

Technical Memorandum 7

PREFERRED CONCEPTS

IAMP 21

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

February 11, 2015

Oregon Department of Transportation
Region 3

INTRODUCTION

This memorandum recommends preferred concepts for each of three areas within the area of potential impact (API) for the interchange area management plan (IAMP) for the Exit 21 Interchange on Interstate-5 (I-5) in Talent, Oregon. Figure 1 shows the API. The three areas are the:

- **Urban Area** – The urban section of West Valley View Road, which is from OR 99 to the I-5 southbound ramps.
- **Interchange Area** – The bridge, ramps, and West Valley View Road at the interchange, itself.
- **Rural Area** – The rural section of West Valley View Road from the I-5 northbound ramps to Suncrest Road.

This memorandum first describes the process used to evaluate and select the preferred concept for each area, then describes the preferred concepts and explains why their components were included. Once the preferred concepts have been refined in response to reviews of this memorandum by staff of the Oregon Department of Transportation (ODOT), City of Talent, Jackson County, and Rogue Valley Council of Governments and by members of the public, they will be incorporated into the IAMP. The IAMP will also include two other components. One will be an access management plan (AMP) for the interchange area, which will provide a scheme for changes to local approaches to West Valley View Road, including streets and driveways. The AMP is being developed and will be made available for review. The other component will include interchange management measures, such as changes to the Talent Zoning Code or proposals for methods to fund transportation improvements.

EVALUATION AND SELECTION PROCESS

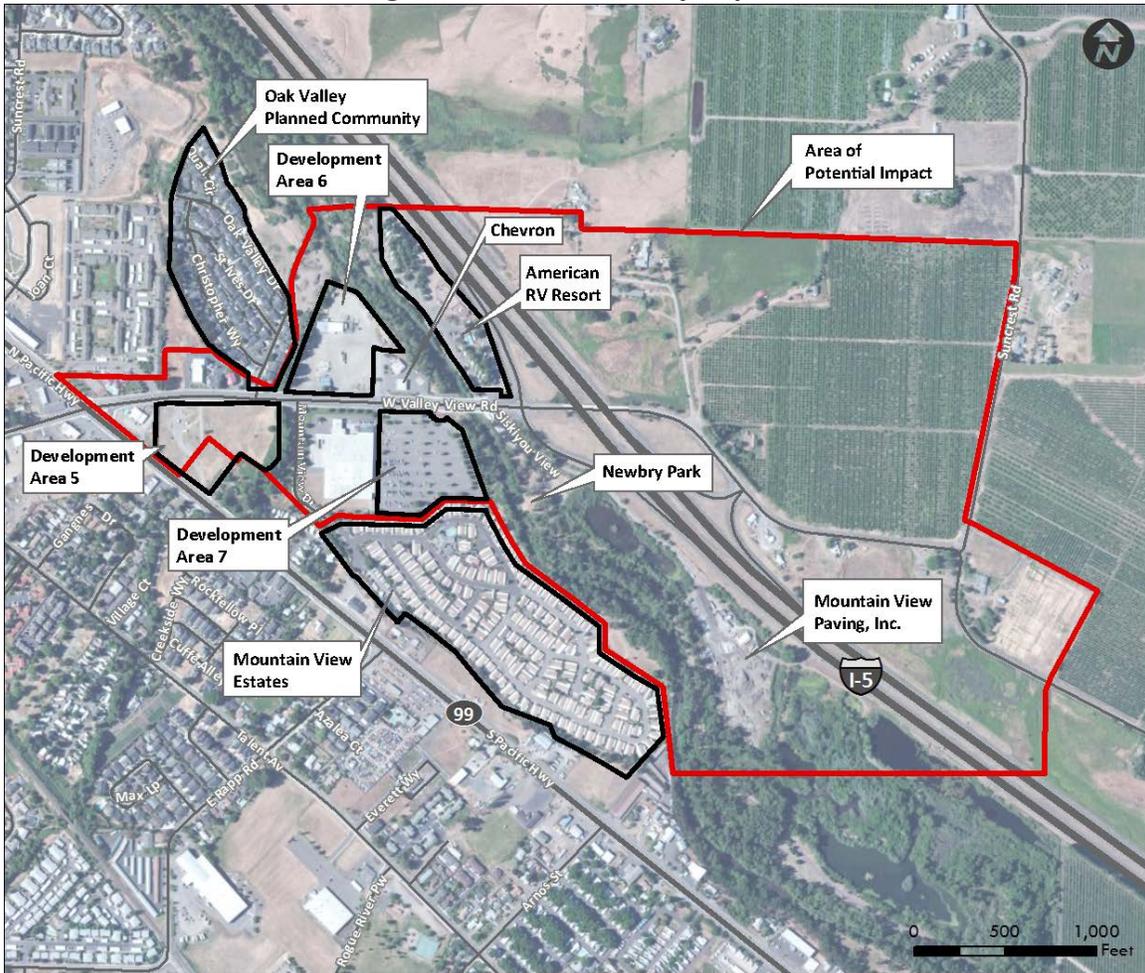
To select the preferred concept for each area, ODOT prepared Technical Memorandum (TM) 6, Concepts And Evaluation, distributed it to members of the IAMP 21 Technical Advisory Committee (TAC) and Citizen Advisory Committee (CAC), conducted a meeting to discuss TM 6 and obtain feedback, then provided an additional opportunity to submit comments. In addition, ODOT conducted a public open house on the IAMP at the Talent Community Hall January 20, 2015, in conjunction with an open house on the update of the Talent Transportation System Plan. Members of the public were able to discuss the alternative concepts with project staff. Three members of the public wrote comments regarding the alternative concepts. A comment log contains these comments, comments recorded in notes on the meeting of the TAC, and responses to the comments.

