

Chapter 5

Alternative Identification and Preliminary Screening

The purpose of this chapter is to identify the preliminary alternatives considered for transportation improvements to address deficiencies noted in the OR 99 corridor under existing and future conditions. The following sections present descriptions, scaled physical layouts, and opportunities and constraints associated with the five preliminary alternatives. Preliminary screening was applied to the alternatives to determine which should be advanced for further consideration.

Alternative Descriptions

Five preliminary alternatives were considered to address the transportation needs in the OR 99 corridor through Junction City. These alternatives address all transportation modes and have a broad range of complexities and cost. The alternatives include:

- Alternative 1: Improve Existing Corridor – Maintain width from Flat Creek Bridge to 3rd Avenue;
- Alternative 2: Improve Existing Corridor with Widening as Needed;
- Alternative 3: Improve Local Facilities;
- Alternative 4: Juniper Street / Ivy Street Couplet¹; and
- Alternative 5: OR 99 By-pass: OR 99E to OR 36.

A description of each alternative follows.

Alternative 1: Improve Existing Corridor within Available Right-of-way

The first alternative focuses on improvements that can be implemented with limited acquisition of right-of-way. As previously discovered, the four-lane section of OR 99 between the Flat Creek Bridge and 3rd Avenue acts as a major bottleneck in the system with no turn lanes or bike lanes provided. With only 60 feet of right-of-way available in this area and many buildings constructed close to the existing back of sidewalk, there is no ability to widen the highway and add these needed amenities without major property and business impacts.

This proposed alternative would restripe the existing highway, which includes only four through lanes (two in each direction), to include one through lane in each direction, one bike lane in each direction, and a median to allow for left turn lanes where desired. Therefore, the resulting cross-section within the existing 60-foot right-of-way would include:

- 2 travel lanes (12 feet wide each),
- 1 median/left turn lane (14 feet wide),
- 2 bike lanes (5 feet wide each), and
- 2 sidewalks (6 feet wide each).

¹ Alternative 4 includes two options for the southern extents of the couplet. Under Option A the couplet would begin on the southern end approximately 1,000 feet south of 1st Avenue. Under Option B the couplet would extend farther south.

Figure 5-1 shows the extents of the three-lane section of OR 99, as well as the proposed cross-section.

This new cross-section would be achieved by transitioning from the existing five-lane cross-sections to the north and south by dropping a through lane as a right turn in the southbound direction at 17th Avenue, as well as in the northbound direction at 3rd Avenue. The capacity of the roadway could be further improved through implementation of an access management plan and pedestrian refuge islands could be constructed at mid-block locations to improve pedestrian safety and highway crossing opportunities. Pedestrian crossing for the visually impaired could further be enhanced through the provision of audible pedestrian signals at all signalized highway intersections.

While only a preliminary level of analysis that did not include use of the travel demand model was conducted to determine if the above referenced improvements could reasonably be expected to meet mobility standards, it was found that the proposed modification of OR 99 from the Flat Creek Bridge to 3rd Avenue that adds left turn lanes by removing through lanes makes intersection operation worse than in the No Build condition. It is suspected that further analysis would find that without the existing two through lanes in each direction, insufficient capacity would remain to adequately serve highway traffic, resulting in over-capacity conditions on OR 99 and the potential for increased traffic on local streets in the area.

To mitigate poor operations at the OR 99/ 1st Avenue intersection, right turn lanes would be added to all approaches, along with dual left turn lanes on the westbound approach and modifications to the current signal timing and phasing. While the northbound and southbound right turn lanes would fit within available right-of-way, the other improvements to the eastbound and westbound approaches would not, resulting in private property impacts. Furthermore, the additional turn lanes on the westbound approach may require widening of the BNSF railroad crossing. Preliminary analysis results suggest this intersection may operate at a v/c ratio of 0.81 with these improvements in place (mobility standard requires $v/c \leq 0.75$).

Improvements required at the intersection of OR 99/ OR 36 include the construction of a westbound right turn lane, dual eastbound left turn lanes with restriping to create a shared through-right turn lane, signal timing and phasing modifications, and relocating the crosswalk from the north approach to the south approach. Adding the westbound right turn lane would require widening the BNSF railroad crossing, but other improvements would fit within available right-of-way. Preliminary analysis results suggest this intersection may operate at a v/c ratio of 0.84 with these improvements in place (mobility standard requires $v/c \leq 0.75$).

Installing a traffic signal at the three-way intersection on OR 99 at Prairie Road would allow for mobility standards to be met, but may not be a desirable improvement as virtually all turning movements at this intersection are turning left from OR 99 to Prairie Road or turning right from Prairie Road to OR 99. Because of this, it is very unlikely that required warrants for signalization could be met and that signalization would not benefit these turning movements enough to justify the added delay incurred by mainline traffic.

Given that the movement that failed to meet mobility standards was the right turn from Prairie Road, another option for mitigation includes the construction of an acceleration lane from Prairie Road to southbound OR 99, allowing for free right-turn movements. However, with a private driveway that is used by large trucks associated with a light industrial business located on the west side of OR 99 approximately 400 feet south of Prairie Road, an acceleration lane at this location could present a hazard.

Alternative 2: Improve Existing Corridor with Widening as Needed

Alternative 2 increases the capacity in the OR 99 corridor by retaining the existing two through lanes in each direction while adding bicycle lanes and a center turn lane through the purchase of additional right-of-way. This would provide needed left turn lanes and bicycle lanes between the Flat Creek Bridge and 3rd Avenue similar to Alternative 1, however it would not be done at the expense of losing existing through lanes. The proposed cross-section for this alternative would require 92 feet of right-of-way (compared to the 60 feet of existing right-of-way) and would include:

- 4 travel lanes (12 feet wide each),
- 1 median/left turn lane (14 feet wide),
- 2 bike lanes (5 feet wide each), and
- 2 sidewalks (10 feet wide each).

While only 6-foot wide sidewalks are required to meet design standards for this facility, 10-foot sidewalks are recommended to provide a more comfortable and attractive walking environment and allow for potential inclusion of street trees, benches, bike racks, trash cans, and other amenities. If the narrower 6-foot sidewalks were constructed, the cross-section would be reduced to 84 feet. Pedestrian travel would be further improved by constructing mid-block refuge islands to aid crossings of OR 99 and pedestrian crossing for the visually impaired could further be enhanced through the provision of audible pedestrian signals at all signalized highway intersections. Figure 5-2 shows the extents of the new five-lane section on OR 99, as well as the proposed cross-section.

As indicated in Figure 5-2, widening the highway to a 92-foot right-of-way width would result in property impacts on both sides of the highway out to 16 feet from the existing back of sidewalk. From a preliminary review of area properties adjacent to OR 99 between the Flat Creek Bridge and 3rd Avenue, it is estimated that this would result in the purchase of approximately 27 businesses (or approximately 50% of area businesses) based on current building locations. If the narrower cross-section including the smaller 6-foot sidewalks were constructed, the number of businesses purchased would only drop to approximately 22 (or approximately 40%).

While only a preliminary level of analysis that did not include use of the travel demand model was conducted to determine if the above referenced improvements could reasonably be expected to meet mobility standards, it is expected that with the improvements made along OR 99, including the northbound and southbound left turn lanes, no other improvements would be necessary at the study intersections of 10th Avenue and 6th Avenue.

Improvements needed at the intersections on OR 99 at 1st Avenue, Prairie Road, and OR 36 are the same as identified in Alternative 1.

