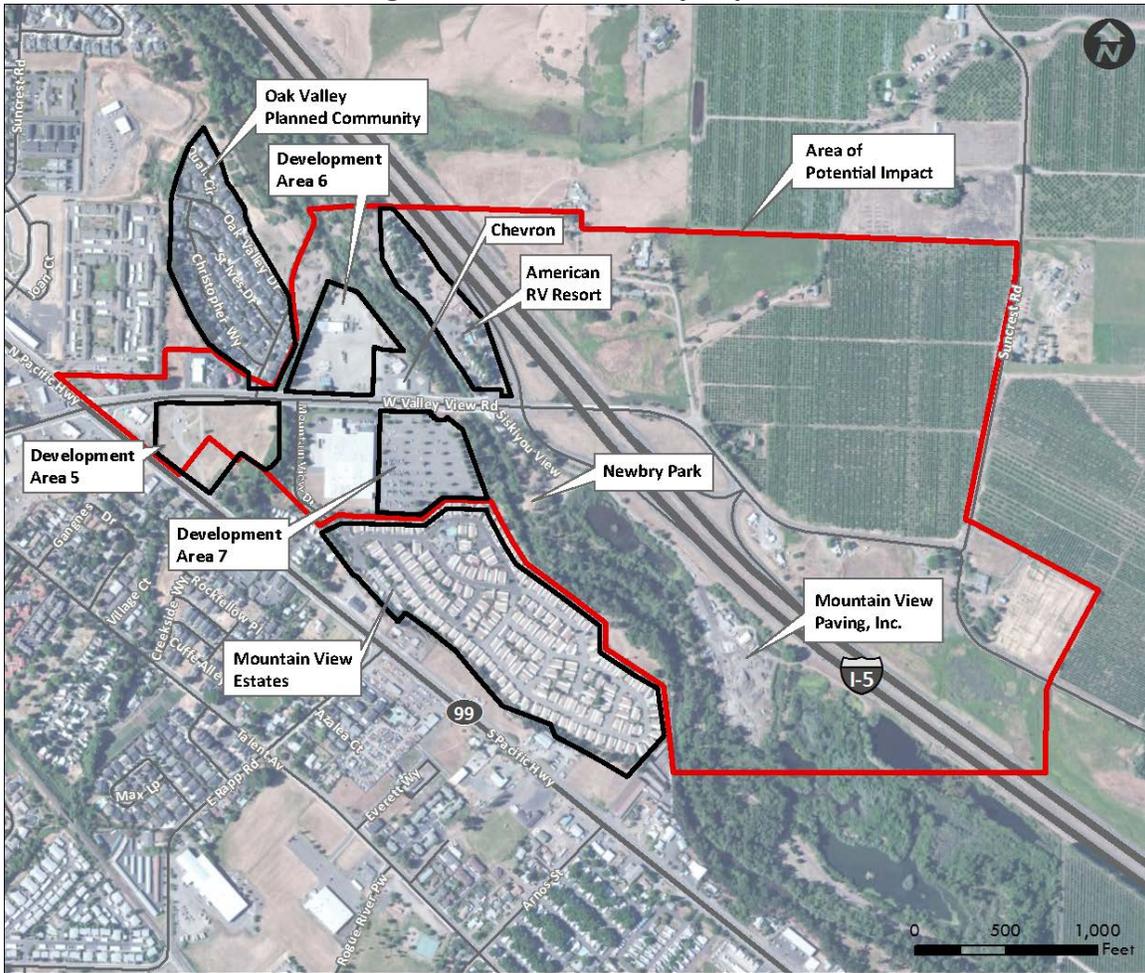
## EVALUATION METHODOLOGY

### TRAFFIC OPERATIONS

Traffic operations with the proposed concepts were evaluated for future operational deficiencies using volume-to-capacity (v/c) ratios and level of service (LOS) ratings under forecasted 2038 conditions. Results for state roadway segments were compared to the mobility standards in the Highway Design Manual and results for City and County roadway segments were compared to their standards.

1

Figure 1. Area of Primary Impact



2

3

#### 4 ROADWAY GEOMETRIES AND RIGHT-OF-WAY REQUIREMENTS

5 Infrastructure improvements and access consolidation as a result of roadway  
6 geometry and/or ROW needs were identified. Concept drawings illustrate proposed  
7 cross sections.

#### 8 ENVIRONMENTAL RESOURCES

9 Impacts to environmental resources were assessed using the information in  
10 Technical Memorandum 2, Existing Conditions.

#### 11 FREIGHT IMPACTS/BENEFITS

12 Impacts/benefits to freight traffic were evaluated by assessing how each concept  
13 would affect truck movement.

1 **IMPACTS/BENEFITS FOR RACIAL AND ETHNIC MINORITIES,**  
 2 **LOW-INCOME PERSONS, THE PHYSICALLY AND MENTALLY**  
 3 **DISABLED, AND THE ELDERLY**

4 Each concept was assessed for its effect on low-income residents of the American  
 5 RV Resort located next to the Exit 21 Interchange and elderly persons living in the  
 6 Oak Valley Planned Community and Mountain View Estates subdivisions. Technical  
 7 Memorandum 2, Existing Conditions, found that these were the only populations of  
 8 racial and ethnic minorities, low-income persons, the physically and mentally  
 9 disabled, and the elderly potentially affected by IAMP measures.

10 **COST ESTIMATES**

11 Rough, order of magnitude cost estimates have been developed for each concept  
 12 using present day dollar. The estimates include a contingency factor but do not  
 13 include ROW costs, utility relocation, or mitigation of hazardous material sites. The  
 14 cost estimates are intended to help differentiate between concepts by  
 15 approximating the relative costs of each project.

16 **URBAN AREA CONCEPTS**

17 Three concepts are proposed to address roadway geometry, ROW standard,  
 18 pedestrian and bicycle facilities, and access deficiencies identified in Technical  
 19 Memorandum 5. Table 1 provides a brief summary of the concepts.

**Table 1. Summary of Urban Area Concepts**

<b>Concept</b>	<b>Location</b>	<b>General Description</b>	<b>Reason</b>
<b>U-1</b>	West Valley View Road, OR 99 to I-5 southbound ramps	<ul style="list-style-type: none"> <li>• Widen to five-lane facility with wider sidewalks, bike lanes and travel lanes to address ROW requirements, design standards, and pedestrian and bicycle travel. Transition back to existing conditions at westbound approach to OR 99 signalized intersection.</li> <li>• Combine access points to decrease the number of conflicts</li> </ul>	Roadway Design Standards and Access Control
<b>U-2</b>	West Valley View Road, OR 99 to I-5 southbound ramps	<ul style="list-style-type: none"> <li>• Restripe section to three-lane facility with wider sidewalks, bike lanes and travel lanes to address ROW requirements, design standards, and pedestrian and bicycle travel. Transition back to existing conditions at westbound approach to OR 99 signalized intersection.</li> <li>• Combine access points to decrease the number of conflicts</li> </ul>	Roadway Design Standards and Access Control
<b>U-3</b>	Hinkley Road and I-5 SB ramp intersections with West Valley View Road	<ul style="list-style-type: none"> <li>• Install single lane roundabouts at Hinkley Road and I-5 SB ramp intersections, in conjunction with three-lane concept U-2, to address access deficiencies and queuing</li> </ul>	Operations and Access Control

20

1 **CONCEPT U-1, FIVE-LANE WEST VALLEY VIEW ROAD FACILITY**

2 Concept U-1 was developed to address ROW, roadway design standard, and access  
 3 deficiencies. See Figure 2. The concept would include the following improvements:

- 4 • Widen West Valley View Road between OR 99 and the I-5 southbound ramps to  
 5 include two 12-foot travel lanes in each direction, a 14-foot center turn lane, 6-  
 6 foot bike lanes, and 8-foot sidewalks.
- 7 • Combine access points along West Valley View Road west of I-5 to better meet  
 8 access spacing requirements. Specifically:
  - 9 ○ If Development Area 7, as shown in Figure 1, were redeveloped, access would  
 10 be limited to the intersection at Hinkley Road.
  - 11 ○ Only one access to West Valley View Road from the south side would be  
 12 allowed between Mountain View Drive and OR 99.
  - 13 ○ Access to Development Area 6 would be limited to Hinkley Road; no direct  
 14 access to West Valley View Road would be allowed.

