

Chapter 6

Refined Alternatives Evaluation

As part of a previous task, five preliminary alternatives were identified for consideration to address area deficiencies. Each alternative was reviewed through a preliminary screening process and discussed with the Technical Advisory Committee (TAC), Citizen Advisory Committee (CAC), and the general public at an open house with the goal of forwarding no more than three alternatives for further analysis. The purpose of this technical memorandum is to describe and evaluate the three refined transportation alternatives for the OR 99 corridor in Junction City, using concept drawings, operational analysis, planning-level cost estimates¹, and the evaluation criteria and technical rating methods that were previously developed for this project.

Alternative Descriptions

The five preliminary alternatives that were considered to address the transportation needs in the OR 99 corridor through Junction City included:

- 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, including roads outside the existing urban growth boundary;
- Alternative 4: Juniper Street / Ivy Street Couplet²; and
- Alternative 5: OR 99 By-pass: OR 99E to OR 36.

Through a preliminary screening process and discussion of alternative characteristics with members of the TAC and CAC, as well as with the general public at an open house meeting, three new alternatives were created for further analysis using elements of each alternative that were desirable or projected to perform well under future conditions. The three refined alternatives are described below.

Alternative A: Juniper/Ivy Couplet

Alternative A includes the proposed Juniper/Ivy couplet and optional southern extension from Preliminary Alternative 4 in combination with the supportive local system improvements from Preliminary Alternative 3. As illustrated in Figures 6-1 and 6-2, this alternative would change traffic circulation along the OR 99 corridor through much of the City by replacing 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

¹ Planning-level cost estimates are approximates and are intended to identify the appropriate magnitude of actual costs to guide project funding. These costs are based on available mapping and non-survey-grade field measurements with aggregate unit costs for construction of roadway elements developed from actual costs experienced on past construction projects.

² Alternative 4 included 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.

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 right-of-way along Juniper Street. As shown in Figure 6-1, OR 99 would be constructed to fit within the existing 60-foot right of ways along Ivy Street and Juniper Street, using a design speed of 30 mph (posted speed of 25 mph) and would 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), and
- 2 sidewalks (11 feet wide each).

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. Because the surrounding area is fully developed, the extension of Juniper Street was shifted to the west to minimize impacts to development and to take advantage of existing public right of way. Therefore, from 3rd Avenue, the southbound lanes of Juniper Street 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 roadbed through the entire corridor north of 1st Avenue. However, south of 1st Avenue, the northbound lanes would be shifted to the east to run adjacent to the eastern right of way line abutting the Burlington Northern Santa Fe (BNSF) property. This eastward shift of the northbound lanes uses existing highway right of way to create a divided highway that would merge back to match the existing highway approximately ¼-mile north of the intersection with Prairie Road. The distance of separation between the northbound and southbound roadbeds varies, but could be as great as 125 feet. Directional median openings would be provided to allow for U-turns and improved access to properties adjacent to the highway. Given the change in roadside environment from downtown to highway commercial and industrial, a higher design speed of 40 mph (posted 35 mph) was used for the divided highway section, resulting in the elimination of on-street parking and a small reduction in overall roadbed width compared to the northern section.

Within the area of the proposed divided highway, there are currently two properties between the BNSF and UPRR lines south of 1st Avenue, which take direct access to OR 99 via long private driveways (approximately 200 feet long). When the highway is shifted to the east and brought closer to the BNSF line, these driveways will be reduced in length considerably, with rail crossings very close to the northbound lanes of the highway. When the crossings are blocked by trains, vehicles attempting to enter these sites, which may include large trucks associated with the industrial uses, would queue on the highway. To prevent this, consideration should be given to either providing wide

shoulders or right-turn lanes in the vicinity of these access points to provide enough storage to keep queued vehicles out of travel lanes during train blockages.

Improvements to Local Facilities

To supplement improvements within the OR 99 corridor itself, Alternative A could include improvements that would extend, realign, and increase the capacity of County roads surrounding the City to enhance connectivity and provide alternative routes to OR 99. New and upgraded roads would be constructed to County Collector standards. 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, a statewide land use Goal 3 (Agriculture) exception could be required unless certain criteria for land use approval are met or the area is first brought into the urban growth boundary. The locations of proposed improvements are illustrated in Figure 6-3. The cross-sections of these roadways would include:

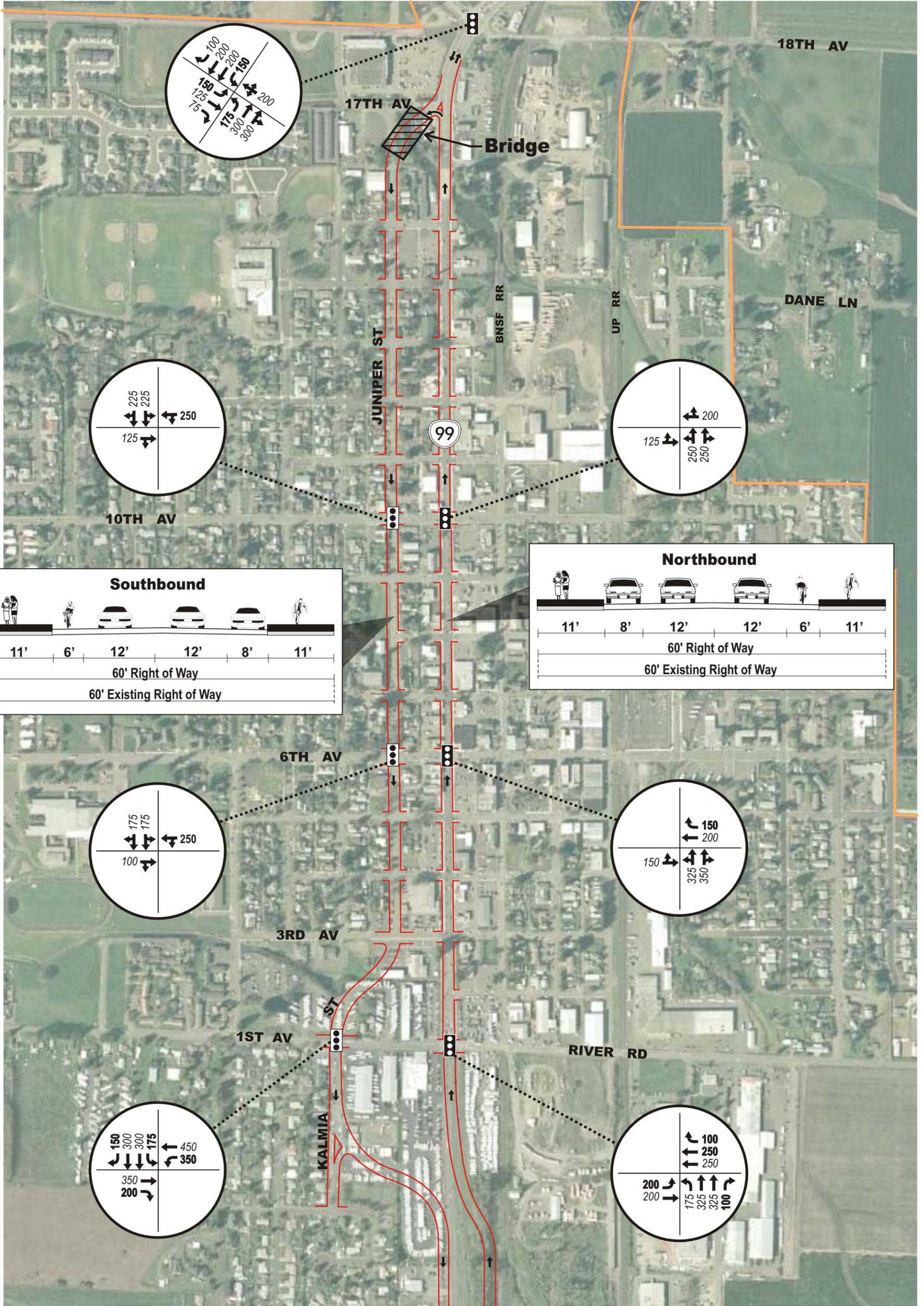
- 2 travel lanes (12 feet wide each) and
- 2 shoulders (6 feet wide each).

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. However, the realigned section of Pitney Lane would impact rural lands and may require a statewide land use Goal 3 (Agriculture) exception unless the surrounding area is first brought into the urban growth boundary, or criteria for land use approval are met.

Prairie Road (east of OR 99) would be realigned to remove the skewed Union Pacific Railroad (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, which would require obtaining a crossing permit from ODOT Rail. As the extension of Prairie Road continues northward, it would veer east, close to or within the City’s urban growth boundary, and intersect with River Road. This route would further enhance north-south connectivity by providing an alternative to River 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, an exception to statewide land use Goal 3 (Agriculture) may be necessary unless criteria for land use approval are met, or the surrounding area is first brought into the urban growth boundary. It should also be noted that additional discussions related to the conflict between ODOT rail crossing policy and possible impacts to rural lands and technical analysis of alternatives to address the congestion at 1st Street and OR 99 will be necessary before the Prairie Road extension can be supported as the sole preferred alternative. While completing this additional work is not necessary prior to adoption of this refinement plan, ODOT is committed to resolving this issue as soon as possible.