TM 6 described three alternative concepts for the urban area, two alternative concepts for the interchange, itself, and one concept for the rural area. It also evaluated each concept for:

- traffic operations

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Figure 1. Area of Primary Impact



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- roadway geometries
- right-of-way requirements
- environmental impacts
- freight impacts
- impacts on racial and ethnic minorities, low-income persons, the physically and mentally disabled, and the elderly
- cost

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In addition, TM 6 compared how the alternatives met the evaluation criteria in Technical Memorandum 1, Goals and Objectives and Policy Review. These criteria are:

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1. Meet applicable ODOT mobility performance targets.
2. Meet applicable ODOT access spacing standards.

- 1 3. Cost no more than can reasonably be expected to be funded with federal, state,
2 and local funds, including contributions from properties benefited by
3 interchange improvements.
- 4 4. Provide for implementation on an incremental basis when traffic volumes
5 establish need and funds become available.
- 6 5. Avoid unsafe conditions.
- 7 6. Ensure that the interchange and local roadway network meet the traffic
8 generation needs of land development and that land development does not
9 overtax the capacity of the interchange and local roadway network.
- 10 7. Avoid and minimize adverse environmental impacts.
- 11 8. Improve facilities and conditions for pedestrians and bicyclists.
- 12 9. Avoid adverse impacts on racial and ethnic minorities, low-income persons, the
13 physically and mentally disabled, and the elderly, as well as meet their needs.