Alternative 3: Improve Local Facilities

The third alternative considers improvements that would extend, realign, upgrade and increase the capacity of County roads surrounding the City to enhance connectivity and provide alternative routes to OR 99. Under this alternative, new and upgraded roads would be constructed to County Collector standards, but no new improvements would be included within the OR 99 corridor. In most areas, the roadway upgrades would simply provide wider shoulders (total pavement width of 36 feet), which

generally makes a roadway more comfortable for drivers but provides only small capacity benefits. The wider shoulders would also be able to accommodate bicycle traffic. However, it should be noted that where new facilities are proposed that would be located on rural lands, land use approvals are necessary, and a statewide land use Goal 3 (Agriculture) exception could be required unless the area is first brought into the urban growth boundary. The cross-sections of these roadways would include:

- 2 travel lanes (12 feet wide each)
- 2 shoulders (6 feet wide each)

Pitney Lane, a local street, would be improved to collector (with shoulder) standards from OR 36 north to Bailey Lane and would be realigned from Bailey Lane north to intersect with High Pass Road opposite Oaklea Drive. This realignment and upgrade would make Pitney Lane more attractive as an alternate route to OR 99 and would facilitate north-south connectivity by acting as an extension of Oaklea Drive. The realigned section of Pitney Lane would impact rural lands and statewide land use law restricts the level of road improvements that can be constructed on these lands. State land use does permit a certain level of road improvement outside urban growth boundaries if certain criteria are met. Realignment of roads is a permitted use, provided the Transportation Planning Rule (TPR) definition of a realignment is met, and provided improvements do not force a significant change in, or significantly increase the cost of farm and forest practices on the lands.

Prairie Road (east of OR 99) would be realigned to remove the skewed UPRR crossing, and continue north along the east side of the UPRR line. A new east-west roadway would then be constructed to connect Prairie Road to the OR 99/ OR 36 intersection, creating a “T”-intersection with Prairie Road. This would have negligible impact on the BNSF rail crossing, but would require construction of a new UPRR crossing (to replace the old one) just west of the intersection of the new roadway at Prairie Road. As the extension of Prairie Road continues northward, it would veer east, close to the City’s urban growth boundary, run over the existing Strome Lane, intersect with River Road, and continue due north until it connects to Dane Lane. This route would further enhance north-south connectivity by providing an alternative to River Road and Lovelake Road that is closer to the urban area, requiring less out-of-direction travel. This route may also provide an attractive alternative to using 1st Avenue for employees of the County Coach facility that want to go southbound on OR 99. Again, as most of these improvements would impact rural lands, a land use permit would at minimum be required, and an exception to statewide land use Goal 3 (Agriculture) may be necessary unless the surrounding area is first brought into the urban growth boundary. In particular, any new road extensions would require a Goal 3 exception unless the area of construction is within the urban growth boundary, or unless it can be proven that the purpose of the road is to reduce local access to or local traffic on a state highway, the road is limited to two travel lanes, and private access and intersections are limited to rural needs or to provide adequate emergency access.

East-side connectivity enhancements that may make the Prairie Road extension and the existing routes along Lovelake Road and River Road more attractive include upgrades of Dane Lane and River Road on the east side of the City. These enhancements would generally include widening to increase shoulder widths, making the roadways more comfortable for motorists and bicycles. Dane Lane would be upgraded from a local street to a collector (with shoulders) from Deal Street to Lovelake Road, while River Road would be improved from OR 99 to Lovelake Road.

Figure 5-3 illustrates the local facility improvements of Alternative 3 described above.

A preliminary analysis of the effectiveness of these improvements was conducted by adding the proposed road extensions to the street network in the transportation demand model developed for the Junction City area. The results showed only about 200 vehicles an hour diverting away from OR 99 to use these upgraded routes.

Alternative 4: Juniper Street / Ivy Street Couplet

Alternative 4 would change the traffic circulation pattern along the OR 99 corridor through much of the City by replacing a section of the existing highway with a couplet system that would accommodate northbound travel only along Ivy Street (OR 99), with southbound travel rerouted to Juniper Street one block to the west. By separating the northbound and southbound traffic onto two streets, turning conflicts at intersections are reduced and additional right-of-way becomes available for capacity and streetscape improvements.

Under this proposal, the north end of the couplet would begin at 17th Avenue where the southbound lanes would shift to the west and align with Juniper Street at the intersection with 16th Avenue. This would require purchasing the property bounded by 17th Avenue, OR 99, 16th Avenue, and Juniper Street and construction of a bridge over Flat Creek. From 16th Avenue, the southbound lanes would travel along the existing Juniper Street corridor to 3rd Avenue, with no need to widen the existing 60-foot right-of-way along Juniper Street.

While the existing alignment of Juniper Street ends at 3rd Avenue, it was decided to carry the southbound lanes south of 1st Avenue, as the intersection of OR 99 at 1st Avenue was previously determined to be a significant bottleneck in the corridor in need of mitigation. Therefore, from 3rd Avenue, the southbound lanes veer further to the west to intersect 1st Avenue opposite Kalmia Street. They then travel down the existing Kalmia Street alignment for approximately 500 feet before turning back to the east to connect with the existing OR 99 alignment approximately 900 feet south of 1st Avenue. Much of this alignment would require purchase of private property. The northbound travel lanes would stay within the existing OR 99 right-of-way through the entire corridor.

In each direction within the couplet, OR 99 will be constructed to fit within the existing 60-foot right-of-ways along Ivy Street and Juniper Street and will include:

- 2 travel lanes (12 feet wide each)
- 1 bike lane (6 feet wide)
- Parallel parking on one side of the highway (8 feet wide)
- 2 sidewalks (11 feet wide each)

Figure 5-4 shows the proposed couplet alignment and an illustration of the proposed highway cross-section. A design speed of 30 mph, which would allow for a posted speed of 25 mph, was maintained for both directions of OR 99. Potential new traffic signal locations shown on Figure 5-4 were assumed for cross streets currently maintaining signals on the existing OR 99 alignment and are not based on needs discovered through actual analysis, which would occur in the next phase of this study.

The improvements proposed as part of this alternative would improve capacity for northbound and southbound travel along OR 99 by retaining two through lanes in each direction and reducing the amount of turning conflicts at highway intersections. The inclusion of parallel parking would

supplement existing on-site parking for abutting businesses, which in many cases is very limited today. Also, the inclusion of bike lanes would fill the existing gap in the bike system, allowing for a continuous route along OR 99 through the entire study area. Furthermore, posted speeds, which are 30 mph today, may be able to drop as the new cross-section would communicate to motorists that they are in a downtown environment.

Pedestrian travel would be significantly enhanced by providing wider sidewalks that could be used to accommodate street trees and street furniture such as trash cans, decorative light poles, benches, and bike racks. A buffer between pedestrians and motor vehicle traffic would be created by the bike lanes and parking aisle, making the environment more comfortable for walking. In addition, pedestrian crossings of OR 99 would become easier as people would only be required to cross two lanes of traffic at a time, with vehicles only approaching in one direction. Furthermore, bulb-outs could be constructed at street corners at the ends of the parallel parking aisles to shorten crossing distances and pedestrian crossing for the visually impaired could further be enhanced through the provision of audible pedestrian signals at all signalized highway intersections.

The slower highway speeds and wider sidewalks may also create a more conducive environment for bus stops through the couplet, allowing for direct access to adjacent businesses. The additional sidewalk widths may provide opportunities to supplement bus stops with shelters and benches. While bus pullouts could not be accommodated with the proposed cross-section, there are two alternatives for including them where desired.

The first alternative would be to place the parallel parking and bike lanes side-by-side on the right side of the highway, rather than on opposite sides of the highway as proposed. Where bus pullouts are desired (requiring approximately 10 feet of width), the parking aisle would be eliminated, the bike lane would be reduced to 5 feet wide, and the sidewalk would be reduced to 10 feet wide. While bike lanes and parallel parking aisles are often located side-by-side, especially on two-way roads, separating them as proposed would create a more attractive and safe environment for bicyclists as the danger of being hit with a car door would be eliminated. If this alternative for the inclusion of bus pullouts were selected, this risk would be reintroduced.

The other alternative would be to identify where bus pullouts are likely to be desired in the future, outline where additional right-of-way would be required to accommodate them, and either obtain that right-of-way during construction and build them or require the dedication of that right-of-way from adjacent properties when they redevelop and include the pullout as part of the frontage improvements.

