OR 140 Corridor Plan:
I-5 Exit 35 to Brownsboro–Eagle Point Road

DRAFT Technical Memorandum #6
Alternatives Analysis

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

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6. ALTERNATIVES ANALYSIS

This technical memorandum presents the conceptual development of improvements to address deficiencies along the OR 140 corridor as identified through existing and future baseline analysis.

6.1. Concept Development

The alternatives analysis focused on four areas for consideration within the OR 140 corridor:

- **Highway Redesignation** – These concepts suggest potential changes in highway designation to address consistency in statewide classification or respond to system changes imposed by other projects.
- **Jackson County Reclassification** – These concepts suggest potential changes to roadway classifications for consistency between the state and county.
- **Segment Improvements** – These concepts identify potential improvements to address geometric, safety, or operational deficiencies in the OR 140 corridor that extend beyond the limits of a single intersection.
- **Intersection Improvements** – These concepts identify potential improvement to address geometric, safety, or operational deficiencies at individual intersections within the OR 140 corridor.

Under each category of concepts, two groups of improvements were developed. The first group of improvement concepts is based on the future financially-constrained transportation network assumed in the 2009-2034 Regional Transportation Plan (RTP) prepared by the Rogue Valley Metropolitan Planning Organization (RVMPO). This network includes the improvements to OR 62 resulting from funding through the Jobs in Transportation Act (JTA). The second group responds to the completion of the full corridor improvement identified in the OR 62 Corridor Solutions Environmental Impact Statement (EIS). The full corridor will impact OR 140 on its alignment along Agate Road and Leigh Way.

6.2. Alternatives Evaluation

The alternatives analysis included traffic operations, road geometries and right-of-way requirements, environmental and land use consequences, and cost opinions.

6.2.1. Traffic Operations and Safety

Traffic operations were evaluated for concepts that were identified to address operational deficiencies. The operational assessment focuses on the volume-to-capacity (v/c) ratio and

level of service (LOS) for the 2034 future condition. Operational results for the concepts were compared to the mobility standards set forth in the Highway Design Manual[1] (HDM).

At intersections where potential changes in traffic control or turn lanes were considered, the procedures in the ODOT Analysis Procedures Manual (APM) were followed. For traffic signal concepts, the ODOT preliminary traffic signal warrants[2] were evaluated. For potential turn lanes on the rural sections of the highway, the APM turn lane criteria[3] were evaluated. Existing traffic volumes were applied to determine if warrants for traffic signals or criteria for turn lanes might be met today. Year 2034 traffic volumes were also evaluated to determine potential need in the future.

The existing (2010) and future baseline (2034) traffic volumes have been attached to this memo (Figure 6-1 – Existing and Figure 6-2 – Future) for easy reference.

Some improvements are focused on addressing safety concerns or may address safety as well as traffic operations deficiencies. Crash patterns from the five-year analysis period (2005 through 2009) are discussed for those improvements that address safety.

6.2.2. Basic Roadway Geometries and Right-of-Way Requirements

Illustrations of basic roadway geometry and right-of-way needs were developed for concepts that involve infrastructure improvements. The drawings approximate roadway centerlines, edge of roadway and right of way using available base mapping.

6.2.3. Environmental and Land Use Assessment

Impacts to resources were qualitatively assessed based on the data assembled for the environmental and land use reconnaissance. The level of analysis of the study area is designed to identify those areas judged to have considerable potential for conflict.

6.2.4. Concepts Cost Opinions

Rough order of magnitude cost opinions were developed using present day dollars and are consistent with standard estimating methods. The estimates include a contingency factor but do not include right-of-way costs. The cost opinions are intended to help differentiate alternatives by approximating the relative costs of each project.

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[1] Table 10-1: 20 Year Design-Mobility Standards (Volume/Capacity [V/C] Ratio), Highway Design Manual, 2003, online reference: http://egov.oregon.gov/ODOT/HWY/ENGSERVICES/hwy_manuals.shtml

[2] Section 7.4 Traffic Signal Warrants, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf

[3] Section 7.2 Turn Lane Criteria, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf. Note: These criteria are also consistent with the criteria in Appendix F of the Highway Design Manual.

6.3. Highway Redesignation

Three potential changes in highway designation were identified to address consistency in statewide classification or respond to system changes imposed by other projects. A brief summary of the projects is presented in Table 6-1. Two of the projects are recommended for consistency of statewide designations through the corridor, the third project represents a system change needed to respond to the full corridor improvement identified in the OR 62 Corridor Solutions EIS.

Table 6-1. Summary of OR 140 Concepts - Highway Redesignation

ID	Location	General Description	Milepoints	Reason
Improvement Concepts with Tier 1 Improvements from the 2034 RTP				
HR-1	Blackwell Road/ OR 99	Extend OR 140 and statewide highway designation approximately 0.3 miles from current terminus at I-5 NB ramps across freeway to I-5 SB ramps/Willow Springs Road	-8.29 on OR 140 (HWY 270) to 0.34 on OR 99 (HWY 63)	Consistent statewide designation through the interchange
HR-2	OR 140 from I-5 to OR 62	Obtain freight designation for OR 140 west of OR 62	-8.29 to 0.00	Consistent freight designation through the I-5 interchange
Improvement Concepts with the Full OR 62 Corridor Improvements				
HR-3	OR 140 from Crater Lake Highway to Agate Road/Avenue G Intersection	Revise the current routing of OR 140 from Leigh Way and Agate Road to Crater Lake Highway and Avenue G	0.00 to –1.16	Response to OR 62 full improvements which will use Agate Road and create a cul-de-sac on Leigh Way

6.3.1. Concept HR-1 – Extension of OR 140 to I-5 Southbound Ramps

OR 140, a statewide highway, currently ends at the I-5 northbound ramp terminal while the segment between the northbound and southbound ramp terminals is designated as OR 99, a district highway. To obtain a consistent statewide classification through the interchange, with associated management objectives, the segment of highway between the ramps could be reclassified as a statewide highway. Consideration should also be given to extending the OR 140 designation to the southbound ramp terminal. This improvement is illustrated in Figure 6-3.

Changes to traffic operations are discussed below. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

Concept HR-1 Traffic Operations

Traffic operations would not be directly impacted by this designation since the current Oregon Highway Plan (OHP) mobility standards for a statewide highway within an MPO is a maximum v/c ratio of 0.85[4] which is the same as the value for a ramp terminal intersecting a district highway within an MPO[5]. The HDM mobility standards would be 0.80 for a statewide highway; there is no guidance on district highways at ramp terminals.

6.3.2. Concept HR-2 – Extension of Freight Route Designation

Although OR 140 is designated as a statewide highway throughout the corridor study area, the freight route designation only applies to the portion of OR 140 east of OR 62. Concept HR-2 would continue the freight route designation from OR 62 to I-5. This designation would apply management objectives with a greater emphasis on freight movement than the statewide designation alone.

Changes to traffic operations are discussed below. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

Concept HR-2 Traffic Operations

Although traffic operations in the corridor would not change as a result of this designation, the current OHP mobility standard for a statewide highway within an MPO is a maximum v/c ratio of 0.85 while a statewide freight route allows a maximum v/c ratio of 0.80. The freight route designation would change the OHP mobility standards to 0.80 between the I-5 northbound ramp terminal and the intersection with OR 62. The HDM mobility standard would change from 0.80 to 0.75 with the freight route designation.

If this concept were combined with the highway redesignation suggested in Concept HR-1, the mobility standard for the southbound ramp terminal would also change to 0.80. The mobility standard would remain at 0.85 if the district highway classification is not changed.

6.3.3. Concept HR-3 – Rerouting to Crater Lake Highway and Avenue G

Construction of the full corridor improvement identified in the OR 62 Corridor Solutions EIS would impact OR 140 on its alignment along Agate Road and Leigh Way. Although two build alternatives are under consideration in the EIS, both would have the same alignment in the OR 140 corridor study area. The improvements to be constructed in Phase 1 and 2 (JTA funded) currently bring the OR 62 expressway alignment back to the existing OR 62 Crater Lake Highway

[4] Table 6: Maximum Volume to Capacity Ratios for Peak Hour Operating Conditions , Oregon Highway Plan, 1999, updated through 2006.

[5] Although the interchange does not lie within any Urban Growth Boundary (UGB), the area is within and Metropolitan Planning Organization (MPO) boundary. Table 6 of the Oregon Highway Plan does not include an MPO designation outside of a UGB; therefore, the MPO standards were determined to apply. This assumption was confirmed through discussions with the ODOT Transportation Planning and Analysis Unit.

alignment south of OR 140, at approximately the location where Agate Road connects to the highway. The full corridor improvement would extend these improvements northward along Agate Road, through the White City industrial area before continuing eastward along West Dutton Road and reconnecting with Crater Lake Highway. The new OR 62 expressway would overlap OR 140 along the section of Agate Road between Leigh Way and Avenue G. Leigh Way would no longer connect to Agate Road but would end in a cul-de-sac and only serve the adjacent land uses.

To address this future disconnect, the current routing of OR 140 from Leigh Way and Agate Road would need to be revised. Two potential concepts were initially considered. Both would route OR 140 onto Crater Lake Highway (Old OR 62) but one would route OR 140 onto Antelope Road and the other would route OR 140 onto Avenue G.

After initially considering Antelope Road as the route for OR 140, this concept was discarded. Antelope Road plays an important role in serving existing industrial development in White City between Crater Lake Highway (OR 62) and Kirtland Road. It was originally considered as one of the potential routes for OR 140 but was discarded because of the potential conflict between the management objectives of a statewide highway and the access needs of this developed industrial area. This same conflict would exist if OR 140 were eventually rerouted in response to the OR 62 Expressway extension. Furthermore, because the OR 62 expressway would not allow for any connection at Agate Road, OR 140 would need to be routed along Antelope Road to Table Rock Road or even to Kirtland Road. Therefore, this option was dropped from further consideration.

Rerouting OR 140 along Crater Lake Highway and Avenue G thus became the concept carried forward for analysis. This route would take advantage of the existing five-lane cross-section of Crater Lake Highway between OR 140/Leigh Way and Avenue G but it would also use Avenue G, a two-lane roadway classified as an industrial collector in the White City Transportation System Plan (TSP). Even more than Antelope Road, this segment of Avenue G is characterized by frequent access points from both public streets and driveways. However, this segment is relatively short, approximately 0.8 miles, and access spacing on this segment could be improved with an eventual roadway upgrade, as discussed under Section 6.5. Roadway Segment Improvements, Concept RS-8 – Avenue G – OR 140 Reroute Widening.

Concept HR-3 Traffic Operations

The traffic analysis for the OR 62 Corridor Solutions EIS was examined to determine if the OR 62 intersections with Avenue G and Antelope Road would have adequate capacity to accommodate rerouting OR 140 onto Crater Lake Highway and Avenue G. The EIS analysis shows that the intersection of Avenue G and Crater Lake Highway would have an overall v/c ratio under 0.60 indicating that the intersection would operate well below the mobility standard for a statewide highway. If Crater Lake Highway was used to reroute OR 140 to the intersection with Avenue G, the realignment volumes would also impact the through movements of the Antelope Road/Crater Lake Highway intersection. The analysis of Antelope Road and Crater Lake Highway shows a forecast v/c ratio near 0.90 for the intersection.

Additional refinement to signal timing and coordination may be able to bring this intersection below mobility standards; however, priority could be given to the north-south movement to ensure smoother traffic flow for the rerouted OR 140 traffic.

Concept HR-3 Basic Roadway Geometries and Right-of-Way Requirements

Crater Lake Highway is a five-lane roadway which would not need upgrades to accommodate the OR 140 reroute. Potential changes to roadway geometry for Avenue G and right of way are discussed under Section 6.5. Roadway Segment Improvements, Concept RS-8 – Avenue G – OR 140 Reroute Widening.

Concept HR-3 Environmental and Land Use Assessment

Potential impacts to environmental or land use resources along Avenue G are discussed under Section 6.5. Roadway Segment Improvements, Concept RS-8 – Avenue G – OR 140 Reroute Widening.

Concept HR-3 Concepts Cost Opinions

Potential construction costs are associated with this concept are discussed under Section 6.5. Roadway Segment Improvements,Concept RS-8 – Avenue G – OR 140 Reroute Widening.

6.4. Jackson County Reclassification

Seven potential changes in functional classification were identified to address consistency with statewide classification, respond to changes in traffic demand, or respond to system changes imposed by other projects. A brief summary of the projects is presented in Table 6-2. Five of the projects are recommended for consistency with statewide designations through the corridor, the sixth project is need today to address the large volume of southbound OR 62 traffic destined for westbound OR 140, and the seventh project represents a system change needed to respond to the full corridor improvement identified in the OR 62 Corridor Solutions EIS. Figure 6-5 indicates the location of these concepts.

Table 6-2. Summary of OR 140– Jackson County Reclassification

ID	Location	General Description	Milepoints	Reason
Improvement Concepts with Tier 1 Improvements from the 2034 RTP				
JCR-1	Blackwell Road	Reclassify from Major Collector to Arterial	-8.29 to -7.02	Consistency with statewide highway designation
JCR-2	Kirtland Road (rural section)	Reclassify from Major Collector to Arterial	-7.02 to -5.12 (White City UUC)	Consistency with statewide highway designation
JCR-3	Kirtland Road (White City section)	Reclassify from Industrial Collector to Arterial	-5.12 (White City UUC) to -2.55	Consistency with statewide highway designation
JCR-4	Avenue G (state section)	Reclassify from Industrial Collector to Arterial	-2.55 to -1.16	Consistency with statewide highway designation
JCR-5	Agate Road	Reclassify from Industrial Collector to Arterial	-1.16 to -0.20	Consistency with statewide highway designation

Table 6-2. Summary of OR 140– Jackson County Reclassification

ID	Location	General Description	Milepoints	Reason
JCR-6	Avenue G (county section)	Reclassify from Industrial Collector to Minor Arterial	NA	Response to increasing through traffic demand
Improvement Concepts with the Full OR 62 Corridor Improvements				
JCR-7	Avenue G (county section) with rerouted OR 140	Reclassify from Industrial Collector to Arterial	NA	Response to OR 140 rerouting (Concept HR-3)

Ultimately, the RTP will also need to change the classification of the roadways listed in Table 6-2 for consistency as well. Map 5.6.1 of the RTP currently shows all of the roadways that comprise OR 140 as either Collector or Arterial roads. The RTP would need to be changed to indicate that these roads are now a state highway.

6.4.1. Concept JCR-1 – Blackwell Road Reclassification

Blackwell Road is currently classified as a Major Collector in the Jackson County TSP. Concept JCR-1 would reclassify Blackwell Road from the I-5 Interchange (Milepoint -8.29) to Kirtland Road (Milepoint -7.02) as an Arterial for consistency with the statewide highway designation associated with OR 140. (See Figure 6-5.)

This concept would have no impact to traffic operations or associated standards since state standards already apply. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-1 – Blackwell Road Improvements – Widening and Concept RS-2 – Blackwell Road Improvements – Widening and Curve Realignment.

6.4.2. Concept JCR-2 – Kirtland Road Reclassification (Rural Section)

Like Blackwell Road, Kirtland Road is currently classified as a Major Collector in the Jackson County TSP. Concept JCR-2 would reclassify the section of Kirtland Road from Blackwell Road (Milepoint -7.02) to the White City Urban Unincorporated (UUC) boundary (Milepoint -5.12) as an Arterial for consistency with the statewide highway designation associated with OR 140. (See Figure 6-5.)

This concept would have no impact to traffic operations or associated standards since state standards already apply. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-3 – Kirtland Road – Safety Improvements and Concept RS-4 – Kirtland Road – Widening.

6.4.3. Concept JCR-3 – Kirtland Road Reclassification (White City Section)

Kirtland Road is currently classified as an Industrial Collector in the Jackson County and White City TSPs. Concept JCR-3 would reclassify the section of Kirtland Road from the White City UUC boundary (Milepoint -5.12) to Avenue G (Milepoint -2.55) as an Arterial for consistency with the statewide highway designation associated with OR 140. This section includes the portion of Kirtland Road that currently remains under county jurisdiction, which together with a segment of Pacific Avenue, is under construction to smooth the curves for a more direct alignment with Avenue G. (See Figure 6-5.)