14 **PREFERRED CONCEPTS AND REASONS FOR** 15 **SELECTION**

16 **URBAN AREA**

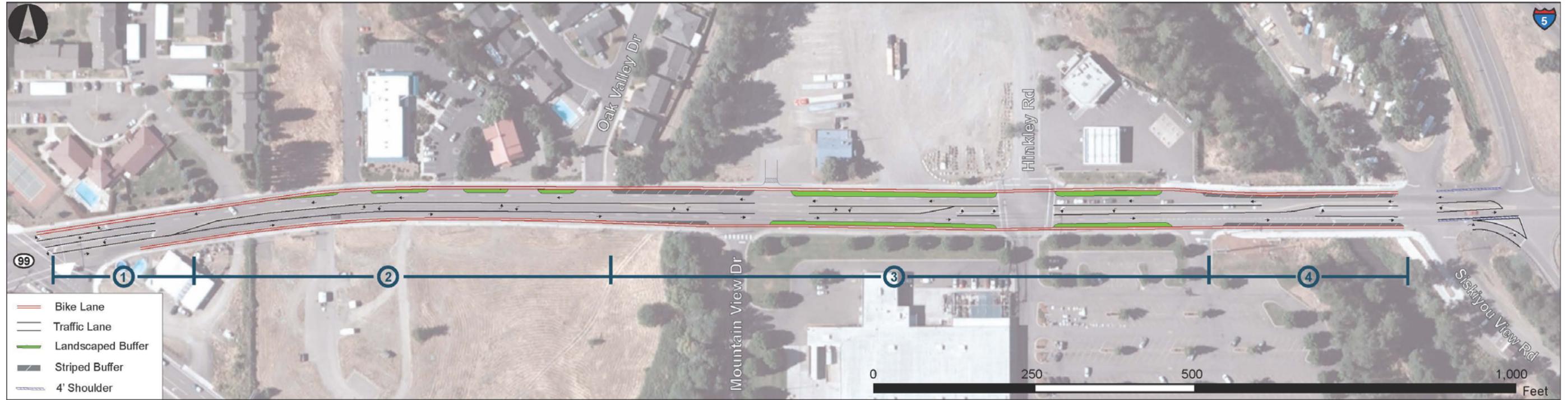
17 ***Description***

18 The urban area includes the segment of West Valley View Road under City of Talent
19 jurisdiction from OR 99 to the I-5 southbound ramps. The paved width varies from
20 approximately 55 feet to 66 feet across the segment. The preferred concept:

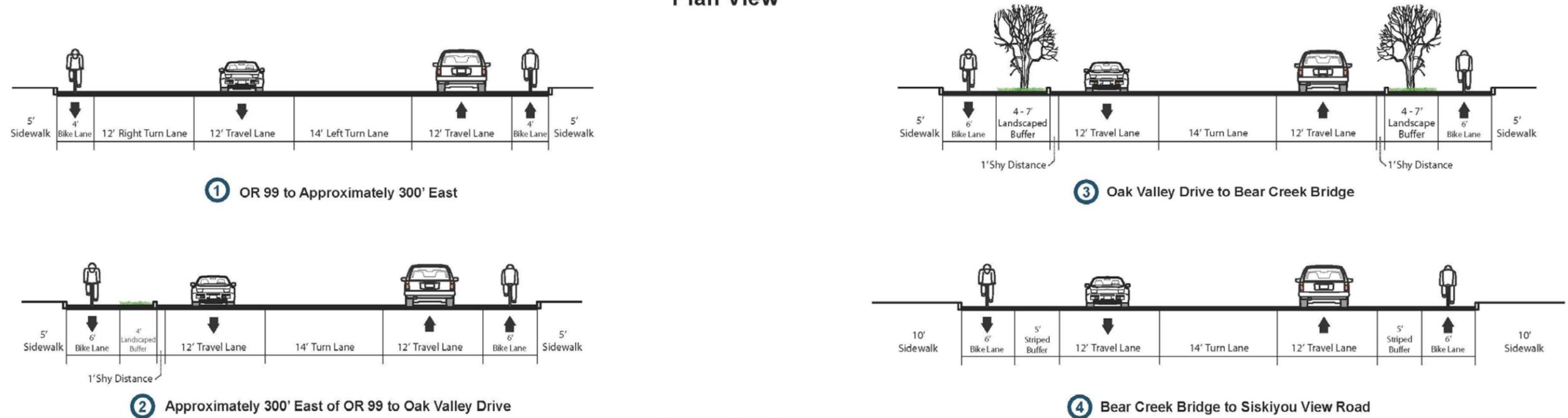
- 21 • Reduces the number of travel lanes to one in each direction with a center
22 left-turn lane
- 23 • Retains the existing right-of-way width
- 24 • Retains the existing pavement curb-to-curb, i.e., does not widen the existing
25 roadway
- 26 • Retains the existing sidewalks rather than reconstructing new ones
- 27 • Includes a bike lane with a consistent width
- 28 • Creates a buffer between the travel lanes and bike lanes