Finally, this alternative would include impacts to private properties along the corridor. While much of the couplet would fit within existing right-of-way, the transitions at the north and south ends will require the purchase of private property. However, as the land surrounding Juniper Street is already zoned for commercial/residential uses, construction of the couplet may induce redevelopment of the Juniper Street corridor and extend activity in the west side of the downtown.

Alternative 4 – Option A: Juniper Street / Ivy Street Couplet with Southern Extension

This modification to the southern end of the Juniper Street/ Ivy Street couplet introduced as Alternative 4 was forwarded to explore opportunities to utilize currently vacant land along the east side of OR 99 between 1st Avenue and Prairie Road. As illustrated in Figure 5-5, this extension would begin at the southern end of original Alternative 4 where the southbound and northbound lanes

would come back together. However, rather than bringing these lanes back together on a common roadbed, the northbound lanes would veer to the west approximately 100 feet to run adjacent to the BNSF railroad. This would create a strip of vacant land between the northbound and southbound directions approximately 100 feet in width that would continue to the south until the couplet is brought back together approximately 1,300 feet north of the intersection with Prairie Road, where available right-of-way is reduced.

The vacant lands created between the northbound and southbound alignments could be made available for development or even used to offset private property impacts resulting from the project. The comprehensive plan shows the western portion of this area designated for commercial zoning, but transitions to industrial zoning in the eastern portion near the railroad. Therefore, the zoning of this land may need to be modified to fit the new property boundaries and highway alignment.

Also shown in Figure 5-5 is a new access road along the west side of the UPRR line running south from 1st Avenue. Currently two properties between the BNSF and UPRR lines south of 1st Avenue in the area where the couplet would be extended are taking access directly from OR 99 via long driveways (approximately 200 feet long). When the couplet is shifted to the east and brought close to the BNSF line, these driveways would be reduced in length considerably, with rail crossings very close to the northbound lanes of the highway. When the crossing is blocked by a train, vehicles attempting to enter these sites, which may include large trucks associated with the industrial uses, would queue on the highway. To prevent this, the access road was included to provide alternate access to these properties so the driveways across the BNSF line could be eliminated.

Alternative 5: Construct a By-pass

Alternative 5 includes a realignment of OR 99 around the east side of Junction City, creating a by-pass of much of the urban area. This concept is illustrated in Figure 5-6, with additional detail around the proposed interchange areas provided in Figures 5-7 and 5-8.

The south end of the by-pass would begin south of OR 36, with a new interchange in the southwest quadrant of the existing OR 99/ OR 36 intersection. The existing OR 99 alignment north of OR 36 would be realigned to become the crossroad with the interchange, with OR 36 being realigned to the north to intersect the realigned portion of OR 99 no closer than 1,320 feet from the interchange ramp terminals.

From this interchange, the new OR 99 alignment would be elevated as it proceeds north, with grade separated crossings of a realigned Prairie Road and the BNSF and UPRR railroad tracks. Once over the UPRR line, OR 99 would drop to meet grade and would continue north close to the east side of the City's urban growth boundary. Grade separated crossings would be provided at major crossing roadways such as River Road and Dane Lane. However, no access would be allowed to the realigned OR 99 between the interchanges at the north and south termini, as there would be less than 3 ½ miles between them. Given ODOT's spacing standards for interchanges, requiring 1.9 miles between interchanges in urban areas and 3 miles in rural areas, there would not be sufficient distance to accommodate a third interchange.

OR 99 would then be elevated to cross over the UPRR and BNSF railroads before returning to grade to take over the existing OR 99E alignment, where the second interchange would be constructed. To accommodate the interchange, the connection between OR 99E and OR 99W would be relocated by

cutting off the existing OR 99E alignment south of the interchange and constructing a new roadway between the interchange and OR 99W near the City's northern urban growth boundary.

With the by-pass in place, the existing OR 99 alignment between the new interchanges would become a business route and could be transferred from ODOT to fall under the jurisdiction of the City or County.

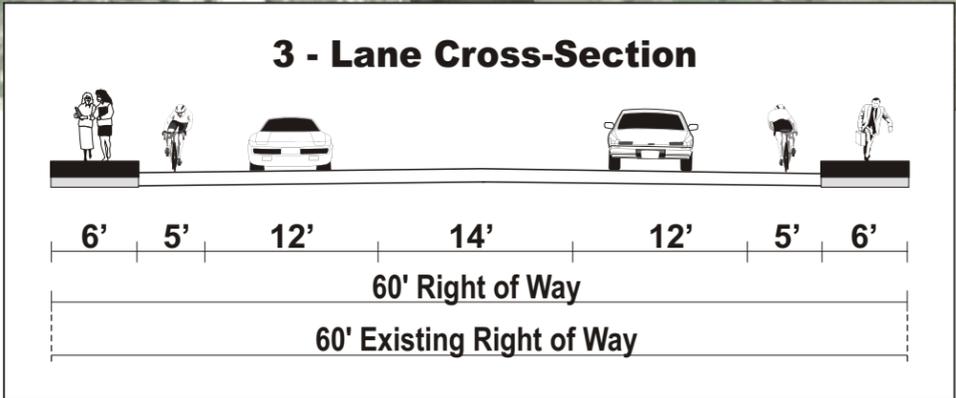
The new alignment would require a 58-foot cross-section which would be composed of the following:

- 2 travel lanes (12 feet wide each)
- A median (14 feet wide)
- 2 shoulders (10 feet wide on each side)

The illustrations in Figures 5-6, 5-7, and 5-8 were drawn to accommodate a 70 mph design speed on the realignment of OR 99.