15 The ROW would be 90 feet wide.

16 **Traffic Operations**

17 Table 2 summarizes traffic operations for concept U-1. Results are reported for all  
 18 intersections within the API west of the I-5 southbound ramps.

**Table 2. Intersection Operations with Concept U-1**

Intersection with West Valley View Road	Movement	V/C Ratio	LOS	Queuing Issues	Applicable Standard <sup>1</sup>
<b>OR 99 (signalized)</b>	Overall	0.53	B	None	v/c 0.85, LOS D
<b>Development Area 5<sup>2</sup></b>	NB L/T/R	0.17	C	None	LOS D
	WBT	0.26	A		
<b>Oak Valley View Road</b>	SB L/R	0.02	B	None	LOS D
	WBT	0.27	A		
<b>Mountain View Road</b>	NB L/R	0.07	B	None	LOS D
	WBT	0.20	A		
<b>Hinkley Road (signalized)</b>	Overall	0.42	B	250-foot WBT queue reaches right-in driveway to Chevron Station	LOS D
<b>Siskiyou View Road</b>	SB L/T/R	0.06	C	None	LOS D
	WBT	0.27	A		

Notes:

1. Mobility/performance standards are taken from Table 10-1 of the 2012 ODOT Highway Design Manual and the Talent TSP.
  2. Figure 1 shows the location of Development Areas 5, 6, and 7.
- EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of service

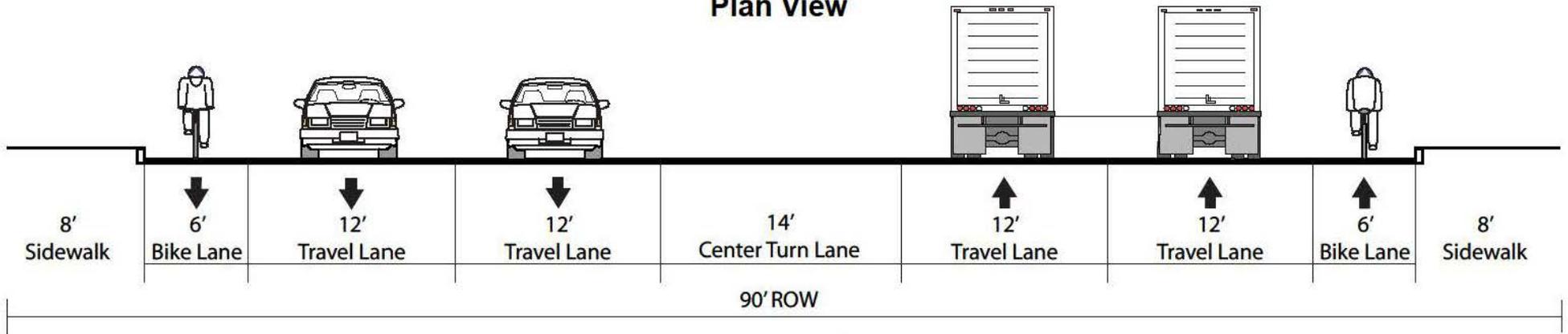
19  
 20  
 21  
 22  
 23

1

Figure 2. Concept U-1, Five-Lane West Valley View Road Facility



Plan View



Cross Section

2

1 **Roadway Geometries and Right-of-Way Requirements**

2 Concept U-1 would address roadway design standards and ROW requirements for  
3 West Valley View Road between OR 99 and the I-5 southbound ramps, as illustrated  
4 in Figure 2. Wider travel lanes, bike and pedestrian facilities, and/or buffer areas are  
5 provided to meet roadway design standards for a major arterial street. The  
6 proposed 90-foot ROW is below the City's 100-foot standard. West Valley View Road  
7 would need to be widened and varying amounts of ROW obtained, because the  
8 existing ROW varies from 60 feet to 80 feet. The bridges over Bear Creek and  
9 Wagner Creek would not be replaced, so the cross-sections would be narrower  
10 where the road crosses the bridges. At the Bear Creek Bridge, the travel lanes would  
11 remain 11 feet wide, the center turn lane would be 12 feet wide, and the bike lane  
12 on the north side would be 4 feet wide. On the south side, cyclists would use the  
13 existing 10-foot wide sidewalk. The existing 5-foot wide sidewalk on the north side  
14 of the bridge would remain. At the Wagner Creek Bridge, travel lanes would be  
15 widened to 12 feet, the center turn lane would be eliminated, and the bike lanes  
16 would be widened to 6 feet. The existing 5-foot wide sidewalks across the Wagner  
17 Creek Bridge would remain. Access points would be limited, as specified above.

18 **Environmental Impacts**

19 Concept U-1 could require the acquisition of a small amount of land at the entrance  
20 to Lynn Newbry Park. The acquisition would likely qualify as *de minimis* under  
21 Section 4(f) of the U.S. Department of Transportation Act. No other material  
22 environmental impacts or regulatory issues are anticipated.

23 **Freight Impacts/Benefits**

24 A five-lane West Valley View Road facility will provide a freight benefit between the  
25 I-5 southbound ramps and the right-in right-out driveways to Brammo and Chevron.  
26 This section currently has three to four lanes of varying widths and a five-lane  
27 section would provide more maneuvering room for large vehicles.

28 **Impacts on Low-Income and Elderly Residents**

29 Concept U-1 would benefit these residents by providing sidewalks and bicycle lanes  
30 that are wider than the existing sidewalks and bicycle lanes. The pedestrian crossing  
31 distance at West Valley View Road and Hinkley Road would be about 12 percent  
32 longer than under existing conditions, but the signalized crosswalks at Hinkley Road  
33 and OR 99 would remain. The pedestrian crossing distance at OR 99 would be  
34 unchanged.

35 **Cost Estimate**

36 The rough, order of magnitude cost estimate for concept U-1 is \$19 million. This cost  
37 does not include ROW acquisition, utility relocation, or costs to address potential  
38 hazardous waste.

1 **CONCEPT U-2, THREE-LANE WEST VALLEY VIEW ROAD**  
2 **FACILITY**

3 Concept U-2 was developed to address ROW, roadway design standard, and access  
4 spacing deficiencies. See Figures 3 and 4. The concept includes the following  
5 improvements:

- 6 • Re-stripe West Valley View Road between OR 99 and the I-5 southbound ramps  
7 to include one 12-foot travel lane in each direction, a 14-foot center turn lane,  
8 and 6-foot bike lanes. One option would provide 10-foot sidewalks. Under this  
9 option, the ROW would be 80 feet wide. A second option would provide 8-foot  
10 sidewalks and 11-foot parkrows separating the bike lanes from the sidewalks.  
11 Under this option, the ROW would be 88 feet wide.
- 12 • Combine access points along West Valley View Road west of I-5 to better meet  
13 access spacing requirements, as specified for Concept U-1