29 Figure 2 shows the preferred concept for the urban area. As a result of varying
30 pavement widths between OR 99 and the I-5 southbound ramps, the type and width
31 of bike lane buffers varies under the preferred concept. Except at the Wagner Creek
32 and Bear Creek Bridges, a landscaped buffer is included between the bike lane and
33 travel lane on all segments where there is adequate width. This landscaped buffer
34 varies in width between 4 feet and 7 feet (including a 6-inch curb on the travel lane
35 side). Proposed plantings in landscaped buffers include low growing vegetation in

Figure 2. Preferred Concept, Urban Area



Plan View



Cross Sections

① OR 99 to Approximately 300' East

③ Oak Valley Drive to Bear Creek Bridge

② Approximately 300' East of OR 99 to Oak Valley Drive

④ Bear Creek Bridge to Siskiyou View Road

1 narrower sections and trees in wider sections. A 1-foot shy distance is included
2 between the curbed edge of the landscaped buffer and the adjacent 12-foot travel
3 lane. This is considered to be adequate because the speed along West Valley View
4 Road is expected to reduce as a result of the three-lane design. The edge of the
5 landscaped buffer adjacent to the bike lane is proposed to be flush to allow a smooth
6 transition between the bike lane and buffer.

7 The cross section of West Valley View Road under the preferred concept would vary,
8 as follows.

9 **OR 99 to Approximately 300 Feet to the East**

10 West Valley View Road would remain as it is, with one through lane in each
11 direction, a westbound right-turn lane, a westbound left turn lane, 4-foot
12 bike lanes without buffers, and 5-foot sidewalks. When the land on the south
13 side of West Valley View Road is redeveloped in the future, the City of Talent
14 could seek the dedication of 5 feet of additional right-of-way, installation of a
15 landscaped buffer like the landscaped buffer included in the roadway
16 segments to the east (including a 1-foot separation between the eastbound
17 travel lane and the buffer), and reconstruction of the sidewalk.

18 **Approximately 300 Feet East of OR 99 to Oak Valley Drive**

19 Moving east, the paved roadway widens. As the widening roadway permits,
20 the bike lanes would widen to 6 feet and a 4-foot wide landscaped bike lane
21 buffer would be located on the north side of West Valley View Road. The
22 existing 5-foot wide sidewalks would remain. As with the first segment of
23 West Valley View Road, when the land on the south side of West Valley View
24 Road is redeveloped in the future, the City of Talent could seek the dedication
25 of 5 feet of additional right-of-way, installation of a landscaped buffer like the
26 landscaped buffer included in the roadway segments to the east (including a
27 1-foot separation between the eastbound travel lane and the buffer), and
28 reconstruction of the sidewalk.

29 **Oak Valley Drive to the Bear Creek Bridge**

30 Between the east side of Oak Valley Drive and Mountain View Drive, the
31 pavement widens from 60 feet to 66 feet and remains 66 feet until the west
32 end of the Bear Creek Bridge, where it narrows to 60 feet. In this section, the
33 bike lanes would be 6 feet wide and the landscaped buffers would transition
34 from 4 feet wide at Oak Valley Drive to 7 feet wide at Mountain View Drive,
35 and remain 7 feet wide until transitioning to 5 feet wide striped buffers just
36 west of the Bear Creek Bridge. Low vegetation is proposed in the narrower
37 landscaped buffers because they wouldn't be wide enough to support trees.
38 The wider landscaped buffers would include a mix of low vegetation and
39 trees. The bike lane buffers across the Wagner Creek Bridge would be
40 striped. This is because extending the landscaped buffers, which will be flush
41 with the bike lanes, across the bridge would require removing the bridge
42 deck under the buffers, which is not considered feasible. The existing 5-foot
43 wide sidewalks would remain.