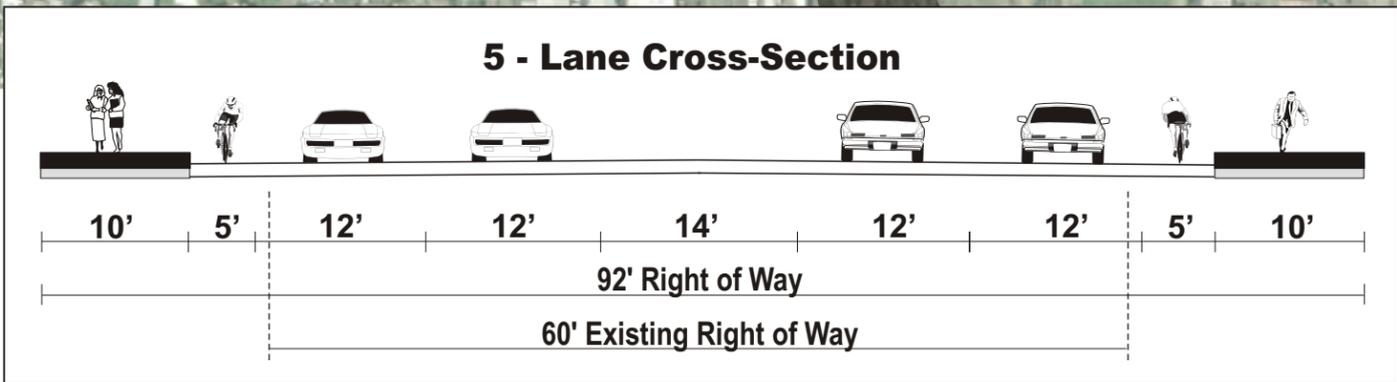
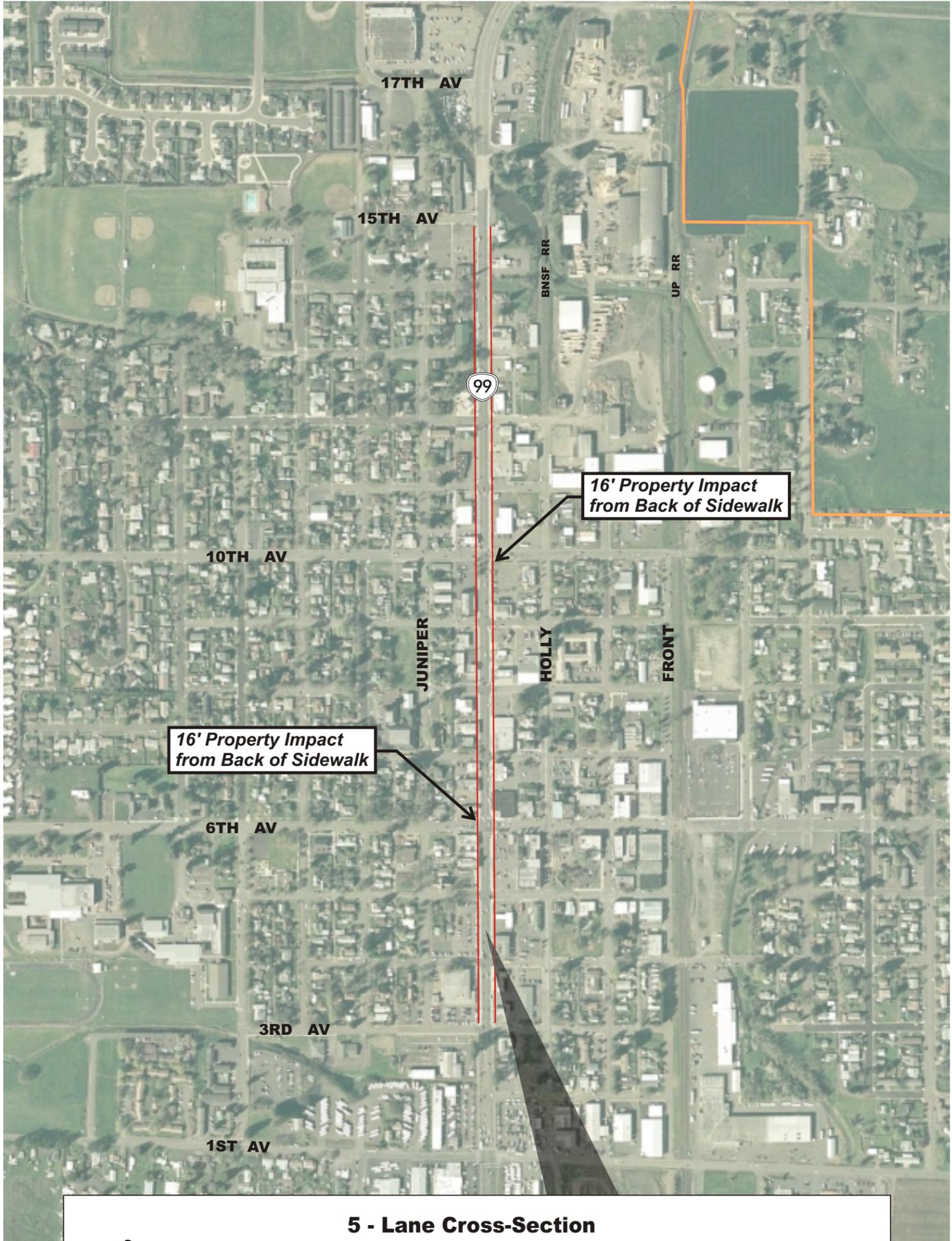
While this alternative may have the potential to remove a significant amount of traffic out of the current OR 99 alignment to relieve over-capacity intersections, improvements within the existing OR 99 corridor would still be necessary to address needs for turn lanes, bicycle lanes, and improved pedestrian facilities. Furthermore, the reduction in traffic volumes through town could have negative impacts on area businesses.

LEGEND
— - 3 Lane Right of Way Line
— - Urban Growth Boundary (UGB)



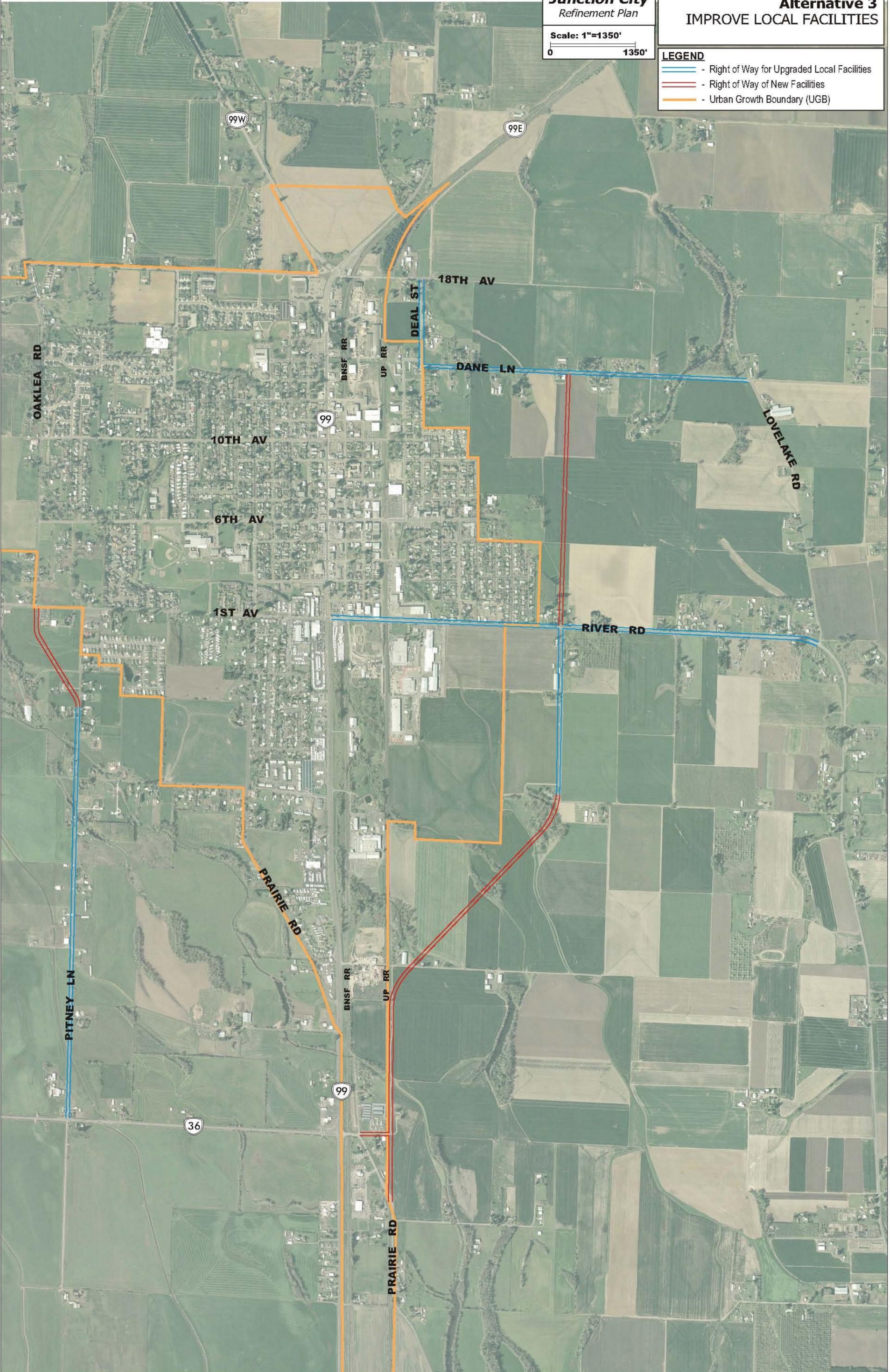
LEGEND

- 5 Lane Right of Way Line
- Urban Growth Boundary (UGB)