14 ***Traffic Operations***

15 Table 3 summarizes the traffic operations for concept U-2.

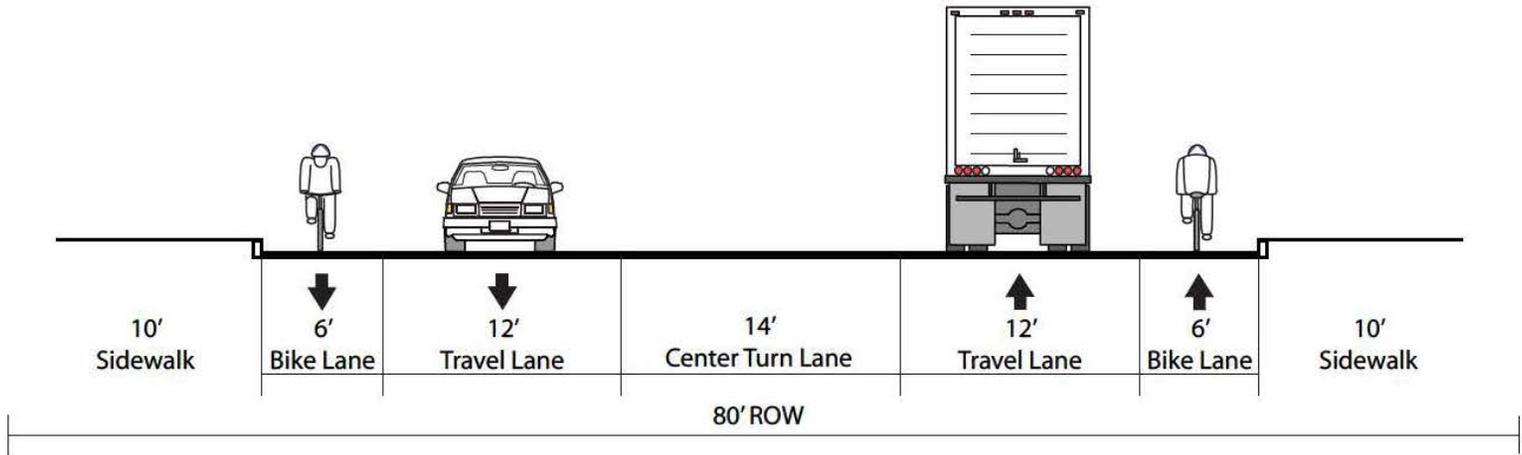
16 **ROADWAY GEOMETRIES AND RIGHT-OF-WAY REQUIREMENTS**

17 Concept U-2 would address roadway design standards and ROW requirements for  
18 West Valley View Road between OR 99 and the I-5 southbound ramps, as illustrated  
19 in Figures 3 and 4. Wider travel lanes, bike and pedestrian facilities, and/or buffer  
20 areas are provided to meet roadway design standards for a major arterial street.  
21 The proposed 80-foot ROW under the without parkrow option and 88-foot ROW  
22 under the with parkrow option are below the City's 100-foot standard. West Valley  
23 View Road would need to be widened in some locations and varying amounts of  
24 ROW obtained, because the existing ROW varies from 60 feet to 80 feet. The bridges  
25 over Bear Creek and Wagner Creek would not be replaced because the existing  
26 pavement width is 60 feet and more than adequate to support a three-lane facility  
27 that meets current City standards. Re-striping would occur to include 12-foot travel  
28 lanes (where they are currently 11-foot), a 14-foot center lane, and 6-foot bike  
29 lanes. The additional 10 feet of pavement would serve as a buffer between the  
30 travel lanes and bike lanes. The sidewalks across the Bear Creek Bridge would  
31 remain 5 to 10 feet and the sidewalks across the Wagner Creek Bridge would  
32 remain 5 feet. Access points would be limited, as specified above.

Figure 3. Concept U-2 Without Parkrow



Plan View

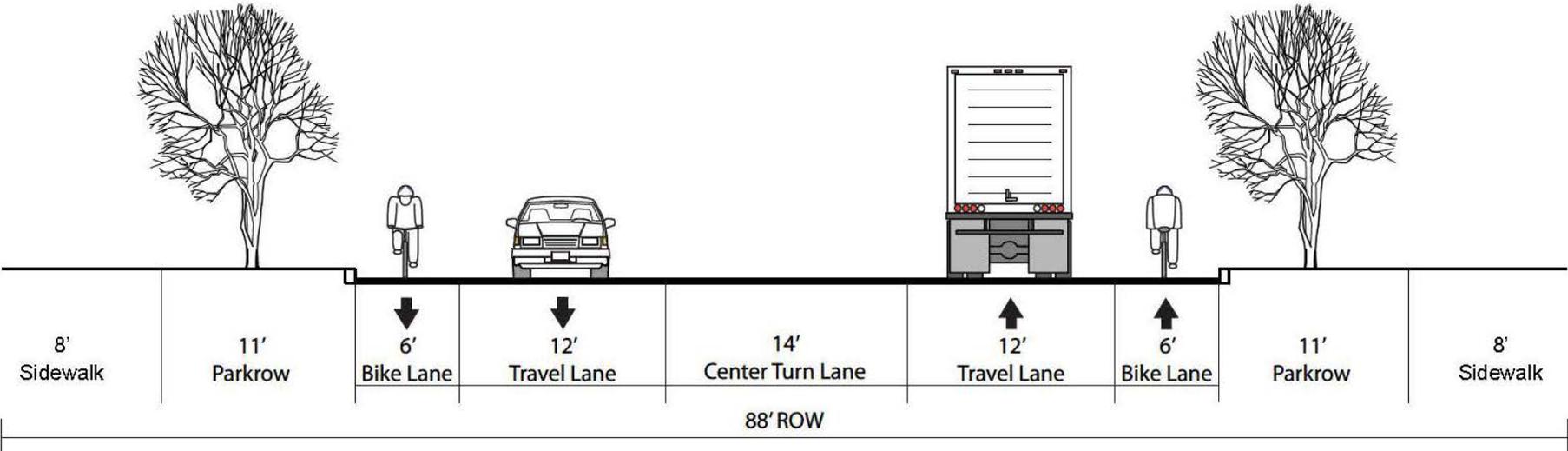


Cross Section

Figure 4. Concept U-2 With Parkrow



Plan View



Cross Section

**Table 3. Intersection Operations with Concept U-2**

Intersection with West Valley View Road	Movement	V/C Ratio	LOS	Queuing Issues	Applicable Standard <sup>1</sup>
OR 99 (signalized)	Overall	0.53	B	None	v/c 0.85, LOS D
Development Area 5 <sup>2</sup>	NB L/T/R	0.25	D	None	LOS D
	WBT	0.39	A		
Oak Valley View Road	SB L/R	0.03	B	None	LOS D
	WBT	0.41	A		
Mountain View Road	NB L/R	0.09	B	None	LOS D
	WBT	0.40	A		
Hinkley Road (Brammo) <sup>2</sup> (signalized)	Overall	0.67	B	650-foot WBT queue blocks Siskiyou View Road 400-foot EBT queue reaches Mountain View Road	LOS D
Siskiyou View Road	SB L/T/R	0.09	D	None	LOS D
	WBT	0.41	A		

Notes:

1. Mobility/performance standards are taken from Table 10-1 of the 2012 ODOT Highway Design Manual and the Talent TSP.
2. Figure 1 shows the location of Development Areas 5, 6, and 7.  
EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of service

### **Environmental Impacts**

As with Concept U-1, Concept U-2 could require the acquisition of a small amount of land at the entrance to Lynn Newbry Park. The acquisition would likely qualify as *de minimis* under Section 4(f) of the U.S. Department of Transportation Act. No other material environmental impacts or regulatory issues are anticipated.

### **Freight Impacts/Benefits**

A three-lane West Valley View Road facility impacts freight traffic by providing less maneuvering room within travel lanes for larger vehicles, which may need to use the bike lanes for turns. In addition, queue lengths at signalized intersections will result from reduced capacity, causing more stop-and-go movements for trucks.