This concept would have no impact to traffic operations or associated standards since state standards already apply. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-3 – Kirtland Road – Safety Improvements and Concept RS-4 – Kirtland Road – Widening.

6.4.4. Concept JCR-4 – Avenue G Reclassification (State Section)

Like Kirtland Road, Avenue G is currently classified as an Industrial Collector in the Jackson County and White City TSPs. Concept JCR-4 would reclassify the section of Avenue G from the realignment of Kirtland Road/Pacific Avenue (Milepoint -2.55) to Agate Road (Milepoint -1.16) as an Arterial for consistency with the statewide highway designation associated with OR 140. (See Figure 6-5.)

This concept would have no impact to traffic operations or associated standards since state standards already apply. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-5 – Avenue G – Widening.

6.4.5. Concept JCR-5 – Agate Road Reclassification

Agate Road is currently classified as an Industrial Collector in the Jackson County and White City TSPs. Concept JCR-5 would reclassify the section of Agate Road from Avenue G (Milepoint -1.16) to Leigh Way (Milepoint -0.20) as an Arterial for consistency with the statewide highway designation associated with OR 140. (See Figure 6-5.)

This concept would have no impact to traffic operations or associated standards since state standards already apply. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-6 – Agate Road – Widening.

6.4.6. Concept JCR-6 – Avenue G Reclassification (County Section)

Concept JCR-6 addresses the county section of Avenue G between Agate Road and OR 62. Although this section is not part of OR 140, it serves as a direct link between OR 62 and OR 140 for traffic traveling between Eagle Point and I-5. It also carries traffic from the residential areas of White City that lie east of OR 62. These demands are both expected to become an increasing portion of the traffic mix using Avenue G between OR 62 and OR 140 (Agate Road). For consistency with the mix of traffic served by this section of roadway and anticipated growth in through traffic, a reclassification from Industrial Collector to Minor Arterial is recommended. In the Jackson County TSP, Minor Arterial (Urban) and Major Collector are grouped together. (See Figure 6-5.)

Although the reclassification would have no direct impact to traffic operations or other factors evaluated for the alternatives analysis, the change in classification would change the street design standards for the segment. However, the reclassification itself does not imply a specific roadway improvement project is planned.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-7 – Avenue G – County Section Widening

6.4.7. Concept JCR-7 – Avenue G Reclassification with Rerouted OR 140

Concept JCR-7 addresses the county section of Avenue G between Agate Road and OR 62 if OR 140 is rerouted (Concept HR-3) in response to construction of the full corridor improvement identified in the OR 62 Corridor Solutions EIS. Since this section of Avenue G would also serve as OR 140 under these conditions, Concept JCR-7 would reclassify it as an Arterial for consistency with the statewide highway designation associated with OR 140. (See Figure 6-5.)

Although the reclassification would have no direct impact to traffic operations or other factors evaluated for the alternatives analysis, the change in classification would change the street design standards for the segment. No changes to roadway geometry or right of way would be required, no impacts to environmental or land use resources would result, and no construction costs are associated with this concept.

The evaluation of upgrading this section of roadway to meet the functional classification is discussed in Section 6.5. Roadway Segment Improvements, Concept RS-8 – Avenue G – OR 140 Reroute Widening.

6.5. Roadway Segment Improvements

Eight potential road segment improvements were identified during the concept development process to bring OR 140 up to state standards, provide additional capacity, or address safety concerns. A brief summary of the projects is presented in Table 6-3. Several of these potential improvements have options that are considered with the concept.

Table 6-3. Summary of OR 140 Concepts – Roadway Segment Improvements

ID	Location	General Description	Milepoints	Reason
Improvement Concepts with Tier 1 Improvements from the 2034 RTP				
RS-1	Blackwell Road	Widen Blackwell Road to meet state standards	-8.17 to -7.02 widening	Safety and Capacity Consistency with statewide highway design standard
RS-2	Blackwell Road	Widen Blackwell Road to meet state standards and modify curves for higher design speed	-8.17 to -7.02 widening	Safety and Capacity Consistency with statewide highway design standard
RS-3	Kirtland Road	Add safety improvements along existing roadway	-7.02 to -2.71	Safety
RS-4	Kirtland Road	Widen Kirtland Road to meet state standards	-7.02 to -2.71	Consistency with statewide highway design standard
RS-5	Avenue G	Widen Avenue G to meet state standards	-2.55 to -1.16	Consistency with statewide highway design standard
RS-6	Agate Road	Widen Agate Road to meet state standards	-1.16 to -0.20	Consistency with statewide highway design standard
RS-7	Avenue G – Agate Road to OR 62	Widen Avenue G to Jackson County Street Design Standards	NA (County Road)	High demand traveling to OR 140 from White City and OR 62 to north
Improvement Concepts with the Full OR 62 Corridor Improvements				
RS-8	Avenue G – Agate Road to OR 62	Widen Avenue G to meet state standards	NA (County Road)	Eventual need with OR 62 Full Corridor Improvement

6.5.1. Concept RS-1 – Blackwell Road Improvements – Widening

Concept RS-1 would widen Blackwell Road to meet state standards but would keep the alignment along the current centerline to minimize impacts within the existing right of way to the greatest extent possible. Blackwell Road is currently a two-lane roadway with a roadway surface of 30 to 32 feet and a right-of-way width of 60 feet. Two state cross-sections were considered for this concept:

A. **2-Lane Rural** – This cross-section includes two 12-foot travel lanes and 8-foot shoulders within an 80-foot right of way.

B. **3-Lane Rural** – This cross-section includes two 12-foot travel lanes, a 16-foot median lane, and 8-foot shoulders within a 90-foot right of way.

No urban sections were considered for Blackwell Road because of its relatively remote location compared to the City of Central Point. An urban section could eventually be developed within the right of way for either option under consideration.

Figure 6-6 illustrates the concept layout for the Blackwell Road widening with a two-lane cross-section. The three-lane cross-section was not illustrated because relative difference in roadway and right-of-way width is difficult to distinguish at this scale; however, a schematic of the three-lane cross-section is included. Impacts associated with Concept RS-1 are discussed below.

Concept RS-1 Traffic Operations and Safety

Current traffic demand on Blackwell Road exceeds 8,000 vehicles per day (vpd) and 2034 forecast demand is expected to be near 12,000 vpd. Development of the Tolo industrial area would further increase demand.

Traffic Operations:

Concept RS-1, Option A would provide a two-lane roadway on Blackwell Road. While a two-lane cross-section may be able to accommodate future demand up to 15,000 vpd, congestion would be present at that level of demand and most intersections would need left-turn lanes to provide safe and efficient operations. Even at 12,000 vpd, turn lanes would be desirable at most access points.

Concept RS-1, Option B would provide a three-lane roadway on Blackwell Road. A three-lane cross-section may be able to accommodate volumes as high as 18,000 vpd. The center median would provide space for left-turn lanes at access points and could allow for two-stage left-turn movements at some locations.

Safety:

Concept RS-1 would widen Blackwell Road to meet state standards for roadway width but would keep the alignment along the current centerline; it does not modify any of the existing curves along the roadway. There are several sections where curves “break” repeatedly rather than flowing continuously. Although the posted speed for Blackwell Road is 45 mph, many drivers travel faster than the posted speed. These curves do not provide much leeway for driver error, particularly at these higher speeds. The crash analysis indicated a history of collisions near these curves. Wider shoulders, as assumed in Option A and the center median lane assumed in Option B may not ameliorate the safety concerns.

Concept RS-1, Option A would provide some safety benefits because of the wider shoulders in the corridor. These shoulders would provide more vehicle maneuvering room, if needed and they exceed the minimum desired width for shoulder bikeways on rural roads.

Concept RS-1, Option B would provide the same safety benefits as Option A but would have several added benefits as well. The center median lane would reduce the likelihood of head on and sideswipe collisions by providing a buffer between through travel lanes. The center median lane would also provide a refuge for left-turning vehicles waiting for a gap in oncoming traffic, which can reduce the likelihood of rear end collisions.

Concept RS-1 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-1 would widen Blackwell Road to meet state standards but would keep the alignment along the current centerline to minimize impacts within the existing right of way to the greatest extent possible. Figure 6-6 illustrates the basic roadway geometry and right of way for the Blackwell Road widening with a two-lane cross-section and an 80-foot right of way. There are several sections where curves "break" repeatedly rather than flowing continuously; these have not been modified for this concept. *(Concept RS-2 – Blackwell Road Improvements – Widening and Curve Realignment addresses this issue.)*

The two-lane cross-section was illustrated with an 80-foot right of way but the 40-foot paved surface could possibly be accommodated within the existing 60-foot right of way. However, the construction of any auxiliary turn lanes would be difficult to accommodate.

The three-lane cross-section was illustrated with a 90-foot right of way. While a narrower right of way could be used, the existing 60-foot right of way could not accommodate the 56-foot paved surface and the slopes needed off either shoulder. Additional right of way would need to be acquired for this option.

Concept RS-1 Environmental and Land Use Assessment

Concept RS-1 would widen Blackwell Road along its current centerline alignment. Depending on the cross-section selected, the roadway would be 8 to 24 feet wider than the existing cross-section. Although the roadway itself would be narrower than the existing right of way, at least 20 feet of additional right of way is assumed for this analysis. Both Option A and Option B would bring the roadway closer to existing structures along Blackwell Road but Option B would have more significant impacts. With either option, modifications to the alignment illustrated in Figure 6-6 could reduce impacts to structures on adjacent properties.

The area along Blackwell Road is disturbed by existing development. Willow Creek does cross Blackwell Road and a section of the roadway appears to be within the 100-year flood plain of the creek. No other natural resources are mapped within the right of way illustrated for either concept.

Concept RS-1 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. Both cost opinions assumed that the existing roadway would only need an overlay and would not require reconstruction. The estimates for this concept with different cross-sections are:

- Concept RS-1 Option A – Blackwell Widening – Two Lanes: $1.4 million
- Concept RS-1 Option B – Blackwell Widening – Three Lanes: $3.6 million

Neither of these costs includes acquisition of additional right of way.

6.5.2. Concept RS-2 – Blackwell Road Improvements – Widening and Curve Realignment

Concept RS-2 would widen Blackwell Road to meet state standards and would realign sections of the roadway to smooth curves and meet a 55 mph design speed. Similar to Concept RS-1, two state cross-sections were considered for this concept:

A. **2-Lane Rural** – This cross-section includes two 12-foot travel lanes and 8-foot shoulders within an 80-foot right of way.

B. **3-Lane Rural** – This cross-section includes two 12-foot travel lanes, a 16-foot median lane, and 8-foot shoulders within a 90-foot right of way.

No urban sections were considered for Blackwell Road because of its relatively remote location compared to the City of Central Point. An urban section could eventually be developed within the right of way for either option under consideration.

Figure 6-7 illustrates the concept layout for the Blackwell Road widening and curve realignment with a three-lane cross-section. A schematic of the two-lane cross-section is also included. Impacts associated with Concept RS-2 are discussed below.

Concept RS-2 Traffic Operations and Safety

Current traffic demand on Blackwell Road exceeds 8,000 vehicles per day (vpd) and 2034 forecast demand is expected to be near 12,000 vpd. Development of the Tolo industrial area would further increase demand.

Traffic Operations:

The traffic operations for Concept RS-2 would be the same as those for Concept RS-1 because the cross-section assumptions are the same.

Safety:

Concept RS-2 would widen Blackwell Road to meet state standards and would realign sections of the roadway to smooth curves and meet a 55 mph design speed. The spiraling curves and

higher design speed should improve the safety of the roadway along those sections where curves are currently breaking and crash analysis indicates a history of collisions.

The safety benefits of the two- and three-lane cross-sections would be the same for Concept RS-2 as those described for Concept RS-1 because the cross-section assumptions are the same.

Concept RS-2 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-2 would widen Blackwell Road to meet state standards and would realign sections of the roadway to smooth curves and meet a 55 mph design speed. Figure 6-7 illustrates the basic roadway geometry and right of way for the Blackwell Road widening with a three-lane cross-section and a 90-foot right of way.

The right-of-way needs for this concept would be much more extensive than for Concept RS-1 because of the higher design speed and curve corrections. Neither roadway option could be constructed within the existing right of way; therefore, acquisition of the proposed widths, or something similar, is recommended.

Concept RS-2 Environmental and Land Use Assessment

Concept RS-2 would widen Blackwell Road and realign sections to smooth curves. The alignment illustrated in Figure 6-7 was selected to avoid impacts to existing structures; however, the roadway would require right of way acquisition from almost all adjacent properties. Option B would have more significant requirements than Option A.

The area along Blackwell Road is disturbed by existing development. Willow Creek does cross Blackwell Road and a section of the roadway appears to be within the 100-year flood plain of the creek. No other natural resources are mapped within the right of way illustrated for either concept.

Concept RS-2 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. Because of the higher design speed and curve corrections, the alignment of Blackwell Road under this option will not consistently coincide with the existing roadway; therefore, all construction is assumed to be new work. The estimates for this concept with different cross-sections are:

- Concept RS-2 Option A – Blackwell Widening and Realignment – Two Lanes: $6.2 million
- Concept RS-2 Option B – Blackwell Widening and Realignment – Three Lanes: $8.7million

Neither of these costs includes acquisition of additional right of way or mitigation of wetland impacts.

6.5.3. Concept RS-3 – Kirtland Road – Safety Improvements

In the crash analysis performed as part of the existing transportation system evaluation, nineteen crashes occurred at non-intersection locations along Kirtland Road between Blackwell Road and Table Rock Road. Visibility on this section of roadway was highlighted as a concern by several citizen and technical advisory committee members. Concept RS-3 identifies two safety improvements that could be implemented on Kirtland Road:

A. **Delineation** – Add roadway delineators from Blackwell Road to Table Rock Road.
B. **Rumble Strips** – Add rumble strips along the shoulders for the roadway from Blackwell Road to Table Rock Road.

One of these safety improvements would provide a visual enhancement while the other provides an auditory backup for drivers. These improvements could be constructed independently or together.

Concept RS-3 Traffic Operations and Safety

Traffic operations would not be affected by these improvements which are focused on safety.

Concept RS-3, Option A would provide delineators along Kirtland Road. Crash research indicates that the benefits of delineators may be offset by adding to the likelihood of a fixed object collision when a vehicle runs off the road.

Concept RS-3, Option B would provide rumble strips along the shoulders of Kirtland Road. Crash research indicates that rumble strips can provide a measurable reduction in single vehicle run-off-the-road crashes. Almost 50 percent of the 19 crashes that occurred on Kirtland Road during the five-year analysis period were this type of crash.

Concept RS-3 Basic Roadway Geometries and Right-of-Way Requirements

Neither of these options would require any changes in geometry or additional right of way acquisition.

Concept RS-3 Environmental and Land Use Assessment

Neither of these options would require construction beyond the area already disturbed by the existing roadway; however, the rumble strips do generate noise when vehicles stray over them. The increased noise would be very intermittent rather than continuous. There are two residentially-zoned parcels immediately adjacent to Kirtland Road near High Banks Road that could be affected by the increased noise. There are a few others residences about a quarter mile from Kirtland Road and Touvelle State Park to the north (more than one quarter mile) that may possibly experience some very intermittent noise as well from the rumble strips.

Concept RS-3 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. The projects were estimated separately but some cost savings from construction of both options concurrently could be realized. The estimates for the two options under this concept are:

- Concept RS-3 Option A – Kirtland Road Delineators: $15,000
- Concept RS-3 Option B – Kirtland Road Rumble Strips: $10,000

6.5.4. Concept RS-4 – Kirtland Road – Widening

Concept RS-4 would widen Kirtland Road to meet state standards. Kirtland Road is currently a two-lane roadway with a roadway surface of 32 to 36 feet and a right-of-way width that varies from 60 feet (Approximate Milepoint -6.8 to -5.76) to 80 feet (Approximate Milepoint -5.76 to -2.71). The new construction around the realigned Blackwell/Kirtland Road intersection already has 8–foot shoulders and approximately 85 percent of Kirtland Road already has 6-foot shoulders; only the area beginning 0.1 miles west of Table Rock Road to Pacific Avenue has 4-foot shoulders. A portion of this section is under construction by Jackson County as part of the realignment of Pacific Avenue. Given the rural nature of this roadway segment, only a two-lane cross section was considered. This cross-section includes two 12-foot travel lanes and 8-foot shoulders within an 80-foot right of way.