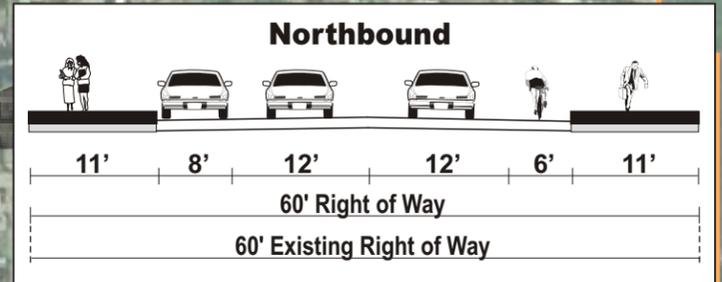
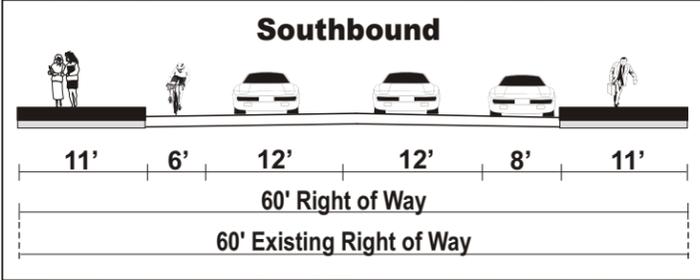
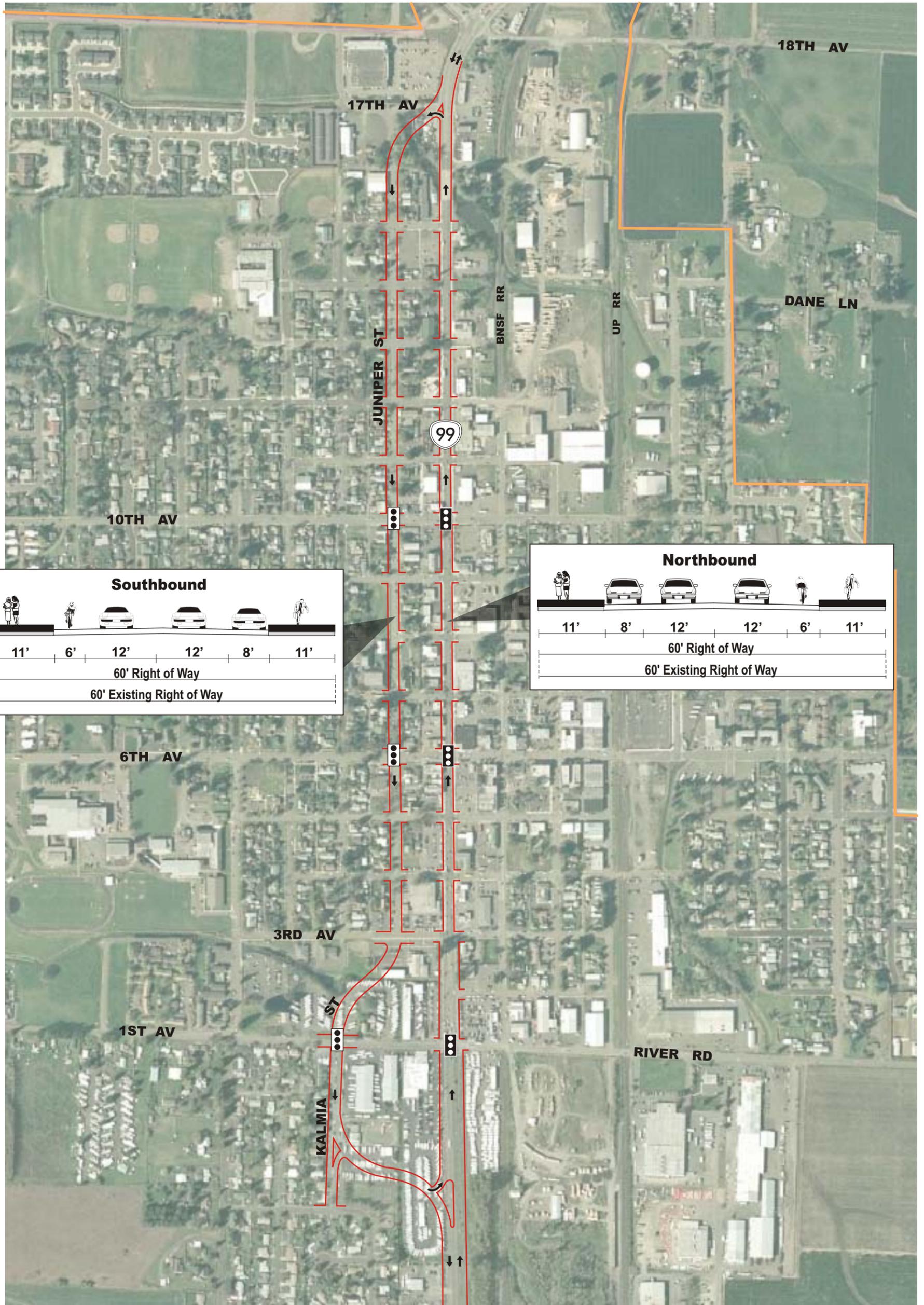
LEGEND

- Right of Way for Upgraded Local Facilities
- Right of Way of New Facilities
- Urban Growth Boundary (UGB)



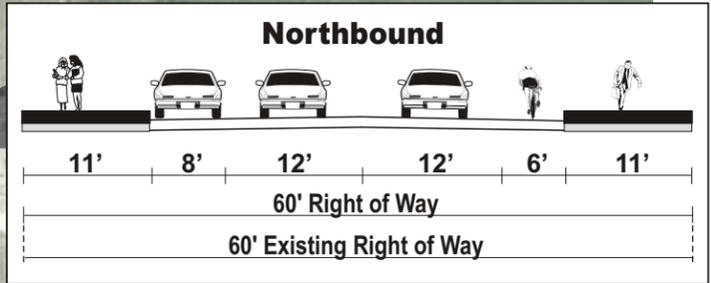
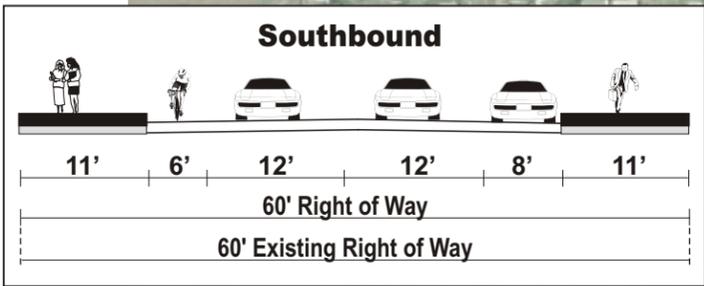
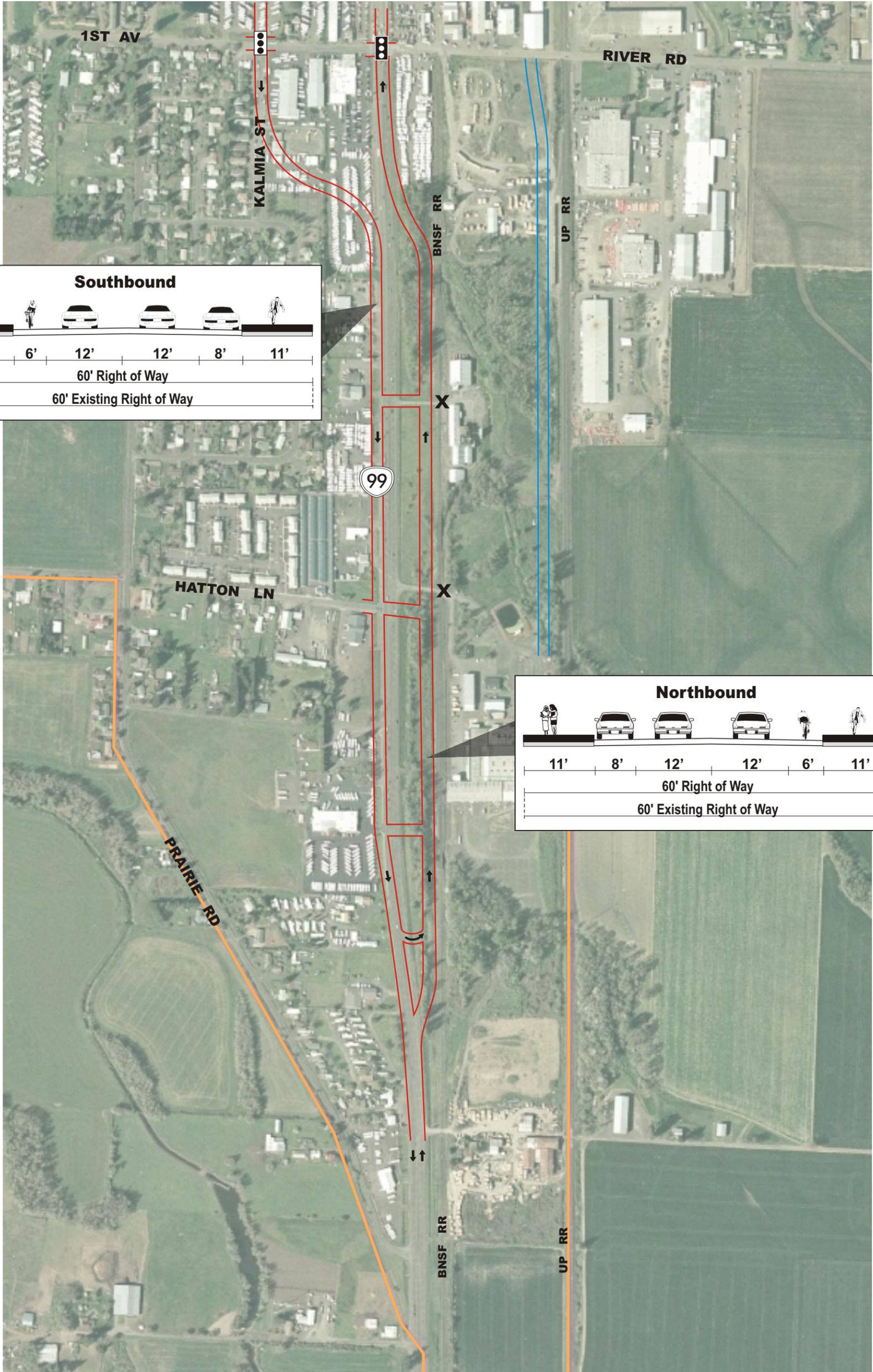
Scale: 1"=500'
0 500'