### **Impacts on Low-Income and Elderly Residents**

As with Concept U-1, Concept U-2 would benefit these residents by providing sidewalks and bicycle lanes that are wider than the existing sidewalks and bicycle lanes. In addition, the pedestrian crossing distance at West Valley View Road and Hinkley Road would be reduced by about one quarter compared to existing conditions. The signalized crosswalks at Hinkley Road and OR 99 would remain. The pedestrian crossing distance at OR 99 would be unchanged.

### **Cost Estimate**

The rough, order of magnitude cost estimate for concept U-2 without a parkrow is \$17 million. The rough, order of magnitude cost estimate for concept U-2 with a parkrow is \$19 million. These costs do not include ROW acquisition, utility relocation, or costs to address potential hazardous waste.

1 **CONCEPT U-3, THREE-LANE FACILITY WITH ROUNDABOUTS**

2 Concept U-3 was developed to address access deficiencies. See Figure 5. The concept  
 3 is the same as Concept U-2, but would include the following additional  
 4 improvements:

- 5 • Restrict access between West Valley View Road and Siskiyou View Road and  
 6 between West Valley View Road and the American RV Park to right-in right-out  
 7 only to better meet access spacing requirements. A median would prevent left  
 8 turns onto West Valley View Road from Siskiyou View Road and the American  
 9 RV Park.
- 10 • Install a single-lane roundabout at Hinkley Road to enable vehicles from the  
 11 American RV Park to proceed eastbound and install a single-lane roundabout at  
 12 the I-5 southbound ramps to enable vehicles from Siskiyou View Road to  
 13 proceed westbound. Both roundabouts would be designed to handle WB-67  
 14 semi-trucks.

15 Figure 5 shows Concept U-3 without parkrows. As an option, Concept U-3 could  
 16 include parkrows.

17 **Concept U-3 Traffic Operations**

18 Table 4 summarizes traffic operations for concept U-3.

**Table 4. Intersection Operations with Concept U-3**

Intersection with West Valley View Road	Movement	V/C Ratio	LOS	Queuing Issues	Applicable Standard <sup>1</sup>
Hinkley Road <sup>2</sup> (roundabout)	SB	0.27	B	200-foot WBT queue reaches right-in Chevron access	LOS D
	WB	0.76	C		
Siskiyou View Road	SBR	0.04	B	None	LOS D
	WBT	0.42	A		
I-5 Southbound Ramps (roundabout)	SB	0.57	B	None	0.85
	EB	0.52	A		

19 Notes:

20 1. Mobility/performance standards are taken from Table 10-1 of the 2012 ODOT Highway Design Manual and the Talent TSP.

21 2. Figure 1 shows the location of Development Areas 5, 6, and 7.

22 EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of  
 23 service

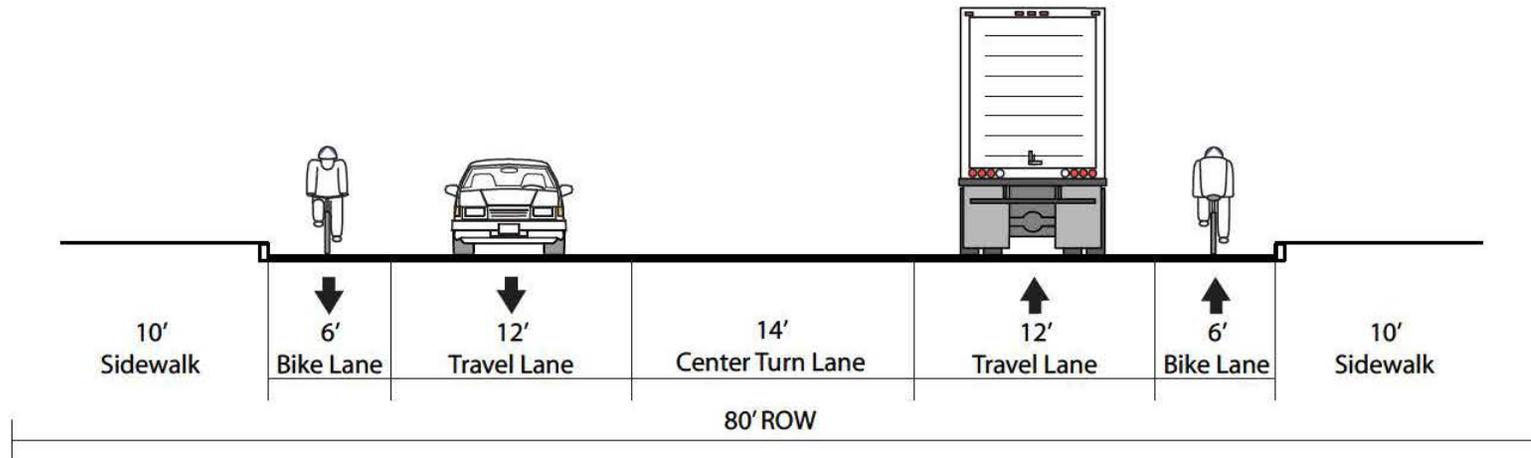
24 **Roadway Geometries and Right-of-Way Requirements**

25 Concept U-3 would address access spacing standards for West Valley View Road  
 26 between Hinkley Road and the I-5 southbound ramps, as illustrated in Figure 5. The  
 27 roundabouts at the intersections of West Valley View Road and the southbound  
 28 ramps would be provided for large vehicle turnarounds necessitated by restricting  
 29 access between West Valley View Road and Siskiyou View Road and the American  
 30 RV Park to right-in right-out only. Configuring and signaling these intersections to  
 31 allow U-turns would not be sufficient. While U-turns at the intersections would  
 32 replace the left turn movements for automobiles and light trucks, they would not

Figure 5. Concept U-3, Three-Lane Facility With Roundabouts (Without Parkrow)



Plan View



Cross Section

1 replace the left-turn movements for large trucks or RVs. Additional ROW may be  
2 necessary to accommodate the roundabouts. The inscribed circle diameter range  
3 would need to be 130-180-foot to accommodate large vehicles (i.e., WB-67 semi-  
4 trucks).

### 5 ***Environmental Impacts***

6 As with Concept U-1, Concept U-2 could require the acquisition of a small amount of  
7 land at the entrance to Lynn Newbry Park. The acquisition would likely qualify as *de*  
8 *minimis* under Section 4(f) of the U.S. Department of Transportation Act. No other  
9 material environmental impacts or regulatory issues are anticipated.

### 10 ***Freight Impacts/Benefits***

11 Roundabouts at the Hinkley Road and I-5 southbound ramp intersections with West  
12 Valley View Road would have positive impacts for freight traffic if designed properly  
13 for large vehicles. The roundabouts would reduce the queuing caused by reducing  
14 West Valley View Road to a three-lane facility and improve intersection operations  
15 at the I-5 southbound ramp intersection. The Hinkley Road intersection would  
16 operate roughly the same as with signalized intersection operations. The major  
17 difference at this intersection would be reduced queue lengths with a roundabout,  
18 which in turn means less stop and go for freight traffic.

### 19 ***Impacts on Low-Income and Elderly Residents***

20 As with Concept U-1 and Concept U-2, Concept U-3 would benefit these residents by  
21 providing sidewalks and bicycle lanes that are wider than the existing sidewalks and  
22 bicycle lanes. West Valley View Road would be slightly wider to cross. Pedestrian  
23 crossings at the Hinkley Road roundabout could be designed to provide a level of  
24 safety equivalent to the existing signalized crosswalks. The signalized crosswalk at  
25 OR 99 would remain.

### 26 ***Cost Estimate***

27 The rough, order of magnitude cost estimate for concept U-3 is \$20 million. This cost  
28 does not include ROW acquisition, utility relocation, or costs to address potential  
29 hazardous waste.