Figure 6-8 illustrates the concept layout for the Kirtland Road widening with a two-lane cross-section. Impacts associated with Concept RS-4 are discussed below.

Concept RS-4 Traffic Operations and Safety

Current traffic demand on Kirtland Road ranges from more than 7,000 vehicles per day (vpd) near Blackwell Road to about 4,000 vpd east of Table Rock Road. The 2034 forecast demand is expected to range from about 10,500 near Blackwell Road to over 7,000 east of Table Rock Road.

Traffic Operations:

The two-lane cross-section should be able to accommodate future demand along Kirtland Road. Some intersections may benefit from the addition of left-turn lanes to provide safe and efficient operations. Specific considerations for turn lanes are addressed in Section 6.6. Intersection Improvements.

Safety:

The two-lane cross-section would provide some minor safety benefits because of the wider shoulders in the corridor. Most of the corridor (more than 85 percent) already has shoulders that are 6 feet wide, which leaves only a short segment with 4-foot shoulders in the vicinity of the signalized intersection at Table Rock Road. The wider shoulders would provide slightly

more vehicle maneuvering room, if needed and they exceed the desired width of 6 feet for shoulder bikeways on rural roads.

Concept RS-4 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-4 would widen the shoulders on Kirtland Road to meet the 8-foot state standards. Figure 6-8 illustrates the basic roadway geometry and right of way for the Blackwell Road widening with a two-lane cross-section and an 80-foot right of way.

The two-lane cross-section was illustrated with an 80-foot right of way but the 40-foot paved surface could possibly be accommodated within the existing 60-foot right of way that exists for a portion of the roadway between approximately Milepoint -6.81 and -5.76. However, the construction of any auxiliary turn lanes could be difficult to accommodate in a 60-foot right of way.

Concept RS-4 Environmental and Land Use Assessment

Concept RS-4 would widen Kirtland Road along its current centerline alignment by approximately two to four feet on either side of the road. Although no structures would be directly impacted, the roadway would be slightly closer to them than under current conditions.

Kirtland Road crosses a number of creeks and canals, including Bear Creek and Whetstone Creek. Flooding near existing culverts has been an issue noted by some project participants. Kirtland Road also runs through a number of areas with a wetlands classification of palustrine, emergent that may contain high quality vernal pools. Impacts to these resources should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided.

Concept RS-4 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. The cost opinion assumed that the existing roadway would not need an overlay. The estimate for this concept is:

- Concept RS-4 – Kirtland Widening – Two Lanes: $2.4 million

This cost does not include acquisition of additional right of way or mitigation for wetland impacts.

6.5.5. Concept RS-5 – Avenue G – Widening

Concept RS-5 would widen Avenue G to meet state standards. Avenue G is currently a two-lane roadway with a roadway surface of 36 to 37 feet and a right-of-way width of 100 feet. Three state cross-sections were considered for this concept:

A. **2-Lane Rural** – This cross-section includes two 12-foot travel lanes and 8-foot shoulders within the existing 100-foot right of way.

B. **3-Lane Rural** – This cross-section includes two 12-foot travel lanes, a 16-foot median lane, and 8-foot shoulders within the existing 100-foot right of way.
C. **3-Lane Urban** – This cross-section includes two 12-foot travel lanes, a 14-foot median lane, 6-foot bike lanes, and 6-foot sidewalks within the existing 100-foot right of way.

The Jackson County cross-section for an urban minor arterial/major collector could also be considered for this section but was not specifically evaluated. This cross-section would be the same as the 3-lane urban section for the state but includes a 7-foot planting strip between the curb and sidewalk.

Figure 6-9 illustrates the concept layout for the Avenue G widening with a three-lane rural cross-section. The other two cross-sections were not illustrated because relative difference in roadway and right-of-way width is difficult to distinguish at this scale; however, a schematic of each cross-section is included. Impacts associated with Concept RS-5 are discussed below.

Concept RS-5 Traffic Operations and Safety

Current traffic demand on Avenue G is estimated at about 4,500 vehicles per day (vpd) and 2034 forecast demand is expected to be near 8,000 vpd. Development of the adjacent industrial area would contribute to this growth.

Traffic Operations:

Concept RS-5, Option A would provide a two-lane rural roadway on Avenue G. The two-lane cross-section would be able to accommodate future demand though some left-turn lanes may be needed to provide safe and efficient operations.

Concept RS-5, Option B would provide a three-lane rural roadway on Avenue G. A three-lane cross-section would be able to accommodate future demand and the center median would provide space for left-turn lanes at any access point. It could also allow for two-stage left-turn movements at some locations.

Concept RS-5, Option C would provide a three-lane urban roadway on Avenue G. Like the rural cross-section, the center median would provide space for left-turn lanes at any access point. The urban section provides bike lanes, curbs, and sidewalks rather than a shoulder shared by bicycles and pedestrians. These amenities would not change traffic operations for vehicles but would improve the pedestrian environment considerably.

Safety:

Concept RS-5, Option A would provide some minimal safety benefits because the shoulders in the corridor would be slightly (1 to 2 feet) wider than currently constructed.

Concept RS-5, Option B would have the added benefit of the center median. The center median lane would reduce the likelihood of head on and sideswipe collisions by providing a buffer between through travel lanes. The center median lane would also provide a refuge for

left-turning vehicles waiting for a gap in oncoming traffic, which can reduce the likelihood of rear end collisions.

Concept RS-5, Option C would augment the three-lane cross-section with curbs and sidewalks which would enhance the safety of pedestrians in the corridor.

Concept RS-5 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-5 would widen Avenue G to meet state standards within the existing right of way. Figure 6-9 illustrates the basic roadway geometry and right of way for the Avenue G widening with a three-lane rural cross-section within the existing 100-foot right of way.

Geometric improvements at specific intersections are discussed in Section 6.6. Intersection Improvements.

Concept RS-5 Environmental and Land Use Assessment

Concept RS-5 would widen Avenue G along its current centerline alignment within the existing right of way. Depending on the cross-section selected, the roadway would be 4 to 26 feet wider than the existing cross-section. This area is surrounded by industrial uses that would experience minimal adverse effects from the wider roadway. Some economic benefit for adjacent properties could be derived from a higher capacity roadway with turn lanes.

The area along Avenue G is disturbed by existing development. No natural resources are mapped within the right of way illustrated for the concept.

Concept RS-5 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. All three cost opinions assumed that the existing roadway would only need an overlay and would not require reconstruction. The estimates for this concept with different cross-sections are:

- Concept RS-5 Option A – Avenue G Widening – Rural Two Lanes: $1.3 million
- Concept RS-5 Option B – Avenue G Widening – Rural Three Lanes: $4.4 million
- Concept RS-5 Option C – Avenue G Widening – Urban Three Lanes: $7.6 million

The Jackson County cross-section for an urban minor arterial/major collector would be the same section as Option C but would include a 7-foot planting strip between the curb and sidewalks which is not anticipated to measurably increase the cost.

6.5.6. Concept RS-6 – Agate Road – Widening

Concept RS-6 would widen Agate Road to meet state standards. Agate Road is currently a two-lane roadway with a roadway surface of 32 to 40 feet and a right-of-way width of 100 feet. Two state cross-sections were considered for this concept:

A. **3-Lane Rural** – This cross-section includes two 12-foot travel lanes, a 16-foot median lane, and 8-foot shoulders within the existing 100-foot right of way.
B. **3-Lane Urban** – This cross-section includes two 12-foot travel lanes, a 14-foot median lane, 6-foot bike lanes, and 6-foot sidewalks within the existing 100-foot right of way.

The Jackson County cross-section for an urban minor arterial/major collector could also be considered for this section but was not specifically evaluated. This cross-section would be the same as the 3-lane urban section for the state but includes a 7-foot planting strip between the curb and sidewalk.

Figure 6-10 illustrates the concept layout for the Agate Road widening with a three-lane rural cross-section. The other cross-section was not illustrated because relative difference in roadway and right-of-way width is difficult to distinguish at this scale; however, a schematic of the urban cross-section is included. Impacts associated with Concept RS-6 are discussed below.

Concept RS-6 Traffic Operations and Safety

Current traffic demand on Agate Road is estimated at about 4,500 vehicles per day (vpd) and 2034 forecast demand is expected to be near 8,000 vpd. Development of the adjacent industrial area would contribute to this growth. This forecast does not include the full corridor improvement for OR 62.

Traffic Operations:

Concept RS-6, Option A would provide a three-lane rural roadway on Agate Road. A three-lane cross-section would be able to accommodate future demand and the center median would provide space for left-turn lanes at any access points. It could also allow for two-stage left-turn movements at some locations.

Concept RS-6, Option B would provide a three-lane urban roadway on Agate Road. Like the rural cross-section, the center median would provide space for left-turn lanes and any access point. The urban section provides bike lanes, curbs, and sidewalks rather than a shoulder shared by bicycles and pedestrians. These amenities would not change traffic operations for vehicles but would improve the pedestrian environment considerably.

Safety:

Concept RS-6, Option A would include some benefit from wider shoulders and have the added benefit of the center median. The center median lane would reduce the likelihood of head on and sideswipe collisions by providing a buffer between through travel lanes. The center median lane would also provide a refuge for left-turning vehicles waiting for a gap in oncoming traffic, which can reduce the likelihood of rear end collisions.

Concept RS-6, Option B would augment the three-lane cross-section with curbs and sidewalks which would enhance the safety of pedestrians in the corridor.

Concept RS-6 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-6 would widen Agate Road to meet state standards within the existing right of way. Figure 6-10 illustrates the basic roadway geometry and right of way for the Agate Road widening with a three-lane rural cross-section within the existing 100-foot right of way. The at-grade railroad crossing would be fully replaced as part of the project.

Geometric improvements at specific intersections are discussed in Section 6.6. Intersection Improvements.

Concept RS-6 Environmental and Land Use Assessment

Concept RS-6 would widen Agate Road along its current centerline alignment within the existing right of way. Depending on the cross-section selected, the roadway would be 4 to 30 feet wider than the existing cross-section. This area is surrounded by industrial uses that would experience minimal adverse effects from the wider roadway. Some economic benefit for adjacent properties could be derived from a higher capacity roadway with turn lanes.

The area along Agate Road is disturbed by existing development. An area to the west of Agate Road and north of Antelope Road is mapped as Palustrine, Other wetlands but aerial photography shows this area is mostly disturbed.

Concept RS-6 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. The cost opinions assumed that the existing roadway would only need an overlay and would not require reconstruction. Both cost opinions include fully replacing the at-grade railroad crossing as part of the project. The estimates for this concept with different cross-sections are:

- Concept RS-6 Option A – Agate Road Widening – Rural Three Lanes: $3.9 million
- Concept RS-6 Option B – Agate Road Widening – Urban Three Lanes: $6.0 million

The Jackson County cross-section for an urban minor arterial/major collector would be the same section as Option B but would include a 7-foot planting strip between the curb and sidewalks which is not anticipated to measurably increase the cost.

6.5.7. Concept RS-7 – Avenue G – County Section Widening

The county section of Avenue G between Agate Road and OR 62 serves as a direct link between OR 62 and OR 140 for traffic traveling between Eagle Point and I-5. It also carries traffic from the residential areas of White City that lie east of OR 62. These demands are both expected to become an increasing portion of the traffic mix using Avenue G between OR 62 and OR 140 (Agate Road).

Concept RS-7 would upgrade the county section of Avenue G between Agate Road and OR 62 to better serve anticipated demand from both through and local traffic. Avenue G is currently a

two-lane roadway (industrial collector) with a roadway surface of 36 feet and a right-of-way width of 80 feet. Two county cross-sections were considered for this concept:

A. **3-Lane Industrial Collector** – This cross-section includes two 12- to 14-foot travel lanes, a 14-foot median lane, and 6-foot shoulders within the existing 80-foot right of way.
B. **Minor Arterial/Major Collector** – This cross-section includes two 12-foot travel lanes, a 14-foot median lane, 6-foot bike lanes, 7-foot planting strips, and 6-foot sidewalks within the existing 80-foot right of way.

Figure 6-11 illustrates the concept layout for the Avenue G widening with a Jackson County three-lane industrial collector cross-section. The other cross-section was not illustrated because relative difference in roadway and right-of-way width is difficult to distinguish at this scale; however, a schematic of each cross-section is included. Impacts associated with Concept RS-7 are discussed below.

Concept RS-7 Traffic Operations and Safety

Current traffic demand on Avenue G between Agate Road and OR 62 is estimated at about 4,000 vehicles per day (vpd) and 2034 forecast demand is expected to be near 7,500 vpd. Development of the adjacent industrial area would contribute to this growth.

Traffic Operations:

Concept RS-7, Option A would provide a three-lane industrial collector on Avenue G. A three-lane cross-section would be able to accommodate future demand and the center median would provide space for left-turn lanes at any access point. It could also allow for two-stage left-turn movements at some locations.

Concept RS-7, Option B would also provide a three-lane roadway on Avenue G. Like the industrial collector cross-section, the center median would provide space for left-turn lanes at any access point. The minor arterial section provides bike lanes, curbs, and sidewalks rather than a shoulder to be shared by bicycles and pedestrians. These amenities would not change traffic operations for vehicles but would improve the pedestrian environment considerably.

Safety:

Concept RS-7, Option A would have the center median lane which provide a refuge for left-turning vehicles waiting for a gap in oncoming traffic, which can reduce the likelihood of rear end collisions.

Concept RS-7, Option B would augment the three-lane cross-section with curbs and sidewalks which would enhance the safety of pedestrians in the corridor.

Concept RS-7 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-7 would upgrade the county section of Avenue G between Agate Road and OR 62 to better serve anticipated demand from both through and local traffic. Figure 6-11 illustrates the

basic roadway geometry and right of way for the Avenue G widening with a three-lane industrial collector cross-section within the existing 80-foot right of way. The at-grade railroad crossing would be fully replaced as part of the project.

The minor arterial cross-section could also be accommodated within the existing right of way.

Concept RS-7 Environmental and Land Use Assessment

Concept RS-7 would widen Avenue G along its current centerline alignment within the existing right of way. Depending on the cross-section selected, the roadway would be 14 to 36 feet wider than the existing cross-section. This area is surrounded by industrial uses that would experience minimal adverse effects from the wider roadway.

The area along Avenue G is disturbed by existing development. No natural resources are mapped within the right of way illustrated for the concept.

Concept RS-7 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. Both cost opinions assumed that the existing roadway would only need an overlay and would not require reconstruction. Both cost opinions include fully replacing the at-grade railroad crossing as part of the project. The estimates for this concept with different cross-sections are:

- Concept RS-7 Option A – Avenue G Widening – 3-Lane Industrial Collector: $2.6 million
- Concept RS-7 Option B – Avenue G Widening – Minor Arterial: $5.0 million

6.5.8. Concept RS-8 – Avenue G – OR 140 Reroute Widening

Concept RS-8 responds to the completion of the full corridor improvement identified in the OR 62 Corridor Solutions Environmental Impact Statement (EIS). Construction of the full corridor improvement identified in the OR 62 Corridor Solutions EIS would impact OR 140 on its alignment along Agate Road and Leigh Way. The new OR 62 expressway would overlap OR 140 along the section of Agate Road between Leigh Way and Avenue G. Leigh Way would no longer connect to Agate Road but would end in a cul-de-sac and only serve the adjacent land uses. To address this future disconnect, rerouting OR 140 along Crater Lake Highway and Avenue G would be partnered with the OR 62 full corridor improvement.

Upgrades to Avenue G while it remains under Jackson County jurisdiction were discussed under Concept RS-7. If these improvements have not been implemented prior to rerouting of OR 140, then some upgrade would be needed to bring the roadway up to state standards. Avenue G is currently a two-lane roadway (industrial collector) with a roadway surface of 36 feet and a right-of-way width of 80 feet. Two state cross-sections were considered for this concept:

A. **3-Lane Rural** – This cross-section includes two 12-foot travel lanes, a 14-foot median lane, and 8-foot shoulders within the existing 80-foot right of way.