1 **Bear Creek Bridge to Siskiyou View Road**

2 The existing pavement width is 60 feet across the bridge to Siskiyou View
3 Road. The preferred concept includes 6-foot wide bike lanes and 5-ft. wide
4 striped bike lane buffers across the Bear Creek Bridge to Siskiyou View Road.
5 As with the Wagner Creek Bridge, extending the landscaped buffers across
6 the bridge would require removing the bridge deck under the buffers, which
7 is not considered feasible. The existing sidewalks across the bridge, which
8 are 5 feet wide on the north side and 10 feet wide on the south side, would
9 remain.

10 The preferred concept includes consideration of a clustered signal at the
11 intersections of West Valley View Road with Siskiyou View Road and the
12 southbound I-5 ramps in the future, if warranted by traffic volume growth and/or
13 an increase in crashes. A clustered signal would consist of traffic lights at both
14 intersections that would operate in conjunction with each other to provide separate
15 signal cycles for traffic movements from the I-5 southbound off-ramp, Siskiyou View
16 Road, and the American RV Resort, as well as protected pedestrian crossings.

17 ***Reasons for Selection***

18 **Reducing to Three-Lane Section**

19 The preferred concept includes a three-lane cross-section because existing and
20 forecasted traffic volumes are low enough to be supported with three lanes, and this
21 cross-section allows for buffered bike lanes along most of West Valley View Road.

22 **Lane Widths**

23 Twelve-foot travel lanes and a 14-foot center left-turn lane are included to meet the
24 applicable City of Talent standards.

25 **Six-Foot Bike Lanes**

26 Where there is sufficient pavement width, a 6-foot wide bike lane is included to
27 meet the applicable City of Talent standard.

28 **Bike Lane Buffers**

29 A buffer between the travel lane and bike lane is included to increase safety and the
30 comfort level for cyclists and permit a uniform bike lane width through roadway
31 segments of varying pavement widths. The City wishes to encourage cyclists to use
32 West Valley View Road to access the Bear Creek Greenway. Both landscaped and
33 striped buffers are proposed. The landscaped buffers are included to improve the
34 appearance of West Valley View Road, which serves as the gateway to Talent for
35 travelers arriving from I-5.

1 **Maintaining Existing Sidewalks**

2 The preferred concept retains the existing sidewalks rather than include the
3 construction of new ones with additional width because securing funds to pay for
4 sidewalk reconstruction and widening is considered unrealistic.

5 **INTERCHANGE AREA**

6 ***Description***

7 The Interchange Area includes the section of West Valley View Road under ODOT
8 jurisdiction, which is from a point east of Siskiyou View to the I-5 northbound
9 ramps. The pavement width varies from approximately 30 feet to 40 feet. The
10 preferred concept for this section is intended to:

- 11 • Retain one existing travel lane in each direction
- 12 • Create a shoulder with a consistent width
- 13 • Make the I-5 northbound ramp intersection clearer for drivers, in particular
14 to reduce the chance that a driver would unintentionally enter I-5 on the
15 northbound off-ramp
- 16 • Reduce travel speeds

17 The preferred concept includes:

- 18 • A 4-foot wide shoulder on both sides of West Valley View Road between
19 Siskiyou View Road and the I-5 northbound ramps.
- 20 • Retention of the existing interchange configuration and existing interchange
21 bridge.
- 22 • Application of ODOT’s standard for rural area interchange bridges, should
23 the bridge need to be replaced during the planning period for unforeseen
24 reasons, such as damage or destruction from an earthquake.
- 25 • A bridge rail retrofit to remove the outdated bridge barrier and replace it
26 with a new F-shaped concrete barrier and protective screening. This will add
27 2 feet to the existing shoulders, which are 2 feet wide, improve safety, and
28 update the bridge face.
- 29 • At the I-5 northbound ramps
 - 30 ○ striping improvements, including extending the center double-line
31 stripes, striping “STOP” in front of the off-ramp stop bar, striping an
32 eastbound right turn flange, and striping an island at the on-ramp,
33 and,
 - 34 ○ installation of large “Wrong Way” signs facing West Valley View Road
35 near the end of the off-ramp.
 - 36 ○ A speed study to justify reducing the posted speed. Under current
37 conditions, the speed on West Valley View Road changes from a