- LEGEND**
-  - Couplet Alignment
 -  - Urban Growth Boundary (UGB)
 -  - Potential New Traffic Signal
 -  - Existing Traffic Signal



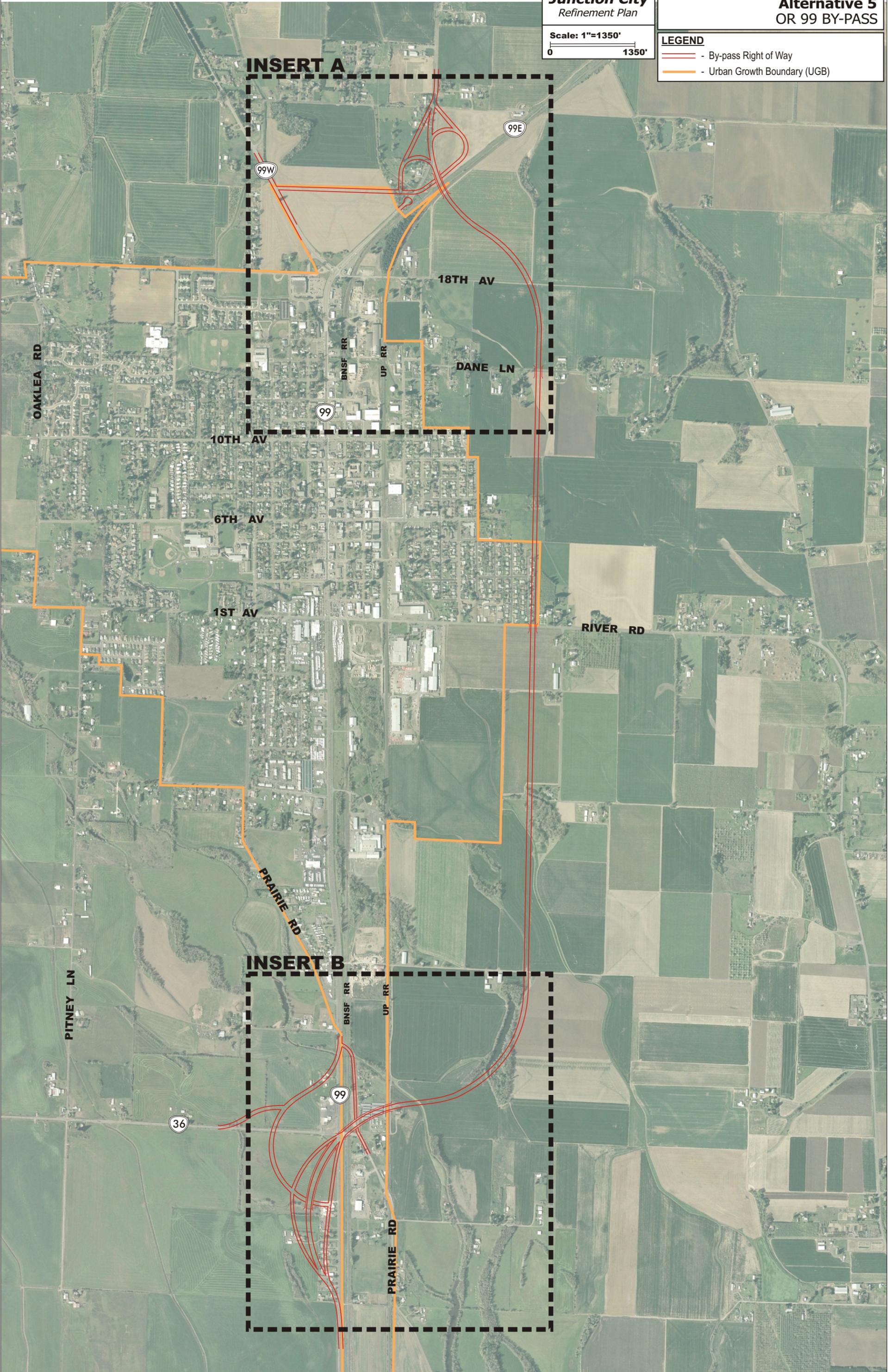
LEGEND

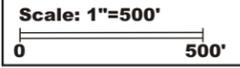
- - Couplet Option A Right of Way
- - Access Road
- - Urban Growth Boundary (UGB)
- Potential New Traffic Signal
- Existing Traffic Signal
- X** - Close Approach



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LEGEND
- By-pass Right of Way
- Urban Growth Boundary (UGB)





LEGEND	
	- Proposed By-pass Alignment
	- Stop Sign
	- Urban Growth Boundary (UGB)