B. **3-Lane Urban –** This cross-section includes two 12-foot travel lanes, a 14-foot median lane, 6-foot bike lanes, and 6-foot sidewalks within the existing 80-foot right of way.

Figure 6-12 illustrates the concept layout for the Avenue G widening with the three-lane rural cross-section. The other cross-section was not illustrated because relative difference in roadway and right-of-way width is difficult to distinguish at this scale; however, a schematic of each cross-section is included.

Concept RS-8 Traffic Operations and Safety

Current traffic demand on Avenue G between Agate Road and OR 62 is estimated at about 4,000 vehicles per day (vpd) and 2034 forecast demand is expected to be about 7,500 vpd with the OR 62 improvements to be constructed in Phase 1 and 2 (JTA funded). Forecasting from the OR 62 Corridor Solutions EIS indicates that future traffic volumes on Avenue G may be similar or slightly lower with the full corridor improvement construction.

Traffic operations and safety would be the same for Concept RS-8 as those discussed for RS-7. A three-lane cross-section (Options A and B) would be able to accommodate future demand and the center median would provide space for left-turn lanes at any access point. It could also allow for two-stage left-turn movements at some locations. An urban section (Option B) would provide bike lanes, curbs, and sidewalks rather than a shoulder to be shared by bicycles and pedestrians. These amenities would not change traffic operations for vehicles but would improve the pedestrian environment considerably.

Concept RS-8 Basic Roadway Geometries and Right-of-Way Requirements

Concept RS-8 would upgrade Avenue G between Agate Road and OR 62 to meet state standards in response to rerouting OR 140 as part of the OR 62 full corridor improvement. Figure 6-12 illustrates the basic roadway geometry and right of way for the Avenue G widening with a three-lane rural cross-section within the existing 80-foot right of way. The at-grade railroad crossing would be fully replaced as part of the project.

Both a three-lane rural and three-lane urban standard could be accommodated within the existing 80-foot right of way.

Concept RS-8 Environmental and Land Use Assessment

Concept RS-8 would widen Avenue G along its current centerline alignment within the existing right of way. Depending on the cross-section selected, the roadway would be 14 to 36 feet wider than the existing cross-section. This area is surrounded by industrial uses that would experience minimal adverse effects from the wider roadway.

The area along Avenue G is disturbed by existing development. No natural resources are mapped within the right of way illustrated for the concept.

Concept RS-8 Concepts Cost Opinions

Cost opinions were developed for each option using present day dollars and are consistent with standard estimating methods. Both cost opinions assumed that the existing roadway would only need an overlay and would not require reconstruction. Both cost opinions include fully replacing the at-grade railroad crossing as part of the project. The estimates for this concept with different cross-sections are:

- Concept RS-8 Option A – Avenue G Widening – 3-Lane Rural: $2.6 million
- Concept RS-8 Option B – Avenue G Widening – 3-Lane Urban: $5.0 million

6.6. Intersection Improvements

Twelve potential intersection improvements were identified to improve traffic flow, provide additional capacity, or address safety concerns. A brief summary of the projects is presented in Table 6-4.

Table 6-4. Summary of OR 140 Concepts – Intersection Improvements

ID	Location	General Description	Milepoints	Reason
Improvement Concepts with Tier 1 Improvements from the 2034 RTP				
I-1	Blackwell Road & Kirtland Road	Install traffic signal when warranted	-7.02	Capacity
I-2	Kirtland Road & High Banks Road	Add left-turn lanes on Kirtland Road	-5.37	Safety
I-3	Kirtland Road & West Antelope Road	Add westbound left-turn lane on Kirtland Road	-3.74	Safety and Future Transit Service
I-4	Avenue G & Agate Road	Realign intersection to give priority to OR 140 traffic flow	-1.16	Priority for highway movements
I-5	Avenue G & Agate Road	Channelize eastbound right turn and install traffic signal	-1.16	Improved flow for highway movements and capacity
I-6	Agate Road & Leigh Way	Realign intersection to give priority to OR 140 traffic flow	0.20	Improved flow for highway movements
I-7	Agate Road & Leigh Way	Channelize westbound right turn and modify traffic control	0.20	Improved flow for highway movements
I-8	OR 140 & Lakeview Drive	Add left-turn lanes on OR 140	1.03	Safety
I-9	OR 140 & Riley Road	Add left-turn lanes on OR 140	3.59	Safety
I-10	OR 140 & Meridan Road	Add left-turn lanes on OR 140	5.03	Safety
I-11	OR 140 & Brownsboro-Meridian Road	Add left-turn lanes on OR 140	7.41	Safety
I-12	OR 140 & Brownsboro-Eagle Point Road	Add left-turn lanes on OR 140	7.98	Safety

6.6.1. Concept I-1 – Blackwell Road & Kirtland Road Traffic Signal

The Blackwell Road/Kirtland Road intersection is currently STOP-controlled on the eastbound (Blackwell Road) approach with free-flowing movements on the northbound (Blackwell Road)

and southbound (Kirtland Road) approaches. Traffic operations analysis indicates that the eastbound left-turn movement currently experiences some congestion during peak conditions. The extent of that congestion depends on how drivers execute the left-turn movement. Some drivers turn left directly into the northbound travel lane while others may be using the center median refuge to execute a "two-stage" left turn. A two-stage turn is made when the eastbound driver at the STOP sign seeks a gap in the southbound traffic and turns left into the median, waits for a gap in the northbound traffic , then pulls into the northbound travel lane. For clarity, Figure 6-13 illustrates this movement.

If drivers do not take advantage of the center median refuge, the existing v/c ratio for the eastbound approach is estimated at 0.77; however, if the two-stage left turn is included in the calculation, the v/c ratio could be as low as 0.40. For the 2034 future condition, the v/c ratio is estimated at 1.12 with no median usage, and 0.45 with the two-stage left-turn movement. A survey of driver behavior at this location has not been conducted, so the number of left turns that are executed in the two-stage method is not available.

Not all drivers who could take advantage of the two-stage left-turn may choose to do so because the median is not a typical two-way, center left-turn lane but rather is an area created to accommodate a raised median between travel lanes at the railroad crossing. The median remains wide, although not raised, between the railroad crossing and the intersection. The striping is not typical of a two-way, center left-turn lane either where the outside line are solid and the inside lines are dashed. Although the median is not cross-hatched, both lines on either side of the lane are solid stripes, which many drivers may interpret as a prohibition. The storage area between the end of the raised median at the railroad tracks and Blackwell Road is approximately 250 feet.

Concept I-1 would install a traffic signal at the Blackwell Road/Kirtland Road intersection if persistent congestion is present (i.e., drivers do not execute the two-stage left turn) and traffic volumes meet signal warrants.

Concept I-1 Traffic Operations and Safety

Analysis using ODOT's preliminary traffic signal warrants[6] indicates that existing traffic volumes are not sufficient to warrant a traffic signal but 2034 future traffic volumes would meet Case B: Interruption of Continuous Traffic Flow. Traffic operations based on 2034 volumes with a new signal and no geometric changes indicate an overall intersection v/c ratio of 0.62.

Because traffic signals increase the number of vehicles stopping at an intersection, signalized intersections frequently have higher crash rates than unsignalized intersections although the type and severity of the crashes differs. Thus, persistent congestion indicated by longer delays and queuing should be present and traffic volumes should meet signal warrants before a traffic signal is installed.

[6] Section 7.4 Traffic Signal Warrants, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf

Concept I-1 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-1 assumes that no geometric improvements would be needed and that only the traffic signal would be installed with this improvement. All improvements associated with the signal could be installed within existing right of way.

Consideration should be given to restriping the median lane to indicate availability for use in making the two-stage left-turn movement; however, ODOT striping policy must be followed.

Concept I-1 Environmental and Land Use Assessment

One access point serving Knife River Materials to the north and the MJ Market to the south is located approximately 200 feet west of the Blackwell Road/Kirtland Road intersection. If persistent congestion is present at the STOP sign, access to these driveways may be affected. Installation of a traffic signal in response to long delays on Blackwell Road could also result in some queues that would extend back to these driveways.

No environmental resource impacts are associated with this improvement.

Concept I-1 Concepts Cost Opinions

A general cost assumption $0.5 million was assumed for traffic signals.

6.6.2. Concept I-2 – Kirtland Road & High Banks Road Left-Turn Lanes

The Kirtland Road/High Banks Road intersection is currently STOP-controlled on the northbound/southbound (High Banks Road) approaches with free-flowing movements in the eastbound/westbound directions (OR 140/Kirtland Road). Kirtland Road has no left-turn lanes but both the eastbound and westbound approaches have right-turn tapers to facilitate deceleration and turns. Permitted speed on Kirtland Road is 55 mph.

Concept I-2 would add eastbound and westbound left-turn lanes on Kirtland Road at High Banks Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-14.

Concept I-2 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria[7] indicates that existing traffic volumes are not sufficient to warrant left turn lanes for either the eastbound or westbound approach. Future traffic volume estimates do not indicate that criteria would be met within the planning horizon.

[7] Section 7.2 Turn Lane Criteria, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf. Note: These criteria are also consistent with the criteria in Appendix F of the Highway Design Manual.

One crash was reported at the High Banks Road intersection during the 5-year crash analysis period. The crash was a rear end collision that occurred when a westbound through vehicle crashed into a vehicle stopped to make a left turn onto High Banks Road; no injuries occurred. A separate left-turn lane would reduce the likelihood of this type of collision.

Concept I-2 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-2 would add eastbound and westbound left-turn lanes on Kirtland Road at High Banks Road to provide a refuge for vehicles turning left from the highway to the side street. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-14.

It appears that widening could be accommodated within the existing right of way assuming that the roadway centerline coincides with the right-of-way centerline.

Concept I-2 Environmental and Land Use Assessment

There are several access points on the south side of Kirtland Road that lie within the improvement area and could require minor reconstruction to accommodate the roadway widening.

The southeast quadrant of the Kirtland Road/High Banks Road intersection has a wetlands classification of palustrine, emergent and may contain high quality vernal pools. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. Wetland delineation would need to be conducted for this concept.

Concept I-2 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-2 – Kirtland Road/High Banks Road Left-Turn Lanes: $1.5 million

This cost does not include acquisition of additional right of way or mitigation for wetlands impacts.

6.6.3. Concept I-3 – Kirtland Road & West Antelope Road Left-Turn Lane

The Kirtland Road/West Antelope Road intersection is a “T” intersection currently STOP-controlled on the northbound (West Antelope Road) approach with free-flowing movements in the eastbound/westbound directions (OR 140/Kirtland Road). Kirtland Road has no westbound left-turn lane but does have an eastbound right-turn lane. Permitted speed on Kirtland Road is 55 mph.

Concept I-3 would add a westbound left-turn lane on Kirtland Road at West Antelope Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-15.

Concept I-3 Traffic Operations and Safety

Only seven vehicles making the westbound left-turn movement were counted in a four-hour period which is not sufficient to warrant a left-turn lane. However, the Rogue Valley Transit District (RVTD) is considering expanding service in the White City area and may include a loop that would involve westbound vehicles turning left from Kirtland Road to West Antelope Road.

No crashes were reported at the West Antelope Road intersection during the 5-year crash analysis period.

Concept I-3 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-3 would add a westbound left-turn lane on Kirtland Road at West Antelope Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-15.

It appears that widening could be accommodated within the existing right of way assuming that the roadway centerline coincides with the right-of-way centerline.

Concept I-3 Environmental and Land Use Assessment

There are several access points to the Medford City Water Reclamation facility on the north side of Kirtland Road. These access points lie within the improvement area and could require minor reconstruction to accommodate the roadway widening.

No environmental resource impacts are associated with this improvement.

Concept I-3 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-3 – Kirtland Road/West Antelope Road Left-Turn Lane: $1.2 million

This cost does not include acquisition of additional right of way.

6.6.4. Concept I-4 – Avenue G & Agate Road – Intersection Realignment

OR 140 makes a 90 degree turn at the four-way, STOP-controlled intersection of Avenue G and Agate Road. Eastbound traffic on OR 140 approaches the intersection on Avenue G and turns right onto southbound Agate Road to continue. Westbound traffic on OR 140 approaches the intersection traveling northbound on Agate Road and turns left onto westbound Avenue G to continue.

Concept I-4 would realign the intersection of Avenue G and Agate Road to give priority to the through movements on OR 140, as illustrated in Figure 6-16. This realignment would create two “T” intersections between Avenue G and Agate Road. OR 140 would be realigned to create a smooth curve that allows through movement between the west leg of Avenue G and the

south leg of Agate Road. The east leg of Avenue G would approach the realigned OR 140 roadway at a right angle with STOP control. The second intersection would be formed by the north leg of Agate Road, which would stop at the east leg of Avenue G. This second intersection would be realigned slighted from its current location.

While this improvement addresses improved flow for highway movements and intersection movement capacity constraints with the current alignment of OR 140, this alignment may change with the full build out of the OR 62 project. Full build out of OR 62 will result in realignment of the OR 140 route (north on OR 62, west on Avenue G) and will change the direction of flow through this intersection as shown in Concept RS-5 – Avenue G – Widening and Concept RS-8 – Avenue G – OR 140 Reroute Widening. Even without the full build out of OR 62 there are two other projects that may impact the capacity of this intersection Concept RS-6 – Agate Road – Widening and Concept RS-7 – Avenue G – County Section Widening.

Concept I-4 Traffic Operations and Safety

As shown in Figure 6-1 (Intersection 11), traffic volumes at this Avenue G/Agate Road intersection are fairly even between all four approaches. The major traffic movements are east-west on Avenue G and north-south on Agate Road. Turning volumes are considerably lower, even for the turn movements that comprise OR 140. Although the volumes on the highway are expected to grow, the east-west and north-south through movements are expected to remain dominant. (See Figure 6-2, Intersection 11.)

These patterns are supported by the origin-destination patterns from the travel demand forecasting model. The model trends show that the majority of the traffic on this section of OR 140 (Avenue G) is coming from areas to the north (i.e., Eagle Point and OR 62) and within White City (i.e., White City east of OR 62). Long distance through traffic on OR 140 would comprise only a small portion of the overall traffic volume in the area.

With the intersection realignment in Concept I-4, less that 10 percent of the traffic would be traveling through on OR 140 and more than 90 percent of the traffic at the intersection would be turning. Preliminary analysis of this intersection configuration indicates that the eastbound left-turn movement would have a forecast v/c ratio greater than 1.0.

The realignment may also have safety concerns because the two intersections would be less than 200 feet apart with some queuing between.

Concept I-4 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-4 would realign the intersection of Avenue G and Agate Road to give priority to the through movements on OR 140, as illustrated in Figure 6-16.

The realignment would require additional right of way in the southwest quadrant of the intersection.

Concept I-4 Environmental and Land Use Assessment

The property in the southwest quadrant of the intersection would be impacted by the realignment of the roadway; however, the building would not be affected.

Several driveways would be impacted by the realignment and could require reconstruction, rerouting to other streets, and/or closure.

No environmental resource impacts are associated with this improvement.

Concept I-4 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-4 – Avenue G/Agate Road Realignment: $1.3 million

This cost does not include acquisition of additional right of way or potential realignment of existing driveways.

6.6.5. Concept I-5 – Avenue G & Agate Road – Channelization and Traffic Signal

As an alternative to Concept I-4, Concept I-5 would channelize the eastbound right-turn movement to facilitate the turn on OR 140. As illustrated in Figure 6-17, this improvement would include an eastbound right-turn lane on Avenue G, a channelizing island for the right-turn movement, and a southbound acceleration and merge lane on Agate Road. Traffic would be fully merged before the railroad crossing on Agate Road.

Analysis of the four-way STOP control at this intersection indicates that the eastbound approach of Avenue G (OR 140) would have a v/c ratio greater than 1.0 for the 2034 future baseline condition and LOS F conditions. Concept I-5 would install a traffic signal at the Avenue G/Agate Road intersection if persistent congestion is present and traffic volumes meet signal warrants.