1 posted speed of 40 miles per hour at the I-5 southbound ramps to an
2 un-posted speed of 55 mile per hour east of the southbound ramps.

3 See Figure 3.

4 **Reasons for Selection**

5 **Retention of the Existing Interchange Configuration**

6 Reconfiguration of the interchange to replace the existing “gullwing” design of the
7 northbound ramps is not included in the preferred concept because the interchange
8 is forecasted to operate at acceptable levels. The only drawback of the “gullwing” is
9 that the entrance and exit ramps are close to each other. Elsewhere in the United
10 States, compared to more conventional interchange designs, designs where
11 entrance and exit ramps are located close to each other have seen more instances of
12 drivers entering the freeway using the off-ramp, resulting in head-on collisions.
13 According to ODOT interchange staff, this has not been an issue at the northbound
14 ramps of this interchange or at other, similar interchanges in Oregon. In addition,
15 the improved signing and striping at the northbound ramps included in the
16 preferred concept are intended to reduce the chance of a motorist entering I-5 using
17 the off-ramp.

18 **Retention of the Existing Bridge**

19 The retention of the existing bridge resulted from the consensus view of TAC
20 members, which included six representatives of ODOT. There are no structural
21 issues with the bridge. In the absence of structural or operational problems,
22 securing funding to replace the bridge is considered unlikely.

23 **Application of the ODOT Standard for Rural Bridges, If the Bridge Were Replaced**

24 This, too, was the consensus view of TAC members. While the applicable ODOT
25 standard results from the fact that the bridge is within the Talent urban growth
26 boundary, no urban development is expected east of the interchange. Forecasted
27 pedestrian and bicycle volumes are low because of this and because there are no
28 substantial destinations for pedestrian or bicycle trips east of the interchange.