## 30 **INTERCHANGE AREA IMPROVEMENTS**

31 Two concepts are proposed to address roadway geometry, pedestrian and bicycle  
32 facilities, and bridge deficiencies identified in Technical Memorandum 5. Table 5  
33 provides a brief summary of the concepts.

**Table 5. Summary of Interchange 21 Improvement Concepts**

<b>Concept</b>	<b>Location</b>	<b>General Description</b>	<b>Reason</b>
<b>I-1</b>	West Valley View Road, I-5 southbound ramps to I-5 northbound ramps	Widen to five-lane facility with wider sidewalks, bike lanes and travel lanes to address design standards and pedestrian and bicycle travel, applying ODOT's standard for a urban minor arterial.	Roadway Design Standard and Safety
<b>I-2</b>	West Valley View Road, I-5 southbound ramps to I-5 northbound ramps	Widen to five-lane facility with wider sidewalks, bike lanes and travel lanes to address design standards and pedestrian and bicycle travel, applying ODOT's standard for a rural minor arterial.	Roadway Design Standard and Safety

1

2 **CONCEPT I-1, ROADWAY WIDENING TO URBAN STANDARD,**  
 3 **INCLUDING BRIDGE WIDENING OR REPLACEMENT**

4 Concept I-1 was developed to address roadway design standard and safety  
 5 deficiencies. The concept consists of widening West Valley View Road between the I-  
 6 5 northbound and southbound ramps, including the bridge over I-5, to include one  
 7 12-foot travel lane in each direction, combined 8-foot bike lane/buffer areas, and 7-  
 8 foot sidewalks. See Figure 6.

9 **Concept I-1 Traffic Operations**

10 Table 6 summarizes traffic operations for concept I-1.

**Table 6. Intersection Operations with Concept I-1**

<b>Intersection with West Valley View Road</b>	<b>Movement</b>	<b>V/C Ratio</b>	<b>LOS</b>	<b>Queuing Issues</b>	<b>Mobility Standard<sup>1</sup></b>
<b>I-5 Southbound Ramps</b>	SB L/T	0.59	N.A.	None	0.85
	EBT	0.25			
<b>I-5 Northbound Ramps</b>	EB L/R	0.29	N.A.	None	0.85
	SBT/R	0.26			

11  
12  
13  
14

Notes:

1. The mobility standard is taken from Table 10-1 of the 2012 ODOT Highway Design Manual.  
 EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of service

15 **Roadway Geometries and Right-of-Way Requirements**

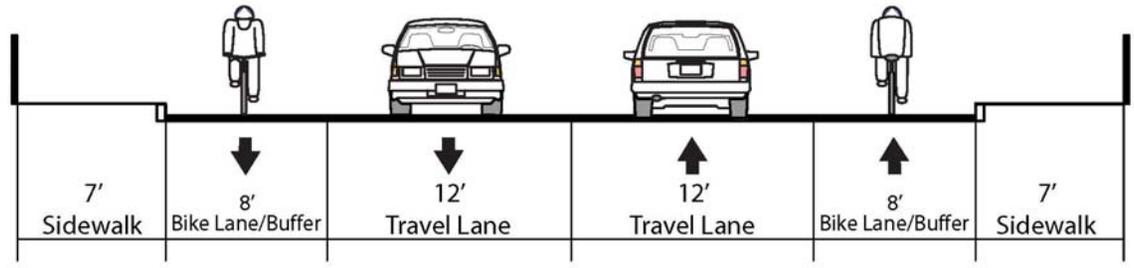
16 Concept I-1 addresses roadway design standards for West Valley View Road  
 17 between the I-5 northbound and southbound ramps, as illustrated in Figure 6. Bike  
 18 lanes, buffer areas, and sidewalks are provided to meet ODOT's roadway design  
 19 standards for an urban minor arterial. West Valley View Road would be widened  
 20 and additional ROW obtained. The bridge over I-5 would be widened by  
 21 approximately 30 to 32-feet, nearly doubling the width of the existing structure  
 22 (which is 33 to 34-feet wide) or replaced to accommodate the wider cross section.

1

Figure 6. Concept I-1, Roadway Widening to Urban Standard, Including Bridge Widening or Replacement



Plan View



Cross Section

2

1 **Environmental Impacts**

2 No material environmental impacts or regulatory issues are anticipated.

3 **Freight Impacts/Benefits**

4 Widening West Valley View Road and the bridge over I-5 to incorporate bike lanes,  
5 buffer areas, and sidewalks will have a positive impact on freight traffic by  
6 providing more maneuvering area for large vehicles and additional separation  
7 between large vehicles and pedestrians and cyclists.

8 **Impacts on Low-Income and Elderly Residents**

9 The bicycle lanes and sidewalks would benefit low-income residents of the  
10 American RV Park and elderly residents of the Oak Valley Planned Community and  
11 Mountain View Estates subdivisions who walk or bicycle across the interchange.  
12 The number of such trips is small.

13 **Cost Estimate**

14 The rough, order of magnitude cost estimate for concept I-1 is \$10 million, if the  
15 bridge is widened and \$14 million if the bridge is replaced. These costs do not  
16 include ROW acquisition, utility relocation, or costs to address potential hazardous  
17 waste.

18 **CONCEPT I-2, ROADWAY WIDENING TO RURAL STANDARD,  
19 INCLUDING BRIDGE WIDENING OR REPLACEMENT**

20 Concept I-2 was developed to provide an alternative to Concept I-2, because no  
21 urban development is expected east of the interchange during the planning period.  
22 This means that volumes of pedestrian and bicycle travel are expected to remain  
23 low. Instead of meeting ODOT’s standards for an urban minor arterial, Concept I-2  
24 would meet the standards for a rural minor arterial. As illustrated in Figure 7, the  
25 concept widens West Valley View Road and the bridge over I-5 between the I-5  
26 northbound and southbound ramps to include one 11-foot travel lane in each  
27 direction and an 8 to 10-foot shoulder.

28 **Traffic Operations**

29 Table 7 summarizes traffic operations for concept I-2.

Table 7. Intersection Operations with Concept I-2					
Intersection with West Valley View Road	Movement	V/C Ratio	LOS	Queuing Issues	Mobility Standard <sup>1</sup>
I-5 Southbound Ramps	SB L/T	0.59	N.A.	None	0.85
	EBT	0.25			
I-5 Northbound Ramps	EB L/R	0.29	N.A.	None	0.85
	SBT/R	0.26			

Notes:

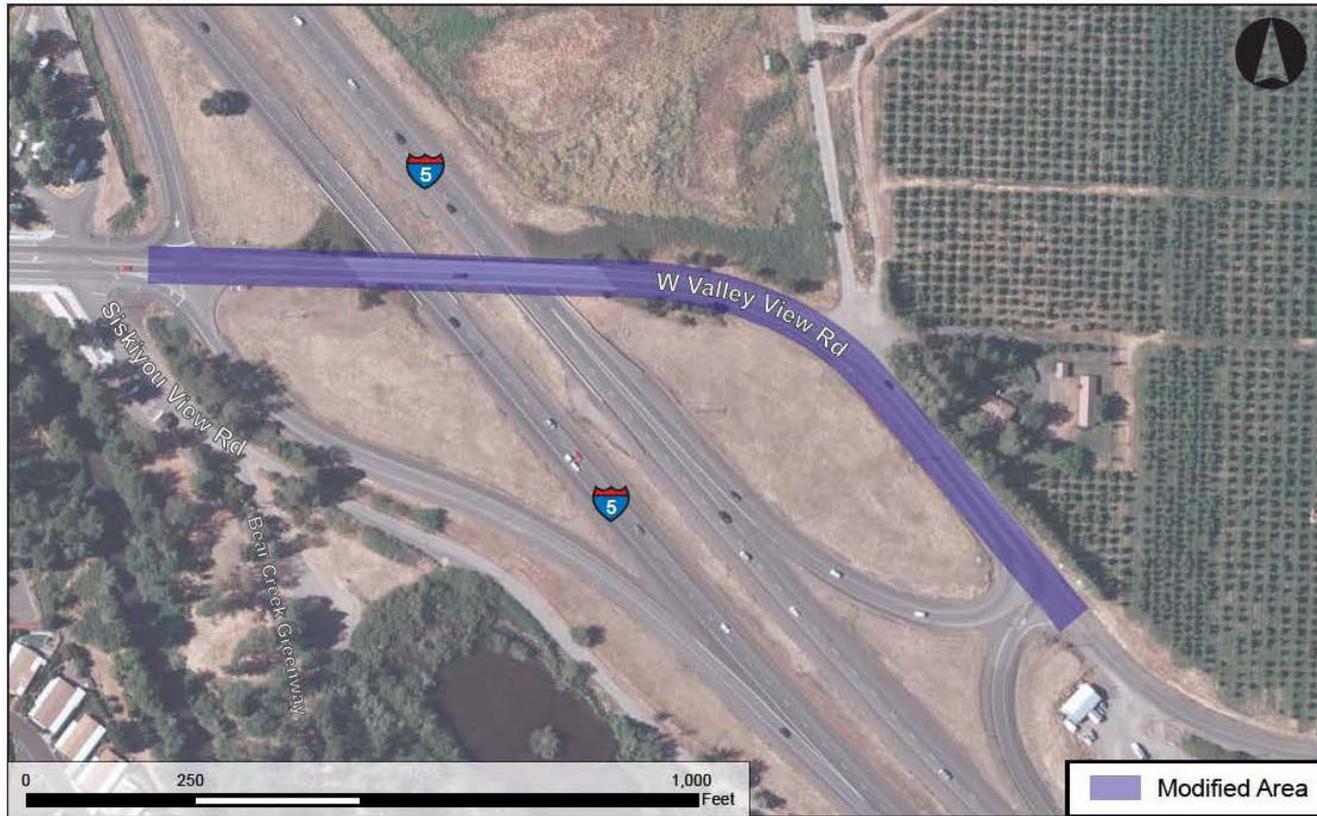
1. Mobility standards are taken from Table 10-1 of the 2012 ODOT Highway Design Manual.

EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of service

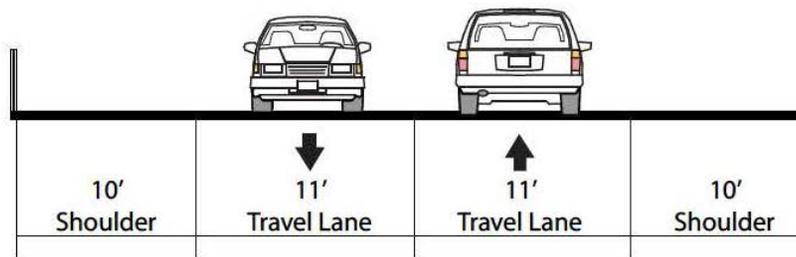
30  
31  
32  
33

1

Figure 7. Concept I-2, Roadway Widening to Rural Standard, Including Bridge Widening or Replacement



Plan View



Cross Section

2

1 **Roadway Geometries and Right-of-Way Requirements**

2 Concept I-2 would address roadway design standards for West Valley View Road  
3 between the I-5 northbound and southbound ramps, as illustrated in Figure 7. Wide  
4 shoulders are provided for the low volume of bicyclists and pedestrians on West  
5 Valley View Road and to meet roadway design standards for rural conditions east of  
6 I-5. West Valley View Road would be widened, but no additional ROW would be  
7 needed. The bridge over I-5 would be widened by approximately 8 feet, but likely  
8 would not need to be replaced.

9 **Environmental and Land Use Assessment**

10 No material environmental impacts or regulatory issues are anticipated.

11 **Freight Impacts/Benefits**

12 Widening West Valley View Road and the bridge over I-5 to incorporate shoulders  
13 will have a positive impact on freight traffic by providing more maneuvering area  
14 for large vehicles and additional separation between large vehicles and pedestrians  
15 and cyclists within the shoulder area.

16 **Impacts on Low-Income and Elderly Residents**

17 The wider shoulders would benefit low-income residents of the American RV Park  
18 and elderly residents of the Oak Valley Planned Community and Mountain View  
19 Estates subdivisions who walk or bicycle across the interchange. The number of  
20 such trips is small.

21 **Cost Estimate**

22 The rough, order of magnitude cost estimate for concept I-2 is \$8 million. This cost  
23 does not include ROW acquisition, utility relocation, or costs to address potential  
24 hazardous waste.

25 **RURAL AREA IMPROVEMENTS**

26 One concept is provided to address roadway design standard and access  
27 deficiencies identified in baseline conditions. A brief summary of concepts is  
28 provided in Table 8.

Table 8. Summary of Rural Area Improvement Concepts			
Concept	Location	General Description	Reason
R-1	West Valley View Road, I-5 northbound ramps to Suncrest Road	<ul style="list-style-type: none"> <li>Widen to include 11-foot travel lanes and 5-foot paved shoulders</li> <li>Consolidate access points to reduce conflicts</li> </ul>	Roadway Design Standard, Safety, and Access

29

1 **CONCEPT R-1, RURAL WEST VALLEY VIEW ROAD FACILITY**

2 Concept R-1 was developed to address roadway design standard, safety, and access  
3 deficiencies. See Figure 8. The concept would include the following improvements:

- 4 • Widen and restripe West Valley View Road between the I-5 northbound ramps  
5 and Suncrest Road to include one 11-foot travel lane in each direction and 5-foot  
6 paved shoulders.
- 7 • Combine access points along West Valley View Road east of I-5 to better meet  
8 Jackson County access spacing requirements.

9 **Concept R-1 Traffic Operations**

10 Table 9 summarizes traffic operations for concept R-1.

**Table 9. Intersection Operations with Concept R-1**

Intersection with West Valley View Road	Movement	V/C Ratio	LOS	Queuing Issues	Jackson County Standard <sup>1</sup>
Suncrest Road	WB L/R	0.04	A	None	0.95
	NBT/R	0.03	A		

11 Notes:

12 1. The Jackson County Transportation System Plan traffic operational standard for county roadways inside the MPO is 0.95.  
 13 EB=eastbound; WB=westbound; NB=northbound; SB=southbound; L=left; T=through; R=right; v/c=volume to capacity; LOS=level of  
 14 service

15 **Roadway Geometries and Right-of-Way Requirements**

16 Concept R-1 would address roadway design standards for West Valley View Road  
17 east of the I-5 northbound ramps, as illustrated in Figure 8. Shoulders are provided  
18 for the low volume of bicyclists and pedestrians on West Valley View Road and to  
19 meet County roadway design standards for rural conditions. West Valley View Road  
20 would need to be widened and re-stripped, but no additional ROW would be needed.

21 **Environmental Impacts**

22 No material environmental impacts or regulatory issues are anticipated.

23 **Freight Impacts/Benefits**

24 Widening West Valley View Road east of I-5 to incorporate 5-foot shoulders would  
25 have a positive impact on freight traffic by providing more maneuvering area for  
26 large vehicles and additional separation between large vehicles and pedestrians and  
27 cyclists within the shoulder area.