While this improvement addresses improved flow for highway movements and intersection movement capacity constraints with the current alignment of OR 140, this alignment may change with the full build out of the OR 62 project. Full build out of OR 62 will result in realignment of the OR 140 route (north on OR 62, west on Avenue G) and will change the direction of flow through this intersection as shown in Concept RS-5 – Avenue G – Widening and Concept RS-8 – Avenue G – OR 140 Reroute Widening. Even without the full build out of OR 62 there are two other projects that may impact the capacity of this intersection Concept RS-6 – Agate Road – Widening and Concept RS-7 – Avenue G – County Section Widening.

Concept I-5 Traffic Operations and Safety

As shown in Figure 6-17, Concept I-5 would increase the turning radius for eastbound traffic traveling on OR 140 from Avenue G to Agate Road. The increased turning radius would allow

both passenger vehicles and trucks to make the right turn at higher speeds that the existing corner. By providing an acceleration and merge lane, the right-turning traffic would not need to stop at Agate Road.

With the channelization and merge lane but no change in traffic control (i.e., four-way STOP remains), the v/c ratio for the eastbound right turn would decrease from more than 1.0 to 0.93, which would exceed the HDM mobility standard of 0.80 identified for statewide highways. Overall, the intersection would operate at LOS E.

With the channelization/merge lane improvement and a traffic signal, the overall v/c ratio for the intersection would decrease to 0.67 and an overall intersection LOS B.

Analysis using ODOT's preliminary traffic signal warrants[8] indicates that existing traffic volumes are not sufficient to warrant a traffic signal but 2034 future traffic volumes would meet Case A: Minimum Vehicular Volume. Persistent congestion indicated by longer delays and queuing should be present and traffic volumes should meet signal warrants before a traffic signal is installed.

Concept I-5 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-5 would channelize the eastbound right-turn movement to facilitate the turn on OR 140. As illustrated in Figure 6-17, this improvement would include an eastbound right-turn lane on Avenue G, a channelizing island for the right-turn movement, and a southbound acceleration and merge lane on Agate Road. The cross-section used in this illustration is a rural facility with a 14-foot travel lane and 8-foot shoulder.

The realignment would require additional right of way in the southwest quadrant of the intersection. All improvements associated with the signal could be installed within existing right of way.

Concept I-5 Environmental and Land Use Assessment

The property in the southwest quadrant of the intersection would be impacted by the realignment of the roadway; however, the building would not be affected. The driveway to this property on the west side of Agate Road would be located within the acceleration lane.

No environmental resource impacts are associated with this improvement.

Concept I-5 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

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[8] Section 7.4 Traffic Signal Warrants, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf

- Concept I-5 – Avenue G/Agate Road Channelization: $0.6 million (rural cross-section)
- Concept I-5 – Avenue G/Agate Road Traffic Signal: $0.5 million

The cost opinion for this improvement was prepared for a 2-lane rural cross-section with shoulders instead of curb and sidewalk. If an urban standard were to be used, the cost could double.

This cost does not include acquisition of additional right of way.

6.6.6. Concept I-6 – Agate Road & Leigh Way – Intersection Realignment

OR 140 makes a 90 degree turn at the intersection of Agate Road and Leigh Way. Eastbound traffic on OR 140 approaches the intersection traveling southbound on Agate Road and turns left onto eastbound Leigh Way to continue. Westbound traffic on OR 140 approaches the intersection on Leigh Way and turns right onto northbound Agate Road to continue.

Concept I-6 would realign the intersection of Agate Road and Leigh Way to give priority to the through movements on OR 140, as illustrated in Figure 6-18. OR 140 would be realigned to create a smooth curve that allows through movement between the north leg of Agate Road and the east leg of Leigh Way. The south leg of Agate Road would approach the realigned OR 140 roadway at a right angle with STOP control.

Concept I-6 Traffic Operations and Safety

As shown in Figure 6-1 (Intersection 13), traffic volumes at this Agate Road/Leigh Way intersection currently favor the north-south movement. However, with the improvements on OR 62, the volumes are expected to shift and future volumes at the intersection are expected to favor the movement along OR 140. (See Figure 6-2, Intersection 13.) The realigned intersection would facilitate freight movement within the OR 140 corridor.

Preliminary analysis of this intersection configuration indicates that the northbound stopped approach on Agate Road would have a 2034 forecast v/c ratio of 0.19 with LOS B operations.

Coordination between implementation of this concept and the OR 62 Phase 1 and 2 (JTA) improvements should be considered. Under current conditions, the north-south movement has the heaviest traffic volumes. The intersection realignment of Concept I-6 would stop more vehicles than the current configuration, which could potentially result in more rear end collisions. However, once the OR 62 improvements are finished, traffic patterns would shift and the realignment would then serve the highest volume movements.

Concept I-6 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-6 would realign the intersection of Agate Road and Leigh Way to give priority to the through movements on OR 140, as illustrated in Figure 6-18. The cross-section used in this illustration is a 3-lane urban facility with a design speed of 45 mph.

The realignment would require additional right of way in the northeast quadrant of the intersection. Some power lines may lie within the required right of way.

Concept I-6 Environmental and Land Use Assessment

The property in the northeast quadrant of the intersection would be impacted by the realignment of the roadway. Some power lines on that property may lie within the required right of way.

No environmental resource impacts are associated with this improvement.

Concept I-6 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-6 –Agate Road/Leigh Way Realignment: $5.4 million

This cost does not include acquisition of additional right of way or relocation of power lines.

6.6.7. Concept I-7 – Agate Road & Leigh Way – Channelization and Traffic Control

As an alternative to Concept I-6, Concept I-7 would channelize the eastbound right-turn movement to facilitate the turn on OR 140. As illustrated in Figure 6-19, this improvement would include a westbound right-turn lane on Leigh Way and a channelizing island for the right-turn movement. Traffic control would be modified to stop the northbound approach on Agate Road. The westbound left turn on Leigh Way would also be stopped but the right turn would flow freely. The southbound approach on Agate Road would also flow freely.

Concept I-7 Traffic Operations and Safety

As shown in Figure 6-19, Concept I-7 would increase the turning radius for westbound traffic traveling on OR 140 from Leigh Way to Agate Road. The increased turning radius would allow both passenger vehicles and trucks to make the right turn at higher speeds that the existing corner. By modifying the traffic control to stop northbound traffic, the right-turning traffic from Leigh Way would not need to stop at Agate Road.

Analysis of the current STOP control at this intersection indicates that the westbound approach of Leigh Way (OR 140) would have a 2034 future v/c ratio of 0.36 and LOS C conditions. The modified traffic control cannot be analyzed but volumes are expected to remain at a level where mobility standards could be met.

Because the traffic control proposed in this concept is non-standard, some drivers may be confused by which approaches are expected to stop and who has the right of travel. This could lead to turning or angle conflicts.

Concept I-7 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-7 would channelize the westbound right-turn movement to facilitate the turn on OR 140. As illustrated in Figure 6-19, this improvement would include a westbound right-turn lane on Leigh Way and a channelizing island for the right-turn movement. Traffic control would be modified to stop the northbound approach on Agate Road. The westbound left turn on Leigh Way would also be stopped but the right turn would flow freely. The southbound approach on Agate Road would also flow freely. The improvements associated with the right turn lane would provide a 14-foot travel lane and 8-foot shoulder.

The realignment would require additional right of way in the northeast quadrant of the intersection.

Concept I-7 Environmental and Land Use Assessment

The property in the northeast quadrant of the intersection would be impacted by the realignment of the roadway. The power lines on that property would be avoided with this concept.

No environmental resource impacts are associated with this improvement.

Concept I-7 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-7 – Avenue G/Agate Road Channelization: $0.5 million

The cost opinion for this improvement was prepared for a cross-section with shoulders instead of curb and sidewalk. If an urban standard were to be used, the cost could double.

This cost does not include acquisition of additional right of way.

6.6.8. Concept I-8 – OR 140 & Lakeview Drive Left-Turn Lanes

The OR 140/Lakeview Drive intersection is currently STOP-controlled on the northbound/ southbound (Lakeview Drive) approaches with free-flowing movements in the eastbound/westbound directions (OR 140). OR 140 currently has no left-turn lanes but both the eastbound and westbound approaches have right-turn tapers to facilitate deceleration and turns. Posted speed on OR 140 is 55 mph.

Concept I-8 would add eastbound and westbound left-turn lanes on OR 140 at Lakeview Drive to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-20.

Concept I-8 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria indicates that existing traffic volumes are sufficient to warrant left turn lanes for the eastbound approach.

Two crashes were reported at the Lakeview Drive intersection during the 5-year crash analysis period. One crash involved a motorhome turning left from OR 140 onto Lakeview Drive that cut the corner and hit the front end of a vehicle stopped on Lakeview Drive. This type of collision would not be avoided by the addition of left-turn lanes. The second crash involved a turning collision between two eastbound vehicles, one turning left and one traveling straight. The error code indicated improper passing. This type of collision could be avoided by the addition of left-turn lanes.

Concept I-8 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-8 would add eastbound and westbound left-turn lanes on OR 140 at Lakeview Drive to provide a refuge for vehicles turning left from the highway to the side street. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-20.

It appears that widening could be accommodated within the existing right of way.

Concept I-8 Environmental and Land Use Assessment

Although areas around this concept have been disturbed by development, natural resource mapping indicates that there may be some wetlands classified as palustrine, emergent that could contain high quality vernal pools. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. Wetland delineation would need to be conducted for this concept.

Concept I-8 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-8 – OR 140/Lakeview Drive Left-Turn Lanes: $1.2 million

This cost does not include acquisition of additional right of way or mitigation for wetlands impacts.

6.6.9. Concept I-9 – OR 140 & Riley Road Left-Turn Lanes

The OR 140/Riley Road intersection is currently STOP-controlled on the northbound/ southbound (Riley Road/East Antelope Road) approaches with free-flowing movements in the eastbound/westbound directions (OR 140). OR 140 currently has no left-turn lanes but both the eastbound and westbound approaches have right-turn tapers to facilitate deceleration and turns. Posted speed on OR 140 is 55 mph.

Concept I-9 would add eastbound and westbound left-turn lanes on OR 140 at Riley Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-21.

Concept I-9 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria indicates that existing traffic volumes are sufficient to warrant left turn lanes for the eastbound approach.

Six crashes were reported at the Riley Road intersection during the 5-year crash analysis period. Two crashes were rear end collisions and at least one involved a vehicle stopped in the travel lane to make a left turn. A separate left-turn lane would reduce the likelihood of this type of collision. The other crashes were turning or angle crashes which may not be avoided by the addition of the left-turn lanes.

Concept I-9 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-9 would add eastbound and westbound left-turn lanes on OR 140 at Riley Road to provide a refuge for vehicles turning left from the highway to the side street. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-21.

It appears that widening could be accommodated within the existing right of way.

Concept I-9 Environmental and Land Use Assessment

Although some areas around this concept have been disturbed by development, natural resource mapping indicates that there may be some wetlands classified as palustrine, emergent that could contain high quality vernal pools. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. Wetland delineation would need to be conducted for this concept.

Concept I-9 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-9 – OR 140/Riley Road Left-Turn Lanes: $1.2 million

This cost does not include acquisition of additional right of way or mitigation for wetlands impacts.

6.6.10. Concept I-10 – OR 140 & Meridian Road Left-Turn Lanes

The OR 140/Meridian Road intersection is currently STOP-controlled on the northbound/ southbound (Meridian Road) approaches with free-flowing movements in the eastbound/westbound directions (OR 140). OR 140 currently has no left-turn lanes. The

westbound approach has a right-turn taper to facilitate deceleration and turns while the eastbound approach has a 10-foot shoulder. Posted speed on OR 140 is 55 mph.

Concept I-10 would add eastbound and westbound left-turn lanes on OR 140 at Meridian Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-22.

Concept I-10 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria indicates that existing traffic volumes are not sufficient to warrant left turn lanes for either the eastbound or westbound approach. Future traffic volume estimates do not indicate that criteria would be met within the planning horizon.

Five crashes were reported at the Meridian Road intersection during the 5-year crash analysis period. Two crashes were rear end collisions that involved a vehicle stopped in the travel lane to make a left turn. A separate left-turn lane would reduce the likelihood of this type of collision. Another crash involved a left-turning vehicle and improper overtaking. A separate left-turn lane would also reduce the likelihood of this type of collision. The other crashes were fixed object or angle crashes which may not be avoided by the addition of the left-turn lanes.

Concept I-10 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-10 would add eastbound and westbound left-turn lanes on OR 140 at Meridian Road to provide a refuge for vehicles turning left from the highway to the side street. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-22.

It appears that widening could be accommodated within the existing right of way but there is a bridge over Antelope Creek located approximately 100 feet west of Meridian Road. This structure has a paved width of 44 feet. The structure could accommodate three travel lanes as shown in the figure but shoulders would be limited to less than three feet crossing the structure.

Concept I-10 Environmental and Land Use Assessment

The improvement would cross Antelope Creek west of Meridian Road. Antelope Creek is identified as existing habitat for Coho Salmon. The cost opinion assumes that this structure would not be modified from its current configuration. However, impacts associated with work in the vicinity of the creek should be avoided. Additional resource delineation would need to be conducted for this concept.

Concept I-10 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-10 – OR 140/Meridian Road Left-Turn Lanes: $1.3 million

This cost does not include bridge widening, acquisition of additional right of way, or mitigation for creek impacts.

6.6.11. Concept I-11 – OR 140 & Brownsboro-Meridian Road Left-Turn Lanes

The OR 140/Brownsboro-Meridian Road intersection is currently STOP-controlled on the Brownsboro-Meridian Road approaches with free-flowing movements in the eastbound/westbound directions (OR 140). OR 140 currently has no left-turn lanes. The westbound approach has a passing lane and turns while the eastbound approach has a 10-foot shoulder. Posted speed on OR 140 is 55 mph.

Concept I-11 would add eastbound and westbound left-turn lanes on OR 140 at Brownsboro-Meridian Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-23.

Concept I-11 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria indicates that existing traffic volumes are not sufficient to warrant left turn lanes for either the eastbound or westbound approach. Future traffic volume estimates do not indicate that criteria would be met within the planning horizon.

No crashes were reported at the Brownsboro-Meridian Road intersection during the 5-year crash analysis period.

Concept I-11 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-11 would add eastbound and westbound left-turn lanes on OR 140 at Brownsboro-Meridian Road to provide a refuge for vehicles turning left from the highway to the side street. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-23.

It appears that widening could be accommodated within the existing right of way.

Concept I-11 Environmental and Land Use Assessment

No natural resources are mapped in this area. No land uses would be impacted since the concept appears constructable within existing right of way.

Concept I-11 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-11 – OR 140/Brownsboro-Meridian Road Left-Turn Lanes: $1.7 million

This cost does not include acquisition of additional right of way.

6.6.12. Concept I-12 – OR 140 & Brownsboro-Eagle Point Road Left-Turn Lanes

The OR 140/Brownsboro-Eagle Point Road intersection is currently STOP-controlled on the southbound Brownsboro-Eagle Point Road approach with free-flowing movements in the eastbound/westbound directions (OR 140). OR 140 has no eastbound left-turn lane. The westbound approach has a 10-foot shoulder. Posted speed on OR 140 is 55 mph.

Concept I-12 would add an eastbound left-turn lane on OR 140 at Brownsboro-Eagle Point Road to provide a refuge for vehicles turning left from the highway to the side street. This concept is illustrated in Figure 6-24. A westbound left-turn lane is also shown for the access point to the south.

Concept I-12 Traffic Operations and Safety

Preliminary analysis using ODOT's turn lane criteria indicates that existing traffic volumes are not sufficient to warrant left turn lanes. Future traffic volume estimates do not indicate that criteria would be met within the planning horizon.

Two crashes were reported at the Brownsboro-Eagle Point Road intersection during the 5-year crash analysis period. Both of these crashes involved a single-vehicle collision with a fixed object. A left-turn lane would be unlike to mitigate the circumstances of these crashes.