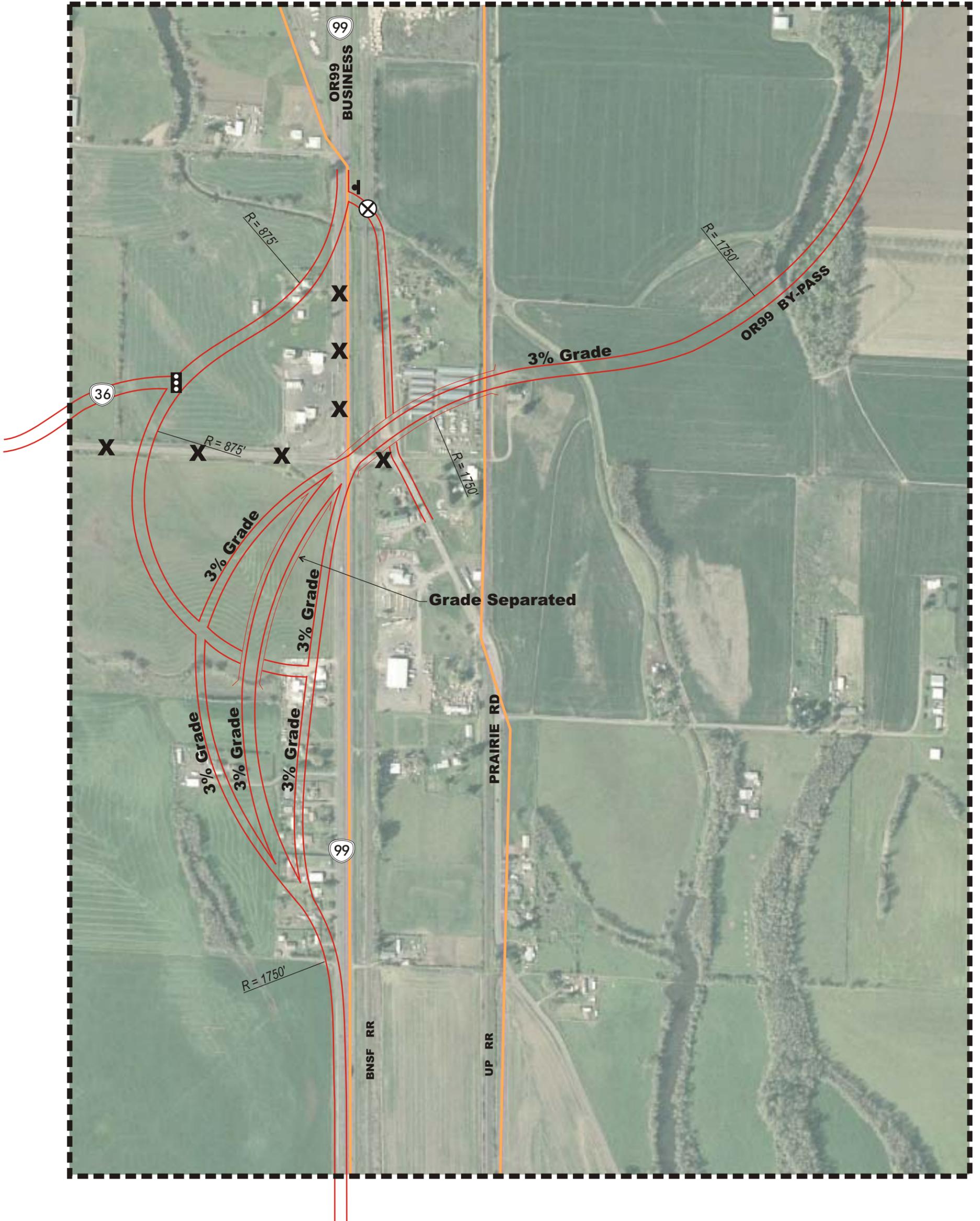
INSERT A



LEGEND

- - Proposed By-pass Alignment
-  - Stop Sign
-  - Traffic Signal
- X** - Existing Road to be Closed
- - Urban Growth Boundary (UGB)
-  - At Grade Rail Crossing

INSERT B



Opportunities and Constraints

Opportunities and constraints associated with each alternative are described below for consideration during the preliminary screening process. As only the alternatives selected for further consideration will undergo detailed analysis, some characteristics of alternatives at this stage must be described on a qualitative basis aimed at identifying major or fatal flaws.

Alternative 1: Improve Existing Corridor – Maintain width from Flat Creek Bridge to 3rd Avenue

Opportunities

- Left turn lanes are provided at intersections between 17th Avenue and 3rd Avenue.
- Pedestrian travel along OR 99 is improved by providing a buffer (5-foot bike lane) between the sidewalk and vehicle traffic.
- Pedestrian crossings of OR 99 are facilitated by decreasing the number of vehicle lanes and construction of refuge islands in the median.
- Crossing safety for the visually impaired would be enhanced with audible pedestrian signals.
- Bike lanes are provided, creating continuous bike facilities through the entire OR 99 corridor within the City.
- There would be no private property impacts north of 3rd Avenue.

Constraints

- Intersections along OR 99 at 10th Avenue and 6th Avenue would not meet ODOT mobility standards, even with additional capacity given to side streets.
- No improvements are made for transit. In fact, within the new cross-section between 17th Avenue and 3rd Avenue, bus stops could not be allowed.
- Significant private property impacts would be required on the eastbound and westbound approaches of 1st Avenue.
- Minor private property impacts would be required on the westbound approach of OR 36.
- The BNSF railroad crossings east of the intersections with 1st Avenue and OR 36 may require widening.

Alternative 2: Improve Existing Corridor with Widening as Needed

Opportunities

- Through capacity on OR 99 is maximized by retaining 4 through lanes
- Left turn lanes are provided at intersections between 17th Avenue and 3rd Avenue.
- Pedestrian travel along OR 99 is improved by providing a buffer (5-foot bike lane) between the sidewalk and vehicle traffic.
- Pedestrian crossings of OR 99 are facilitated by construction of refuge islands in the median.
- Crossing safety for the visually impaired would be enhanced with audible pedestrian signals.

- Bike lanes are provided, creating continuous bike facilities through the entire OR 99 corridor within the City.

Constraints

- Would require 16 feet of widening on either side of OR 99 between the Flat Creek Bridge and 3rd Avenue. Given the proximity of existing development to the current right-of-way line, this would result in a significant amount of property impacts, requiring an estimated 27 (50% of total) complete purchases and building demolitions. With smaller sidewalks, the impact only drops to 22 (40% of total) complete purchases and building demolitions.
- Significant private property impacts would be required on the eastbound and westbound approaches of 1st Avenue.
- Minor private property impacts would be required on the westbound approach of OR 36.
- The BNSF railroad crossings east of the intersections with 1st Avenue and OR 36 may require widening.
- No improvements are made for transit. Bus stops could be accommodated, but would be required to stop in the outer travel lanes causing temporary obstructions to vehicular flow.

Alternative 3: Improve Local Facilities

Opportunities

- Would improve overall connectivity around the City and may take some traffic away from OR 99.

Constraints

- Unlikely that enough traffic would divert from OR 99 to these new facilities to allow OR 99 intersections to operate within adopted mobility standards.
- Does not address deficiencies along OR 99 corridor including lack of turn lanes and bicycle facilities or pedestrian crossing needs.
- New roadways and some widening will require additional right-of-way, including impacts to farmlands outside of the urban growth boundary. As noted earlier, the new roads may require statewide land use Goal 3 (Agriculture) exceptions unless certain land use requirements can be met, or the area is first brought into the urban growth boundary. Road realignments and widening may be conditionally approved, with notice and opportunity for public appeal, and must demonstrate that no significant change in, nor increase in cost of accepted farming and forestry practices results from the realignment or widening.

Alternative 4: Juniper Street / Ivy Street Couplet

Opportunities

- The one-way system eliminates many turning conflicts, enhancing capacity and safety.
- Makes use of existing right-of-way along Ivy Street and Juniper Street.
- New highway cross-section may result in reduced posted speeds through the downtown.
- Provision of on-street parking would supplement on-site parking for adjacent businesses.
- Wide sidewalks would allow for landscaping and street furniture, creating a more enjoyable setting.
- Crossing safety for the visually impaired would be enhanced with audible pedestrian signals.
- Pedestrian crossings of OR 99 would be facilitated by potential construction of bulb-outs at corners and need to only cross two lanes of one-way traffic at a time.
- Inclusion of parking aisle and bike lanes would provide a buffer between pedestrians and motor vehicles, making the area more attractive for walking.
- Bike lanes are provided, creating continuous bike facilities through the entire OR 99 corridor within the City.
- Buses stops could be incorporated if desired.
- Compatible with commercial/residential zoning along Juniper Street.
- New exposure to highway traffic may encourage redevelopment of properties along Juniper Street and the new southbound roadway.