29 **Travel Lane Width**

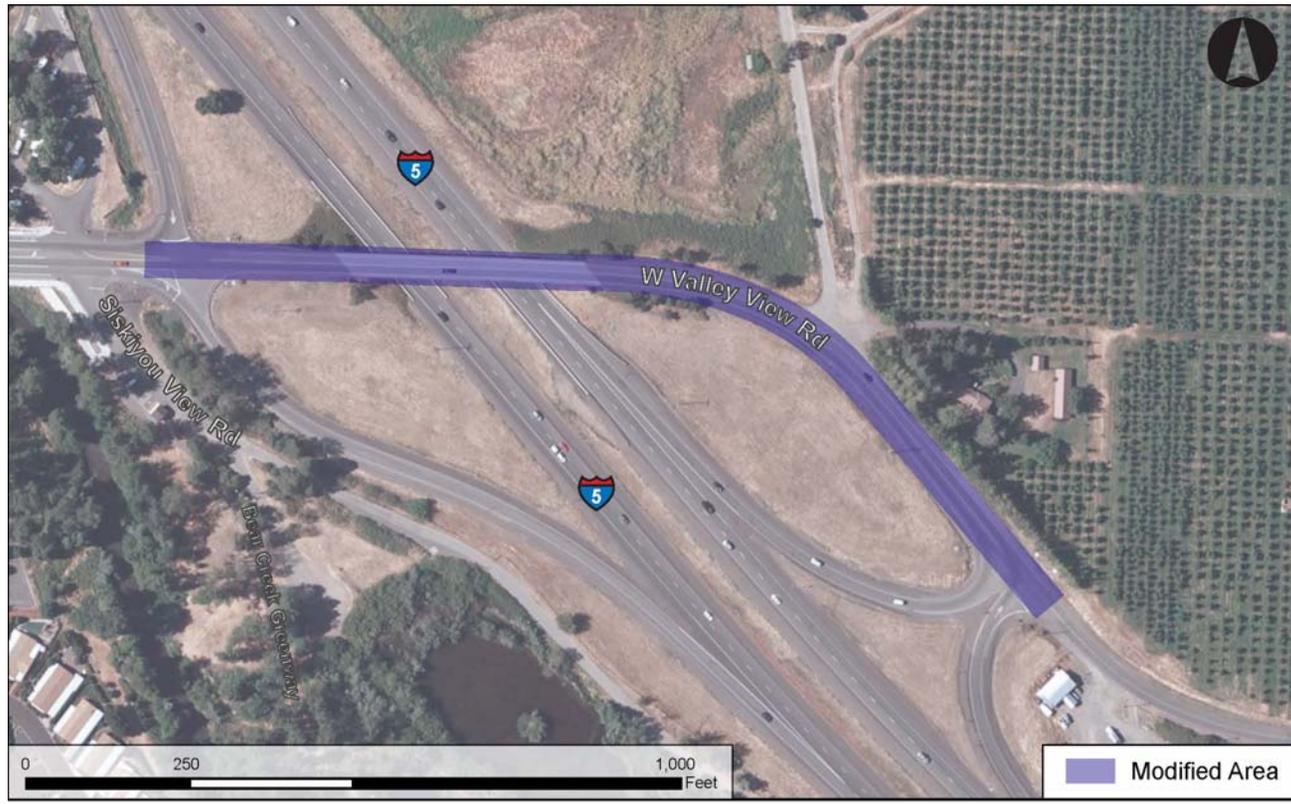
30 Retention of the existing 12-foot travel lane widths, even though the ODOT standard
31 for rural interchange lane widths is 11 feet, is based on expected volumes of truck
32 and recreation vehicle traffic to and from I-5.

33 **Shoulder**

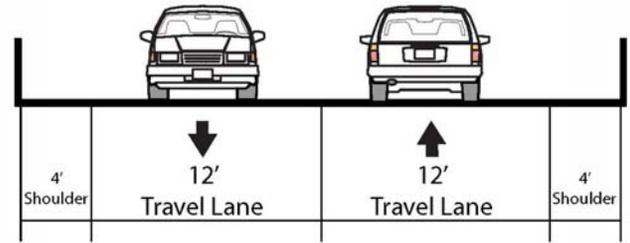
34 It was the consensus of the group to create a consistent shoulder for pedestrians
35 and cyclists only if possible within the existing pavement width across the
36 interchange bridge. The interchange bridge rail retrofit will widen the paved width
37 from 30-feet to 32-feet. This provides enough width for 12-foot travel lanes and 4-
38 foot shoulders the entire distance between the I-5 southbound and I-5 northbound
39 ramps. A 4-foot shoulder is carried west of the I-5 southbound ramps to tie into 6-
40 foot bike lanes west of Siskiyou View.

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Figure 3. Preferred Concept, Interchange Area



Plan View



Cross Section

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1 **Signing and Striping**

2 Striping improvements are proposed at the I-5 northbound ramps to make traffic
3 movements clearer. Extending the center double-line further into the intersection
4 from the east will reduce the potential for a westbound left turning driver to enter
5 into the off-ramp. Striping an eastbound right turn flange and island at the I-5
6 northbound on-ramp will make it clearer for drivers stopped at the off-ramp to
7 determine whether the eastbound vehicle is continuing through or turning. Striping
8 “STOP” in advance of the off-ramp stop bar will reinforce the need to stop before
9 continuing into the intersection. Installation of large “Wrong Way” signs facing West
10 Valley View Road near the end of the off-ramp will reduce the chances of a motorist
11 entering the off-ramp. All of these proposed striping and signage improvements
12 address problems mentioned by TAC members and by citizens at the open house.