Concept I-12 Basic Roadway Geometries and Right-of-Way Requirements

Concept I-12 would add eastbound and westbound left-turn lanes on OR 140 at Brownsboro-Eagle Point Road to provide a refuge for vehicles turning left from the highway to the side street or driveway. Widening to accommodate the left-turn lanes is assumed to occur equally on both sides of the roadway. This concept is illustrated in Figure 6-24.

It appears that widening could be accommodated within the existing right of way.

Concept I-12 Environmental and Land Use Assessment

Little Butte Creek bridge lies 0.23 miles west of the Brownsboro-Eagle Point Road intersection and is listed as existing habitat for Chinook Salmon. All of the improvements associated with this concept would occur east of the bridge. No natural resources are mapped in this area. No land uses would be impacted since the concept appears constructable within existing right of way.

Concept I-12 Concepts Cost Opinions

Cost opinions were developed for this concept using present day dollars and are consistent with standard estimating methods. The estimate for this concept is:

- Concept I-12 – OR 140/Brownsboro-Eagle Point Road Left-Turn Lanes: $1.3 million

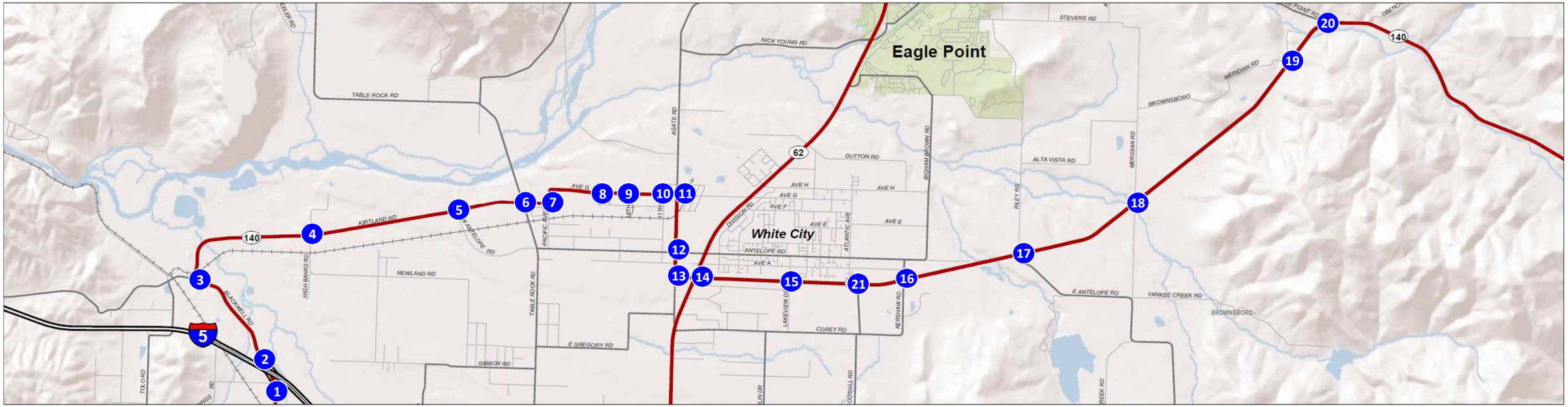
This cost does not include bridge widening or acquisition of additional right of way,.

6.7. Evaluation Matrix

The information presented in this memo will also be summarized in a separate matrix for comparison of alternatives.

Attachments:

Figure 6-1. 2010 Existing Design Hour Volumes
Figure 6-2. 2034 Future Baseline Design Hour Volumes
Figure 6-3. Concept HR-1 – Extension of OR 140 to I-5 Southbound Ramps
Figure 6-4. Concept HR-3 – Rerouting to Crater Lake Highway and Avenue G
Figure 6-5. Concept JSR-1 through JSR-7 – Jackson County Reclassification
Figure 6-6. Concept RS-1 – Blackwell Road Improvements – Widening
Figure 6-7. Concept RS-2 – Blackwell Road Improvements – Widening and Curve Realignment
Figure 6-8. Concept RS-4 – Kirtland Road – Widening
Figure 6-9. Concept RS-5 – Avenue G – Widening
Figure 6-10. Concept RS-6 – Agate Road – Widening
Figure 6-11. Concept RS-7 – Avenue G – County Section Widening
Figure 6-12. Concept RS-8 – Avenue G – OR 140 Reroute
Figure 6-13. Blackwell Road & Kirtland Road Intersection Configuration
Figure 6-14. Concept I-2 – Kirtland Road & High Banks Road Intersection Improvements
Figure 6-15. Concept I-3 – Kirtland Road & West Antelope Road Intersection Improvements
Figure 6-16. Concept I-4 – Avenue G & Agate Road Intersection Realignment
Figure 6-17. Concept I-5 – Avenue G & Agate Road Channelization
Figure 6-18. Concept I-6 – Agate Road & Leigh Way Intersection Realignment
Figure 6-19. Concept I-7 – Agate Road & Leigh Way Channelization and Traffic Control
Figure 6-20. Concept I-8 –OR 140 & Lakeview Drive Intersection Improvements
Figure 6-21. Concept I-9 – OR 140 & Riley Road Intersection Improvements
Figure 6-22. Concept I-10 – OR 140 & Meridian Road Intersection Realignment
Figure 6-23. Concept I-11 – OR 140 & Brownsboro-Meridian Intersection Improvements
Figure 6-24. Concept I-12 – OR 140 & Brownsboro-Eagle Point Intersection Improvements



1 — OR 99 @ SB Ramps

↰ 50	← 175	↱ 125
↰ 60	← 50	↱ 50
↰ 30	← 520	↱ 10
↱ 70	← 5	↰ 245

2 — OR 99 @ NB Ramps

↰ 110	← 300	↱ 145
↰ 335	← 315	↱ 50
↱ 5	← 5	

3 — Kirtland Rd @ Blackwell Rd (OR 140)

↰ 180	← 225	
↰ 100	← 230	↱ 255
↱ 165		

4 — High Banks Rd @ Kirtland Rd (OR 140)

↰ 5	← 0	↱ 5
↰ 5	← 20	↱ 0
↰ 250	← 20	↱ 10
↱ 15	← 280	↰ 5

5 — Antelope Rd @ Kirtland Rd (OR 140)

	← 195	↰ 0
↰ 200	← 85	↱ 5
↱ 60		

6 — Table Rock Rd @ Kirtland Rd (OR 140)

↰ 15	← 165	↱ 15
↰ 40	← 45	↱ 35
↰ 125	← 255	↱ 35
↱ 35	← 130	↰ 30

7 — Pacific Ave @ Kirtland Rd (OR 140)

↰ 155	← 60	
↰ 155	← 35	↱ 55
↱ 15		

8 — 5th St @ Avenue G (OR 140)

	← 190	↰ 5
↰ 195	← 20	↱ 10
↱ 10		

9 — 8th St @ Avenue G (OR 140)

	← 170	↰ 5
↰ 195	← 20	↱ 25
↱ 5		

10 — 11th St @ Avenue G (OR 140)

↰ 5	← 2	↱ 15
↰ 5	← 5	↱ 2
↱ 205		
↱ 5		
↱ 0		
↱ 160		
↱ 10		

11 — Agate Rd (OR 140) @ Avenue G (OR 140)

↰ 30	← 80	↱ 10
↰ 70	← 10	↱ 30
↰ 150	← 160	
↱ 20		
↱ 35		
↱ 125		
↱ 35		

12 — Agate Rd (OR 140) @ Antelope Rd

↰ 50	← 60	↱ 25
↰ 75	← 110	↱ 20
↰ 400	← 100	
↱ 155		
↱ 25		
↱ 235		
↱ 10		

13 — Agate Rd (OR 140) @ Leigh Way (OR 140)

← 150	↱ 90	
↱ 75		
↱ 30		
↑ 150	↱ 40	

14 — OR 62 @ OR 140

↰ 45	← 1100	↱ 70
↰ 45	← 130	↱ 55
↰ 100	← 1225	↱ 60
↰ 115	← 200	↱ 175

15 — Lakeview Dr @ OR 140

↰ 45	← 2	↱ 15
↰ 90	← 2	↱ 10
↰ 250	← 2	↱ 225
↱ 5		↱ 0

16 — Kershaw Rd @ OR 140

↰ 25	← 85	↱ 25
↰ 60	← 15	↱ 10
↰ 200	← 115	↱ 190
↱ 10		↱ 75
↱ 30		

17 — Riley Rd @ OR 140

↰ 15	← 10	↱ 2
↰ 30	← 35	↱ 165
↰ 170	← 5	↱ 2
↱ 90		

18 — Meridian Rd @ OR 140

↰ 5	← 5	↱ 0
↰ 0	← 0	↱ 5
↰ 5	← 5	↱ 2
↱ 2		

19 — Brownsboro-Meridian Rd @ OR 140

↰ 5	← 0	↱ 2
↰ 5	← 5	↱ 140
↰ 155	← 0	↱ 2
↱ 5		

20 — Brownsboro-Eagle Point Rd @ OR 140

↰ 5	← 15	↱ 15
↰ 10	← 140	
↱ 150		

OR 140 Corridor Plan

Legend

PM Peak Hour Volume

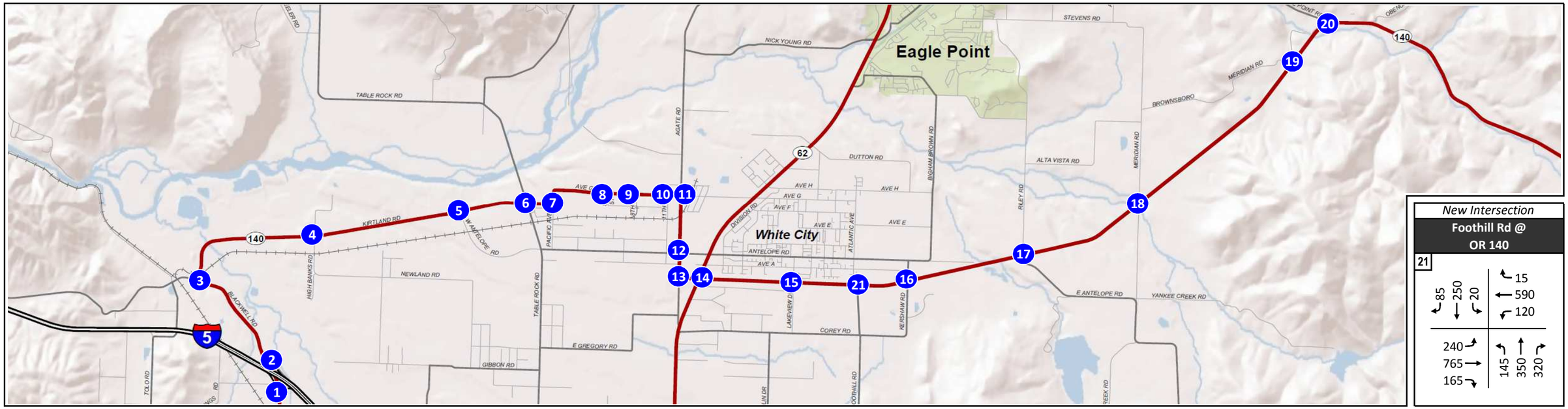
→ Turning Movement

Intersection Number

N

DRAFT Figure 6-1

2010 Existing Design Hour Volumes



New Intersection

Foothill Rd @ OR 140

21

85 ↰ 250 ↓ 20 ↱	15 ↰ 590 ← 120 ↱
240 ↰ 765 → 165 ↱	145 ↰ 350 ↑ 320 ↱

OR 99 @ SB Ramps

1

50 ↰ 190 ↓ 150 ↱	125 ↰ 5 ← 345 ↱
70 ↰ 50 → 45 ↱	30 ↰ 705 ↑ 10 ↱

OR 99 @ NB Ramps

2

260 ↰ 350 ↓	185 ↰ 5 ← 35 ↱
	495 ↰ 405 ↑

Kirtland Rd @ Blackwell Rd (OR 140)

3

200 ↰ 365 ↓	
105 ↰ 210 ↱	270 ↰ 355 ↑

High Banks Rd @ Kirtland Rd (OR 140)

4

5 ↰ 0 ↓ 5 ↱	5 ↰ 445 ← 10 ↱
5 ↰ 365 → 35 ↱	20 ↰ 0 ↑ 10 ↱

Antelope Rd @ Kirtland Rd (OR 140)

5

	355 ← 0 ↱
280 → 105 ↱	100 ↰ 10 ↱

Table Rock Rd @ Kirtland Rd (OR 140)

6

20 ↰ 170 ↓ 25 ↱	40 ↰ 250 ← 45 ↱
30 ↰ 230 → 35 ↱	85 ↰ 285 ↑ 90 ↱

Pacific Ave @ Kirtland Rd (OR 140)

7

	295 ← 55 ↱
330 → 15 ↱	40 ↰ 55 ↱

5th St @ Avenue G (OR 140)

8

	325 ← 5 ↱
380 → 10 ↱	25 ↰ 15 ↱

8th St @ Avenue G (OR 140)

9

	305 ← 5 ↱
395 → 5 ↱	25 ↰ 40 ↱

11th St @ Avenue G (OR 140)

10

5 ↰ 0 ↓ 15 ↱	0 300 10
5 430 5	5 ↰ 0 ↑ 30 ↱

Agate Rd (OR 140) @ Avenue G (OR 140)

11

50 ↰ 155 ↓ 20 ↱	60 ↰ 230 ← 80 ↱
105 ↰ 325 → 45 ↱	30 ↰ 200 ↑ 50 ↱

Agate Rd (OR 140) @ Antelope Rd

12

85 ↰ 130 ↓ 65 ↱	105 ↰ 430 ← 25 ↱
65 ↰ 560 → 175 ↱	90 ↰ 110 ↑ 25 ↱

Agate Rd (OR 140) @ Leigh Way (OR 140)