Constraints

- Right-of-way acquisition would be required at the north and south ends of the southbound alignment.
- Incorporation of bus stops would require additional right-of-way if bus pullouts were desired.

Alternative 4: Option A: Juniper Street / Ivy Street Couplet with Southern Extension

(In addition to Opportunities and Constraints listed under Alternative 4)

Opportunities

- Would make additional vacant land available for development.
- Additional vacant land could be used to offset other private property impacts resulting from the project.

Constraints

- May need to amend comprehensive plan zoning for properties between the northbound and southbound roadways in the southern extension to address current mix of commercial and industrial zoning.
- May need to eliminate OR 99 access to two industrial businesses to the east, potentially requiring construction of a new road through private properties.
- As the distance between the northbound and southbound roadbeds would only be approximately 100 feet, there would be limited room for vehicle queues on crossroads joining the two.

Alternative 5: OR 99 By-pass: OR 99E to OR 36

Opportunities

- Regional traffic could potentially be diverted from the current OR 99 alignment through Junction City to reduce traffic on that facility.

Constraints

- Two interchanges, several structures, and extensive right-of-way make this alternative the most costly.
- The by-pass could create a potential loss of customers for Junction City businesses as highway volumes through town decrease.
- Even with the reduction in traffic volumes on the existing OR 99 alignment, additional improvements would be necessary to address the need for turn lanes, bicycle lanes and improved pedestrian facilities.
- A relocation of the rail crossing on Prairie Road would be required.

Preliminary Screening

The goal of this task is to consider the opportunities and constraints related to each of the five alternatives described and select no more than three of these alternatives to carry forward for further analysis. While the level of analysis conducted on each alternative at this stage is not intended to be comprehensive, it can be used to identify fatal or major flaws that would result in a recommendation to eliminate an alternative from further consideration. Using the discussion of opportunities and constraints above, along with preliminary consideration of select evaluation criteria² developed in an earlier task, key characteristics and major differences between alternatives are highlighted below.

² Due to the level of analysis conducted through this task, not all criteria can be reasonably considered.

Table 5-1: Preliminary Alternative Screening

Evaluation Criterion	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 4, Opt. A	Alt. 5
<p><i>Meets HDM Mobility Standards</i></p> <ul style="list-style-type: none"> + Meets HDM mobility standard. ✓ No effect on mobility. - Mobility is worsened. 	-	+	✓	+	+	+
<p><i>Able to meet Design Standards</i></p> <ul style="list-style-type: none"> + Meets design standards. ✓ May require design exception. - Would require significant design exception(s). 	+	+	+	+	+	+
<p><i>Facilitates Pedestrian Crossing of OR 99</i></p> <ul style="list-style-type: none"> + Improves pedestrian crossings. ✓ No effect on pedestrian crossings. - Degrades pedestrian crossings. 	+	+	✓	+	+	✓
<p><i>Improves Bicycle Travel</i></p> <ul style="list-style-type: none"> + Improves bicycle travel. ✓ No effect on bicycle travel. - Degrades bicycle travel. 	+	+	✓	+	+	✓
<p><i>Reduces Direct Highway Access</i></p> <ul style="list-style-type: none"> + Reduces access density. ✓ No effect on access density. - Increases access density. 	✓	✓	✓	✓	✓	+
<p><i>Reduces Vehicle Conflicts</i></p> <ul style="list-style-type: none"> + Reduces vehicle conflicts. ✓ No effect on vehicle conflicts. - Increases vehicle conflicts. 	+	+	✓	+	+	+

Table 5-1 (continued): Preliminary Alternative Screening

Evaluation Criterion	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 4, Opt. A	Alt. 5
No new at-grade RR crossings	✓	✓	✓	✓	+	✓
+ Reduces number of at-grade RR crossings.						
✓ No change in number of at-grade RR crossings.						
- Increases number of at-grade RR crossings.						
Private Property Impacts	✓	-	✓	-	-	-
+ No impacts.						
✓ Requires partial property takes.						
- Requires total property takes.						

Table 5-1 provides a preliminary review of select evaluation criteria for each alternative. It should be recognized that as further analysis is conducted in upcoming stages of this study, the ratings shown above will be refined.

Capacity

Alternative 1 will not mitigate poor traffic operations on OR 99 between the Flat Creek Bridge and 3rd Avenue. Traffic volumes are simply too high to remove through lanes. Similarly, Alternative 3 will not reduce enough demand for OR 99 to relieve forecasted congestion under the No Build scenario.

Pedestrian & Bicycle

Alternatives 1, 2, and 4 will improve pedestrian crossing opportunities and provide needed bicycle facilities. Alternatives 2 and 4 would also provide a more attractive walking environment along the highway by incorporating wide sidewalks. All alternatives could incorporate audible pedestrian crossing signals to enhance safety for the visually impaired.

Reduction of Conflicts on OR 99

Alternative 3 is the only alternative that would not reduce conflicts on OR 99.

Railroad Crossings

Some alternatives would reconstruct or move railroad crossings, but none would increase the number of existing crossings. Alternative 4 with the option to extend the couplet to the south would remove to railroad crossings to private businesses if the additional access road were constructed.

Property Impacts

All alternatives will result in impacts to private properties. Alternative 1 is expected to have the fewest impacts, followed by Alternatives 3 and 4, which would have moderate impacts. Alternatives 2 and 5 would have a high degree of impacts.

Other Factors

Alternative 4 would provide on-street parking and opportunities to incorporate streetscape elements such as benches, light poles, bike racks, trees/landscaping, and trash cans. Alternative 2 could also provide opportunities to incorporate streetscape elements if the wider 10-foot sidewalk is constructed.

Posted speeds on OR 99 between 17th Avenue and 1st Avenue may drop as a result of the roadway cross-section proposed as part of Alternative 4.

Alternatives 2 and 4 could provide opportunities to introduce bus stops on OR 99 in the downtown area.

Alternative 4 could stimulate new development activity along Juniper Street, with further development opportunities created by the option to extend the couplet to the south. Conversely, Alternative 2 would require the demolition of many existing businesses and the impacts of removing regional traffic from the City with Alternative 5 could result in a loss of customers.

Alternative 3 includes the construction of new roadways on rural lands to support urban uses within the City, which could require statewide land use Goal 3 (Agriculture) exceptions unless certain land use requirements are met, or the urban growth boundary is expanded to include these areas.

Alternative 5 may function very well for highway users, but further improvements to the old OR 99 corridor between the Flat Creek Bridge and 3rd Avenue would still be needed to address turning conflicts and pedestrian and bicycle needs.

Recommendations

Because Alternative 1 will not mitigate poor traffic operations on OR 99, it should not be considered for further analysis.

Alternative 2 has the ability to address highway capacity problems and improve pedestrian and bicycle facilities in the corridor, but also results in what may be the most costly property impacts, potentially eliminating 40 to 50% of existing businesses abutting OR 99 between the Flat Creek Bridge and 3rd Avenue. While it may prove to be a viable alternative from most other aspects, it should be determined whether or not it would be reasonable to assume impacts of this type and magnitude would be accepted by the City before carrying this alternative forward for further consideration.

Alternative 3 was also unable to relieve traffic congestion on OR 99 and, therefore, should not be considered further. However, some elements could be incorporated into other alternatives to provide additional benefits by enhancing overall connectivity.

Alternative 4 has many positive characteristics including the ability to make use of existing public right-of-way, reducing turning conflicts, accommodating bicycle and pedestrian needs, providing opportunities for streetscape enhancements, including needed downtown parking, potentially reducing travel speeds, and possibly stimulating new development opportunities to help offset private

property impacts. As no potentially fatal flaws are known, it is recommended this alternative, as well as the option to extend it further to the south, be carried forward for further analysis.

Alternative 5 is likely to be very costly, but has the ability to mitigate all deficiencies. This alternative is also recommended for further consideration.