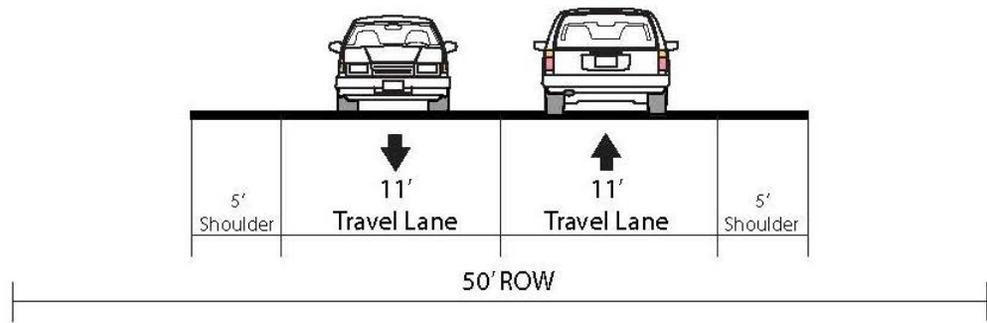
28 **Impacts on Low-Income and Elderly Residents**

29 The wider shoulders would benefit low-income residents of the American RV Park  
30 and elderly residents of the Oak Valley Planned Community and Mountain View  
31 Estates subdivisions who walk or bicycle across the interchange and into the rural  
32 area east of the interchange. The number of such trips is small.

Figure 8. Concept R-1, Rural West Valley View Road



Plan View



Cross Section

1 **Cost Estimate**

2 The rough, order of magnitude cost estimate for concept R-1 is \$1.5 million. This  
3 cost does not include utility relocation or costs to address potential hazardous  
4 waste.

5 **FUTURE TRAFFIC SAFETY CONSIDERATIONS**

6 No concepts were developed to specifically address a safety concern because the  
7 review of existing and future baseline conditions did not identify any safety  
8 concerns. Therefore, a crash modification factor analysis was not conducted.

9 **ROADWAY SYSTEM CLASSIFICATION CHANGES**

10 None of the concepts evaluated require a change in roadway classification. West  
11 Valley View Road within the City of Talent would remain classified as a major  
12 arterial under Concepts U-1, U-2, and U-3; within the interchange it would remain  
13 classified by ODOT as an urban minor arterial under Concepts I-1 and I-2; and east  
14 of the interchange it would remain classified by Jackson County as a rural minor  
15 collector under Concept R-1.

16 **QUALITATIVE MULTI-MODAL LOS ASSESSMENT**

17 A multimodal level of service analysis (MMLOS) analysis provides a comprehensive  
18 assessment of all travel modes. The analysis conducted for this technical  
19 memorandum uses information from existing, baseline, and concept scenarios.  
20 Table 10 summarizes performance for each mode, using a ranking system with four  
21 categories, from poor to very good. These rankings consider travel lanes, bike lanes,  
22 sidewalks/paths, shoulders/buffer areas, parking lanes, vehicle volumes/speeds,  
23 pavement conditions, traffic control, crossing width, medians, access, and other  
24 factors that influence level of service for each mode.

25 **EXISTING BASELINE**

26 The existing baseline condition includes an urban four to five lane section of West  
27 Valley View Road from OR 99 to Siskiyou View Road. Along this section, very few  
28 facilities meet design standards for a major arterial street, but facilities for the most  
29 part are included for pedestrians, bicyclists, and automobiles. The rating for  
30 automobiles is good along the entire length, except between Oak Valley View Drive  
31 and the western boundary of Development Area 5, where no center turn lane is  
32 provided. Pedestrian and bicycle facilities are rated good along segments within this  
33 section of West Valley View Road, but are rated fair at unsignalized intersections  
34 within five-lane segments and good at unsignalized intersections within four-lane  
35 segments because of longer crossing distances.

36 From Siskiyou View Road to the I-5 northbound ramps, West Valley View Road is  
37 considered urban, but has a much more rural feel to it. It has 7 to 8-foot shoulders

**Table 10. Qualitative Multimodal Assessment**

Travel Mode				
Location	Bicycle	Pedestrian	Transit	Auto
<b>EXISTING</b>				
West Valley View Road at OR 99	Fair	Fair	NA	Good
OR 99 to Oak Valley View	Good	Good	NA	Fair
West Valley View Road at Oak Valley	Good	Good	NA	Fair
Oak Valley View to Hinkley Road	Good	Good	NA	Good
West Valley View Road at Mountain View	Fair	Fair	NA	Good
West Valley View Road at Hinkley Road	Fair	Fair	NA	Good
Hinkley Road to Siskiyou View	Very Good	Good	NA	Good
West Valley View Road at Siskiyou View	Fair	Fair	NA	Good
West Valley View Road at I-5 SB	Poor	Poor	NA	Very Good
Siskiyou View to I-5 NB	Poor	Poor	NA	Very Good
West Valley View Road at I-5 NB	Poor	Poor	NA	Very Good
I-5 NB to Suncrest Road	Poor	Poor	NA	Very Good
West Valley View Road at Suncrest Road	Poor	Poor	NA	Very Good
<b>FUTURE BASELINE</b>				
West Valley View Road at OR 99	Fair	Fair	NA	Good
OR 99 to Oak Valley View	Good	Good	NA	Good
West Valley View Road at Development Area 5	Fair	Fair	NA	Good
West Valley View Road at Oak Valley	Fair	Fair	NA	Good
Oak Valley View to Hinkley Road	Good	Good	NA	Good
West Valley View Road at Mountain View	Fair	Fair	NA	Good
West Valley View Road at Hinkley Road	Fair	Fair	NA	Good
Hinkley Road to Siskiyou View	Very Good	Good	NA	Good
West Valley View Road at Siskiyou View	Fair	Fair	NA	Good
West Valley View Road at I-5 SB	Poor	Poor	NA	Very Good
I-5 SB to I-5 NB	Poor	Poor	NA	Very Good
West Valley View Road at I-5 NB	Poor	Poor	NA	Very Good
I-5 NB to Suncrest Road	Poor	Poor	NA	Very Good
West Valley View Road at Suncrest Road	Poor	Poor	NA	Very Good
<b>CONCEPT U-1 FIVE-LANE SECTION</b>				
OR 99 to Siskiyou View	Very Good	Very Good	NA	Very Good
West Valley View Road at Hinkley Road signalized intersection	Good	Good	NA	Very Good
<b>CONCEPT U-2 THREE-LANE SECTION</b>				
OR 99 to Siskiyou View	Good	Very Good	NA	Good
West Valley View Road at Hinkley Road signalized intersection	Very Good	Very Good	NA	Fair
<b>CONCEPT U-3 THREE-LANE SECTION WITH ROUNDABOUT</b>				
Hinkley Road to I-5 SB	Very Good	Very Good	NA	Very Good
West Valley View Road at Hinkley Road roundabout	Very Good	Very Good	NA	Good
West Valley View Road at Siskiyou View	Very Good	Very Good	NA	Good
West Valley View Road at I-5 SB roundabout	Very Good	Very Good	NA	Very Good
<b>CONCEPT I-1 ROADWAY WIDENING TO URBAN STANDARD, INCLUDING BRIDGE WIDENING OR REPLACEMENT</b>				
I-5 SB to I-5 NB	Good	Very Good	NA	Very Good
<b>CONCEPT I-2 ROADWAY WIDENING TO RURAL STANDARD, INCLUDING BRIDGE WIDENING OR REPLACEMENT</b>				
I-5 SB to I-5 NB	Good	Good	NA	Very Good
<b>CONCEPT R-1 RURAL WEST VALLEY VIEW ROAD</b>				
I-5 NB to Suncrest Road	Good	Good	NA	Very Good
West Valley View Road at Suncrest Road	Good	Good	NA	Very Good

Note: Rankings Description: Poor - inadequate or no facility provided, Fair - substandard facility provided, Good - adequate facility provided, Very Good - facility provided that meets design standard  
 EB=eastbound; WB=westbound; NB=northbound; SB=southbound

1  
2  
3

1  
2 between Siskiyou View Road and the I-5 southbound ramps, but then decreases in  
3 width between the I-5 ramps and provides 2 to 4-foot shoulders that meander in  
4 and out. This section is considered to have an adequate number of travel lanes, and  
5 so is rated good for automobiles, but poor for pedestrians and bicyclists due to a  
6 lack of facilities.