13

155 ↓ 180 ↱	175 ↰ 130 ↱
	50 ↑ 65 ↱

OR 62 @ OR 140

14

95 ↰ 1350 ↓ 95 ↱	85 ↰ 130 ← 250 ↱
70 ↰ 240 → 205 ↱	220 ↰ 1515 ↑ 335 ↱

Lakeview Dr @ OR 140

15

50 ↰ 0 ↓ 25 ↱	15 ↰ 400 ← 2 ↱
100 ↰ 550 → 5 ↱	2 ↰ 2 ↑ 5 ↱

Kershaw Rd @ OR 140

16

80 ↰ 60 ↓ 35 ↱	15 ↰ 300 ← 10 ↱
205 ↰ 350 → 10 ↱	10 ↰ 85 ↑ 30 ↱

Riley Rd @ OR 140

17

15 ↰ 10 ↓ 5 ↱	5 ↰ 260 ← 5 ↱
40 ↰ 275 → 100 ↱	35 ↰ 10 ↑ 5 ↱

Meridian Rd @ OR 140

18

5 ↰ 5 ↓ 0 ↱	5 ↰ 5 ← 0 ↱
0 ↰ 5 → 5 ↱	0 ↰ 5 ↑ 5 ↱

Brownsboro-Meridian Rd @ OR 140

19

5 ↰ 0 ↓ 0 ↱	5 ↰ 250 ← 0 ↱
5 ↰ 265 → 5 ↱	5 ↰ 0 ↑ 0 ↱

Brownsboro-Eagle Point Rd @ OR 140

20

10 ↰ 25 ↱	20 ↰ 245 ↱
15 ↰ 250 →	

OR 140 Corridor Plan

Legend

PM Peak Hour Volume

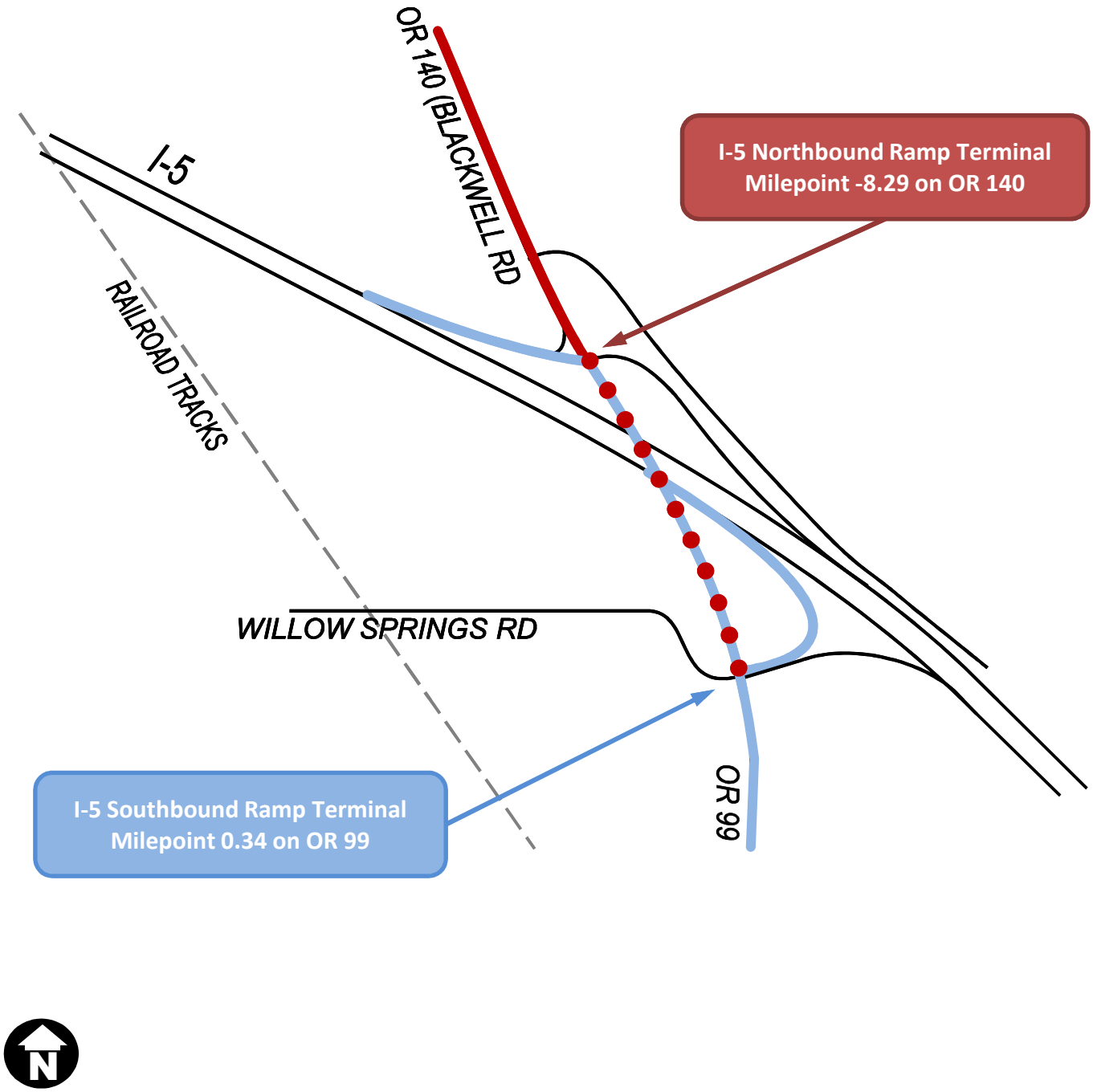
→ Turning Movement

Intersection Number

N

DRAFT Figure 6-2

2034 Future Baseline Design Hour Volumes



OR 140 Corridor Plan

Legend

- Current OR 140 designation (statewide classification)
- Potential OR 140 designation (statewide classification)
- Current OR 99 designation (district classification)

DRAFT Figure 6-3

Concept HR-1
Extension of OR 140 to
I-5 Southbound Ramps

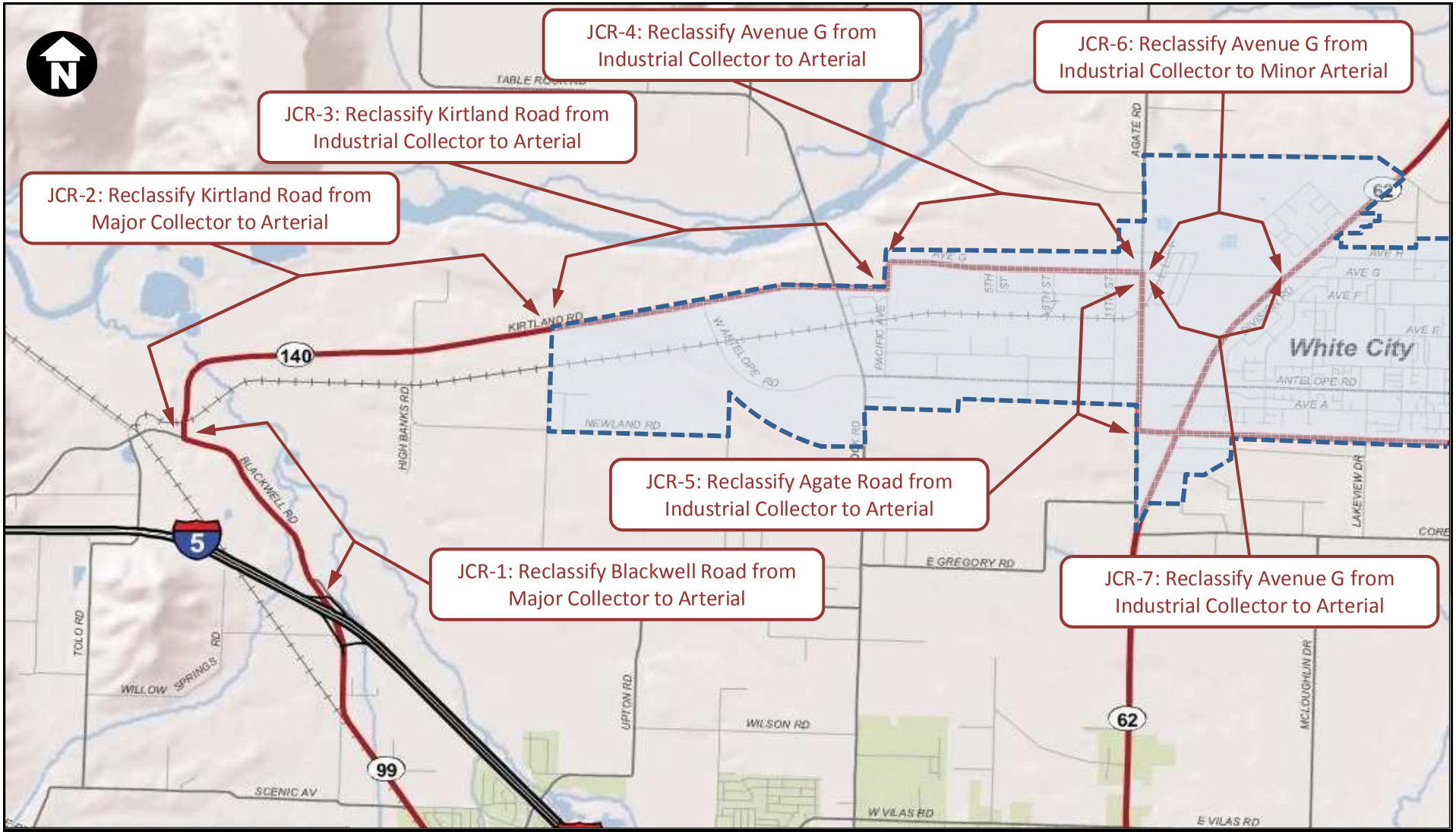
OR 140 Corridor Plan

Legend

- Current OR 140 Alignment
- Proposed OR 140 Realignment
- OR 62 Full Corridor Improvement

DRAFT Figure 6-4

Concept HR-3
Rerouting to Crater Lake Highway and Avenue G



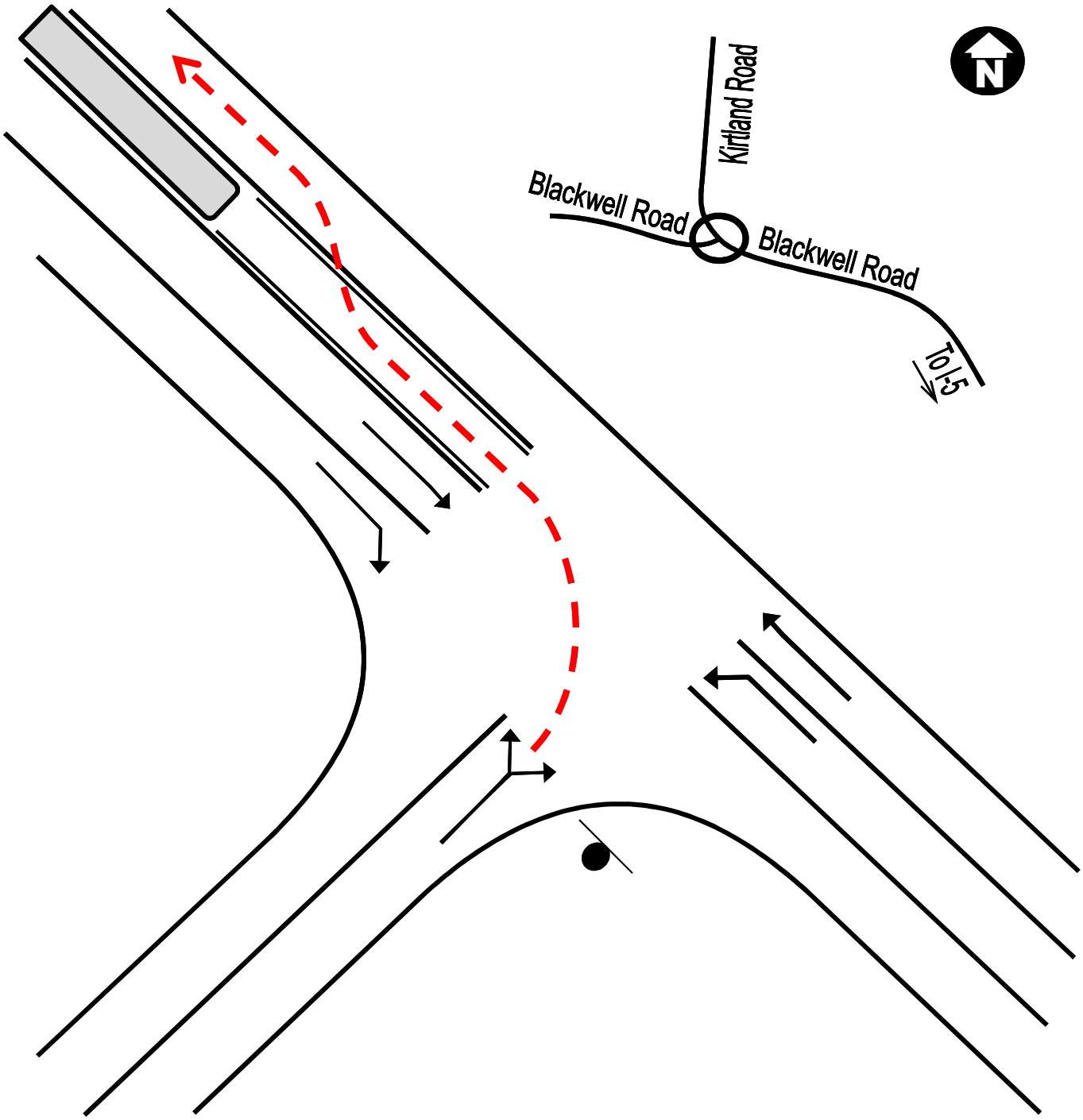
OR 140 Corridor Plan

Legend

White City Urban Unincorporated Community Boundary

DRAFT Figure 6-5

Concepts JCR-1 through JCR-7
Jackson County Reclassification



OR 140 Corridor Plan

Legend

- STOP sign
- Turn Movement
- Two-stage Left Turn Pathway

DRAFT Figure 6-13

Blackwell Road & Kirtland Road Intersection Configuration

OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-14

Concept I-2
Kirtland Road & HighBanks Road
Intersection Improvements

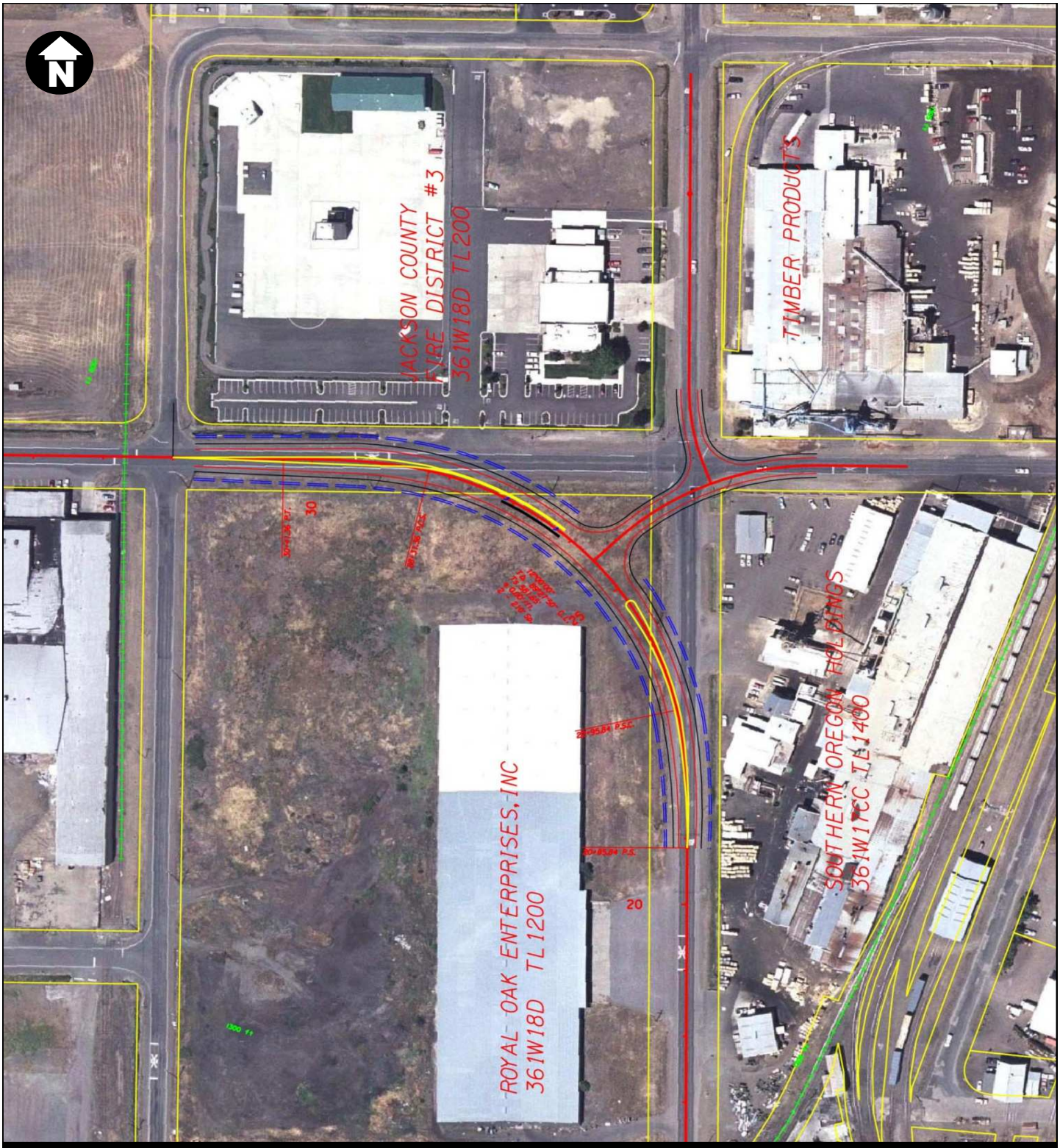
OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-15

Concept I-3
Kirtland Road & West Antelope Road
Intersection Improvements



OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Centerline
- Left-Turn Lane Striping