13 **Speed Study**

14 A speed study is recommended within the Interchange Area to justify reducing the
15 speed on West Valley View Road. Currently, the posted speed on West Valley View
16 Road between OR 99 and Siskiyou View Road is 40 miles per hour. Travel speeds
17 are expected to go down when West Valley View Road is restriped to a three-lane
18 section with landscaped bike lane buffers. The allowed speed east of the I-5
19 southbound ramps is 55 miles per hour, which is neither likely justified nor
20 necessary. Citizens who attended the January 2015 open house reported westbound
21 vehicles on West Valley View Road approaching the intersection with the
22 southbound off-ramp at high speeds, impairing their ability to turn onto West Valley
23 View Road. A speed study will provide the necessary justification to have the posted
24 speed reduced within the interchange area. This will reduce the potential for and
25 severity of crashes and make the corridor safer for pedestrians and cyclists.

26 **PREFERRED CONCEPT, RURAL AREA**

27 ***Description***

28 The rural area section includes the section of West Valley View Road under Jackson
29 County jurisdiction from the I-5 northbound ramps to Suncrest Road. The preferred
30 concept for this section is intended to:

- 31 • Be consistent with the County design standard for rural minor collectors,
32 while also staying within the existing 40-foot right-of-way
- 33 • Retain one existing travel lane in each direction
- 34 • Create a shoulder with a consistent width

35 The preferred concept includes:

- 36 • 11-foot travel lanes and 5-foot shoulders on West Valley View Road between
37 the I-5 northbound off-ramp and Suncrest Road.
- 38 • A speed study to justify reducing the speed. Under current conditions, the
39 speed on West Valley View Road changes from a posted speed of 40 miles per

1 hour at the I-5 southbound ramps to an un-posted speed of 55 mile per hour
2 east of the ramps to Suncrest Road. A speed study is proposed for the entire
3 section east of the I-5 southbound ramps.

4 See Figure 4.

5 ***Reasons for Selection***

6 **Travel Lanes**

7 The decision to retain one 11-foot travel lane in each direction is based on need. No
8 operational issues were identified as a result of existing or forecasted traffic
9 volumes with a two-lane section. Eleven-foot travel lanes meet the Jackson County
10 design standard for minor rural collectors, which is how this segment of West Valley
11 View Road is classified.

12 **Shoulder**

13 It was the consensus of the TAC to create a consistent shoulder for pedestrians and
14 cyclists while staying within the existing right-of-way. The County rural design
15 standard recommends a 4 to 5-foot shoulder and sufficient right-of-way (40-feet)
16 currently exists to include 5-foot shoulders for pedestrians and cyclists. It was for
17 this reason that the larger 5-foot shoulder was incorporated into the preferred
18 concept.

19 **Speed Study**

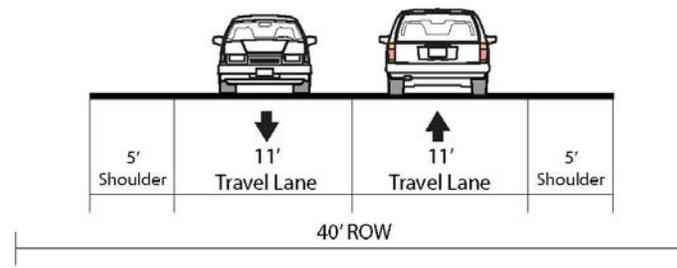
20 A speed study is included to justify reducing the speed on West Valley View Road to
21 better transition between the urban area west of the interchange and the rural area
22 to the east, as well as increase safety. The speed on West Valley View Road east of
23 the I-5 southbound ramps is 55 miles per hour, which increases the potential for
24 and severity of crashes. It also lowers the comfort level for pedestrians and cyclists
25 along the shoulder of the roadway. Reducing the speed within this section will
26 improve conditions for all travel modes.

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Figure 4. Preferred Concept, Rural Area



Plan View



Cross Section

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