7 From the I-5 northbound ramps to Suncrest Road, West Valley View Road is  
8 considered rural and is adequate in the number of and width of travel lanes, but  
9 lacks consistent paved shoulders. For this reason, this section of West Valley View  
10 Road is rated good for automobiles and poor for pedestrians and bicyclists.

11 There is no existing or planned transit along West Valley View Road within the API.

## 12 **FUTURE BASELINE**

13 The future baseline scenario differs from existing conditions only in the section of  
14 West Valley View Road between Oak Valley View Drive and the western edge of  
15 Development Area 5. This section includes four lanes with no center turn lane under  
16 existing conditions and is assumed to include five lanes with a center turn lane  
17 under future conditions when Development Area 5 improves. The addition of a  
18 center turn lane improves the qualitative auto assessment along this segment and at  
19 the intersection of Oak Valley View and West Valley View Road from fair to good,  
20 but decreases the rating for pedestrians and bicyclists at unsignalized intersections  
21 to fair because of creating longer crossing distances. No other changes are  
22 anticipated within the API.

## 23 **CONCEPT U-1, FIVE-LANE SECTION**

24 Concept U-1 widens West Valley View Road from OR 99 to Siskiyou View to a five-  
25 lane section that meets City standards. This increases the rating for automobiles,  
26 pedestrians, and bicyclists along the roadway segments to very good, but decreases  
27 the rating for pedestrians and bicyclists at unsignalized intersections to good  
28 because of the longer crossing distance.

## 29 **CONCEPT U-2, THREE-LANE SECTION**

30 Concept U-2 reduces West Valley View Road to a three-lane urban section from OR  
31 99 to Siskiyou View Road. This is better for pedestrians and bicyclists at  
32 unsignalized intersections because of creating a shorter crossing distance, but this  
33 concept puts a higher volume of traffic in the outer travel lane along segments,  
34 which is not as good for bicyclists. Automobiles have fewer lanes to cross at  
35 unsignalized intersections, which is an improvement operationally, but the  
36 reduction in travel lanes decreases capacity and increases queue lengths at  
37 signalized intersections.

1 **CONCEPT U-3, THREE-LANE SECTION WITH ROUNDABOUTS**

2 Concept U-3 reduces West Valley View Road to a three-lane section from OR 99 to  
3 Siskiyou View Road, restricts access at Siskiyou View Road to right-in right-out only,  
4 and adds single lane roundabouts at the I-5 southbound ramps and Hinkley Road  
5 intersections. The three-lane section has similar ratings as Concept U-2, but is better  
6 for pedestrians and bicyclists at the I-5 southbound ramps intersection because of  
7 the roundabout. A roundabout in place of an unsignalized intersection is considered  
8 an improvement for pedestrians and bicyclists, but is not considered an  
9 improvement when replacing a signalized intersection, so the Hinkley Road  
10 roundabout lowers the pedestrian and bicyclist rating. Additional delay is created  
11 for automobiles at signalized intersections with a reduced, three-lane facility, and  
12 this improves on the main line when a roundabout replaces the traffic signal at  
13 Hinkley Road. The roundabout at the I-5 southbound ramps creates additional delay  
14 for automobiles on West Valley View Road, but decreases delay for the I-5  
15 southbound off-ramp approach.

16 **CONCEPT I-1, ROADWAY WIDENING TO URBAN STANDARD,**  
17 **INCLUDING BRIDGE WIDENING OR REPLACEMENT**

18 Concept I-1 widens the bridge over I-5 (and possibly requires replacing the bridge)  
19 and the section of West Valley View Road between the bridge and the I-5  
20 northbound ramps to include one travel lane in each direction, bike lanes, buffer  
21 areas, and sidewalks. Adequate travel lanes are already provided under existing  
22 conditions, so the auto rating continues to be very good in this concept. The  
23 pedestrian rating improves from poor to very good and the bicyclist rating improves  
24 from poor to good because of it being adjacent to the single travel lane in each  
25 direction.

26 **CONCEPT I-2, ROADWAY WIDENING TO RURAL STANDARD,**  
27 **INCLUDING BRIDGE WIDENING OR REPLACEMENT**

28 Concept I-2 widens the bridge over I-5 and the section of West Valley View Road  
29 between the bridge and the I-5 northbound ramps to include one travel lane in each  
30 direction and paved shoulders. Adequate travel lanes are already provided under  
31 existing conditions, so the auto rating continues to be very good in this concept. The  
32 pedestrian and bicyclist ratings improve from poor to good because both are placed  
33 in the shoulder, which is adjacent to the single travel lane in each direction.

34 **CONCEPT R-1, RURAL WEST VALLEY VIEW ROAD**

35 Concept R-1 widens and restripes West Valley View Road to include adequate travel  
36 lanes and paved shoulders in accordance with Jackson County rural standards.  
37 Adequate travel lanes are already provided under existing conditions so the auto  
38 rating continues to be very good in this concept, but the pedestrian and bicyclist  
39 rating improves from poor to good because both are placed in the shoulder, which is  
40 adjacent to the single travel lane in each direction.

1

# EVALUATION MATRIX

2 An evaluation matrix was developed to compare concepts based on the evaluation  
 3 criteria in Technical Memorandum 1, Goals and Objectives and Policy Review. Table  
 4 11 contains the results.

**Table 11. Evaluation Matrix**

Evaluation Criteria	Concept					
	U-1 Five-lane Facility	U-2 three-lane Facility	U-3 Roundabouts	I-1 Widening to Urban Standard	I-2 Widening to Rural Standard	R-1 Rural W. Valley View
Meet applicable ODOT mobility performance targets	Yes	Yes <sup>3</sup>	Yes	Yes	Yes	Yes
Meet applicable ODOT access spacing standards	No <sup>1</sup>	No <sup>1</sup>	No <sup>2</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>
Cost no more than can reasonably be expected to be funded with federal, state, and local funds	Yes	Yes	Yes	No	Yes	Yes
Provide for implementation on an incremental basis when traffic volumes establish need and funds become available	Yes	Yes	Yes	No	Yes	Yes
Avoid unsafe conditions	Yes	Yes	Yes	Yes	Yes	Yes
Ensure that the interchange and local roadway network meet the traffic generation needs of land development and that land development does not overtax the capacity of the interchange and local roadway network	Yes	Yes	Yes	Yes	Yes	Yes
Avoid and minimize adverse environmental impacts	Yes	Yes	Yes	Yes	Yes	Yes
Improve facilities and conditions for pedestrians and bicyclists	Yes	Yes	Yes	Yes	Yes	Yes
Avoid adverse impacts on racial and ethnic minorities, low-income persons, the physically and mentally disabled, and the elderly, as well as meet their needs	Yes	Yes	Yes	Yes	Yes	Yes

5  
6  
7  
8  
9  
10

Notes:

1. The ODOT access spacing requirement within an interchange area is 1320-foot to the nearest full movement access and 750-foot to the nearest right-in right-out access.
2. Although it doesn't meet the spacing requirement, this concept is the only concept that restricts access at Siskiyou View Road to right-in right-out movements and makes the best attempt to comply with access spacing requirements.
3. Queuing causes downstream access points to be blocked eastbound and westbound at Hinkley Road/West Valley View Road.