DRAFT Figure 6-16

Concept I-4
Avenue G & Agate Road
Intersection Realignment

OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Striping

DRAFT Figure 6-17

Concept I-5
Avenue G & Agate Road
Channelization and Traffic Signal

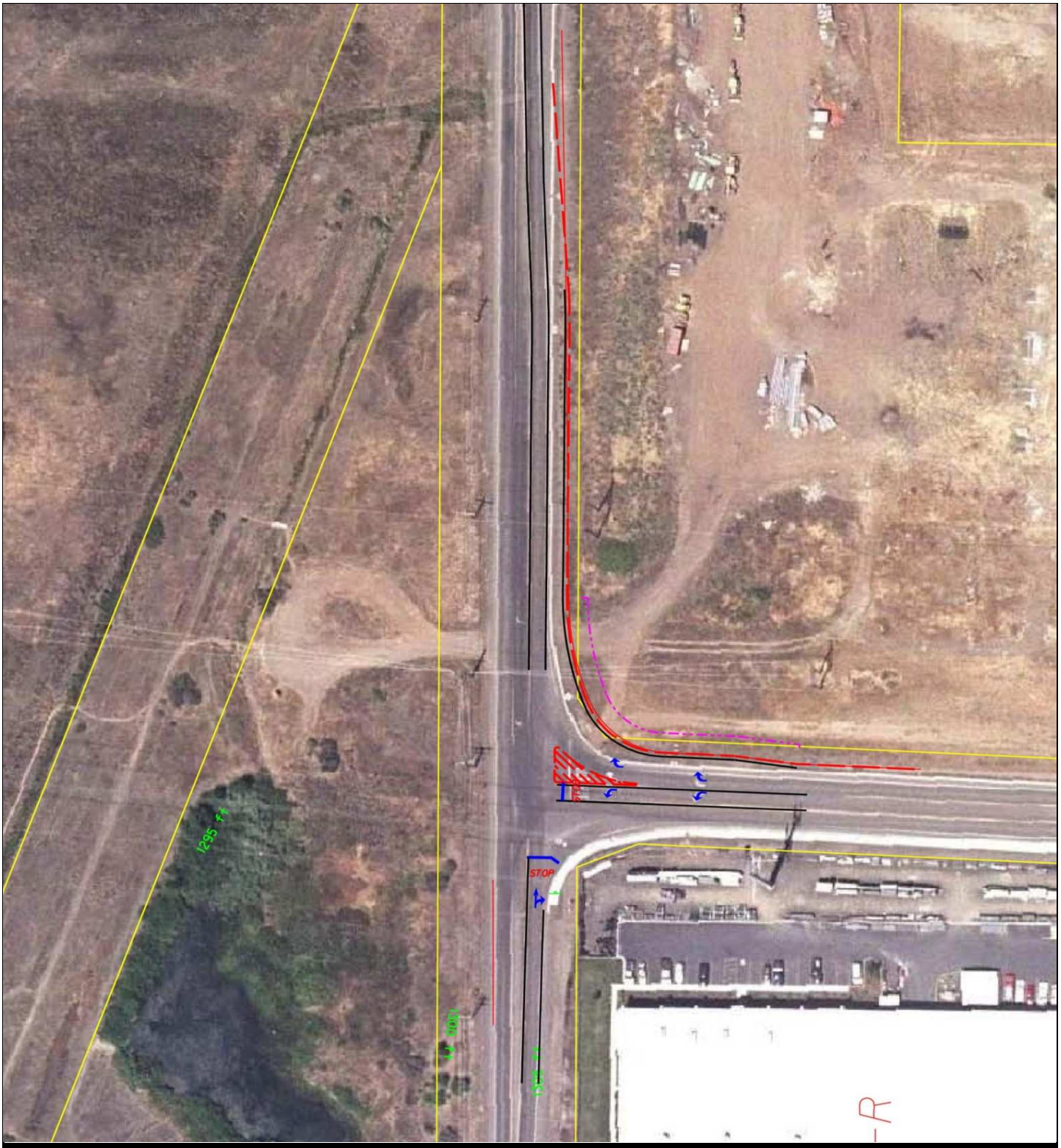
OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement, Sidewalk, Bike Lane
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-18

Concept I-6
Agate Road & Leigh Way
Intersection Realignment



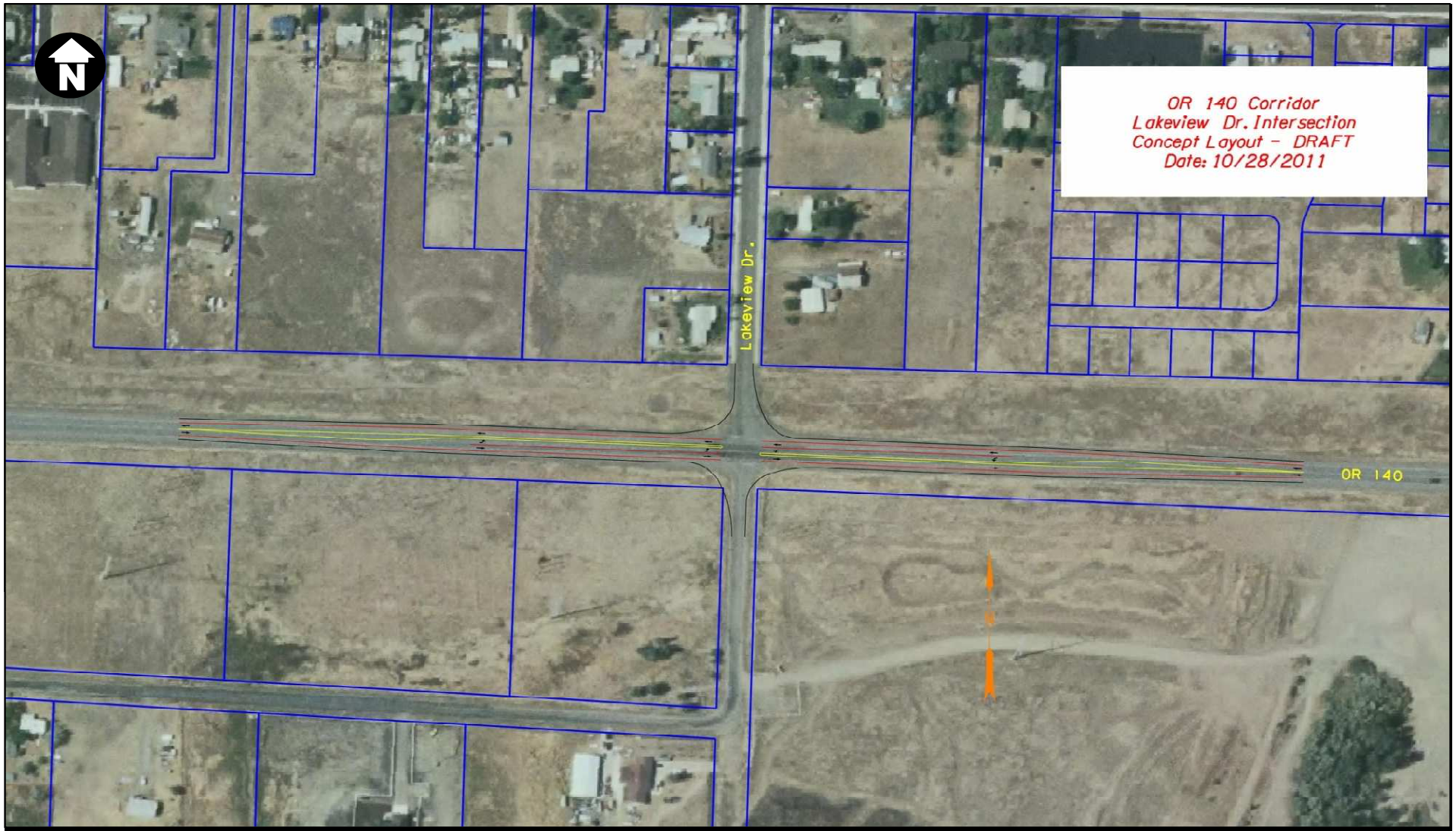
OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Striping

DRAFT Figure 6-19

Concept I-7
Avenue G & Agate Road
Channelization and Traffic Control



OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-20

Concept I-8
OR 140 & Lakeview Drive
Intersection Improvements

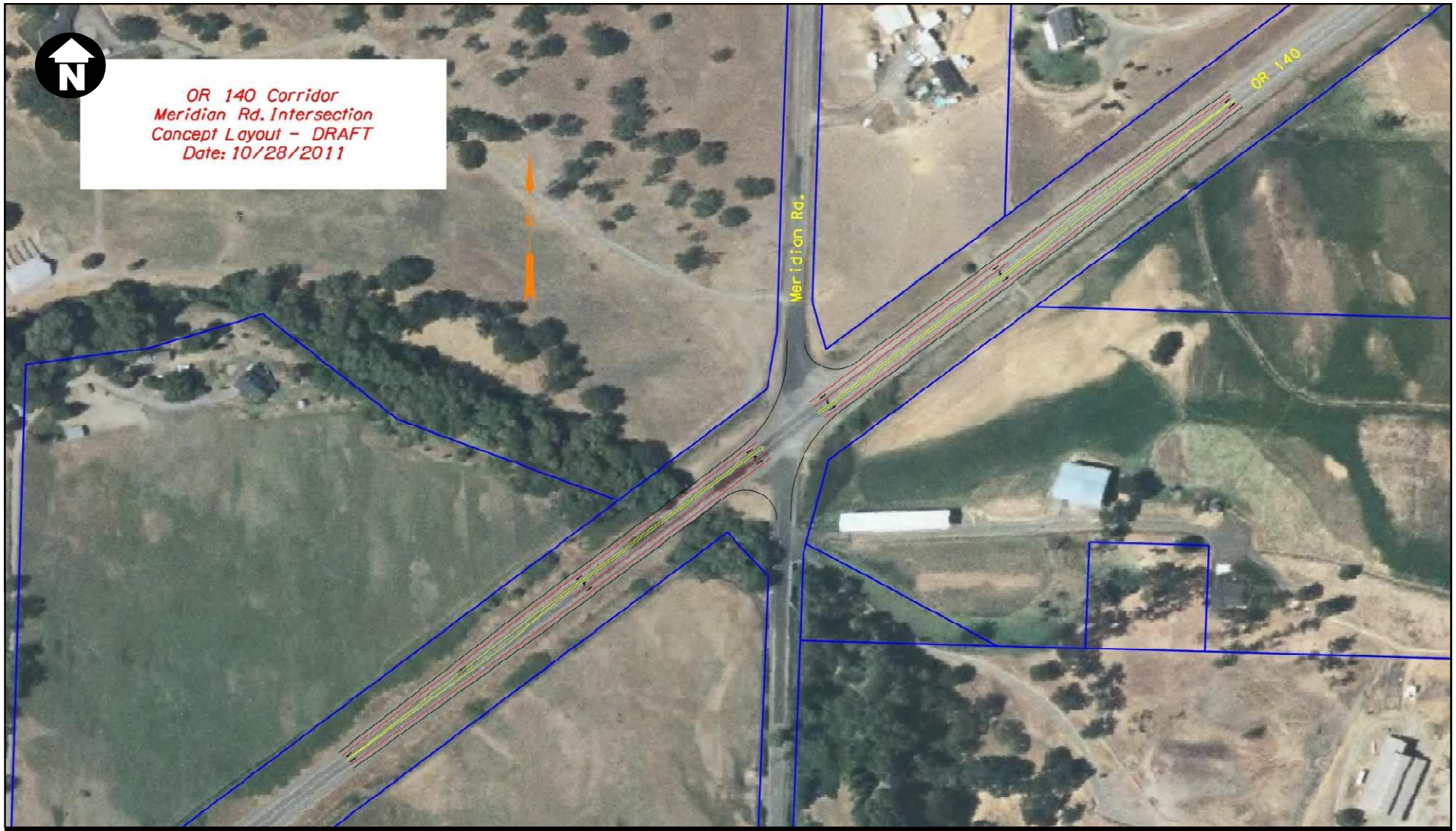
OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-21

Concept I-9
OR 140 & Riley Road
Intersection Improvements



OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-22

Concept I-10
OR 140 & Meridian Road
Intersection Improvements

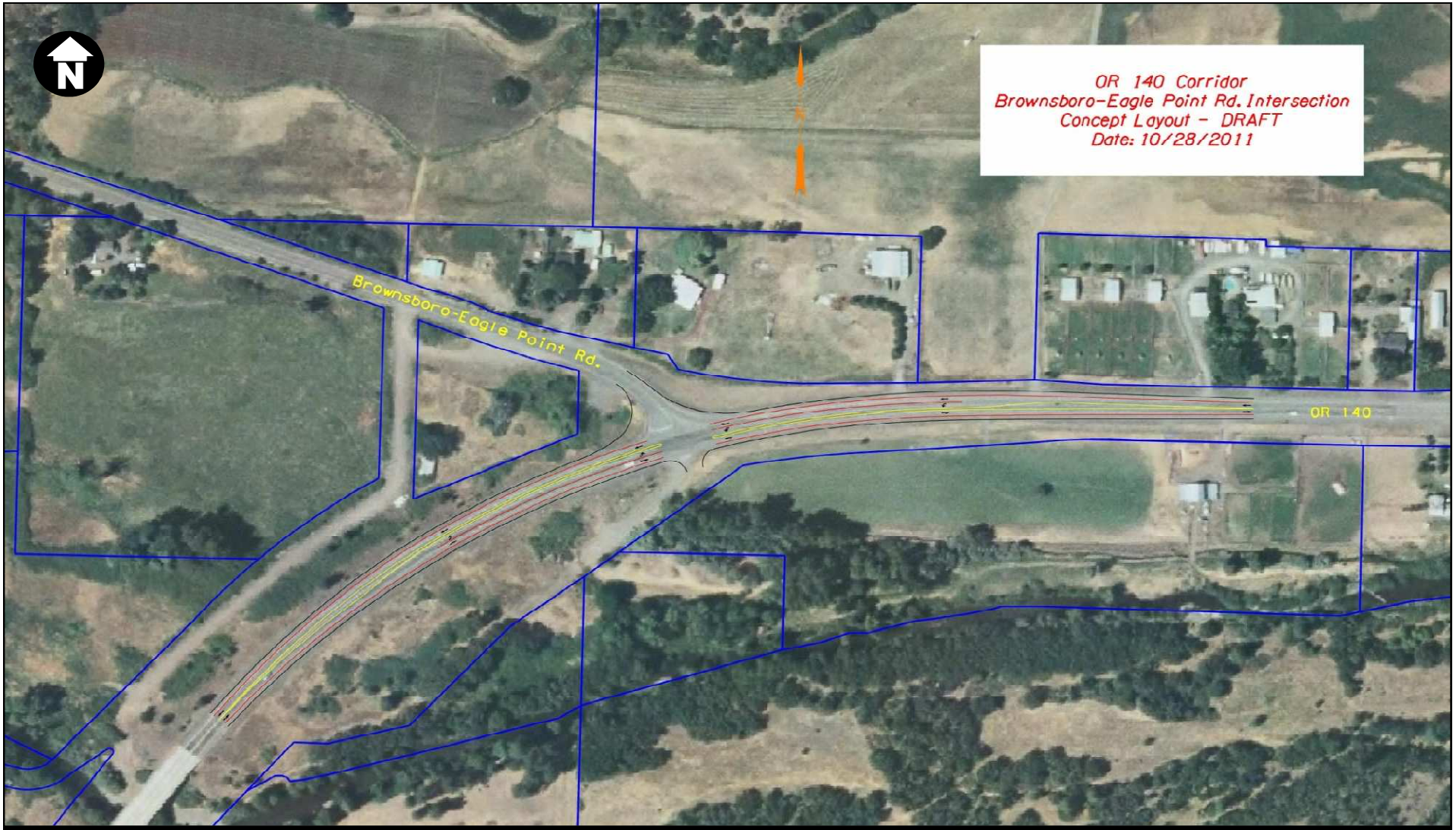
OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-23

Concept I-11
OR 140 & Brownsboro-Meridian Road
Intersection Improvements



OR 140 Corridor Plan

Legend

- Right of Way Line
- Edge of Pavement
- Left-Turn Lane Striping
- Approximate Tax Lots

DRAFT Figure 6-24

Concept I-12
OR 140 & Brownsboro-Eagle Point Road
Intersection Improvements