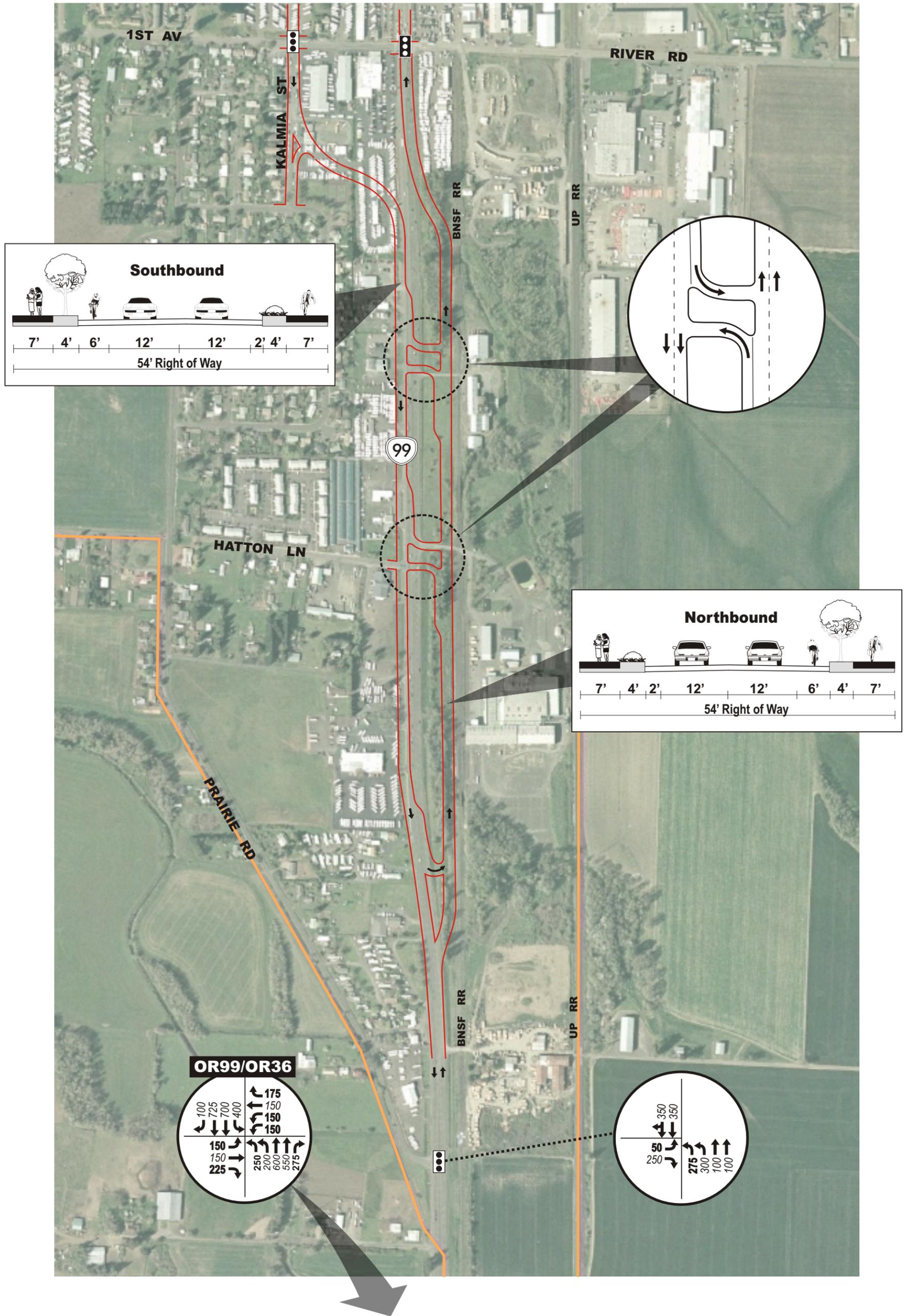
LEGEND

-  - Couplet Alignment
-  - Urban Growth Boundary (UGB)
-  - Potential New Traffic Signal
-  - Existing Traffic Signal
-  - Approach Lane
-  - 95th Percentile Queue (feet)
-  - Bold Type Indicates Extended Storage or New Lane Needed
-  - Free Movement, No Queue



LEGEND

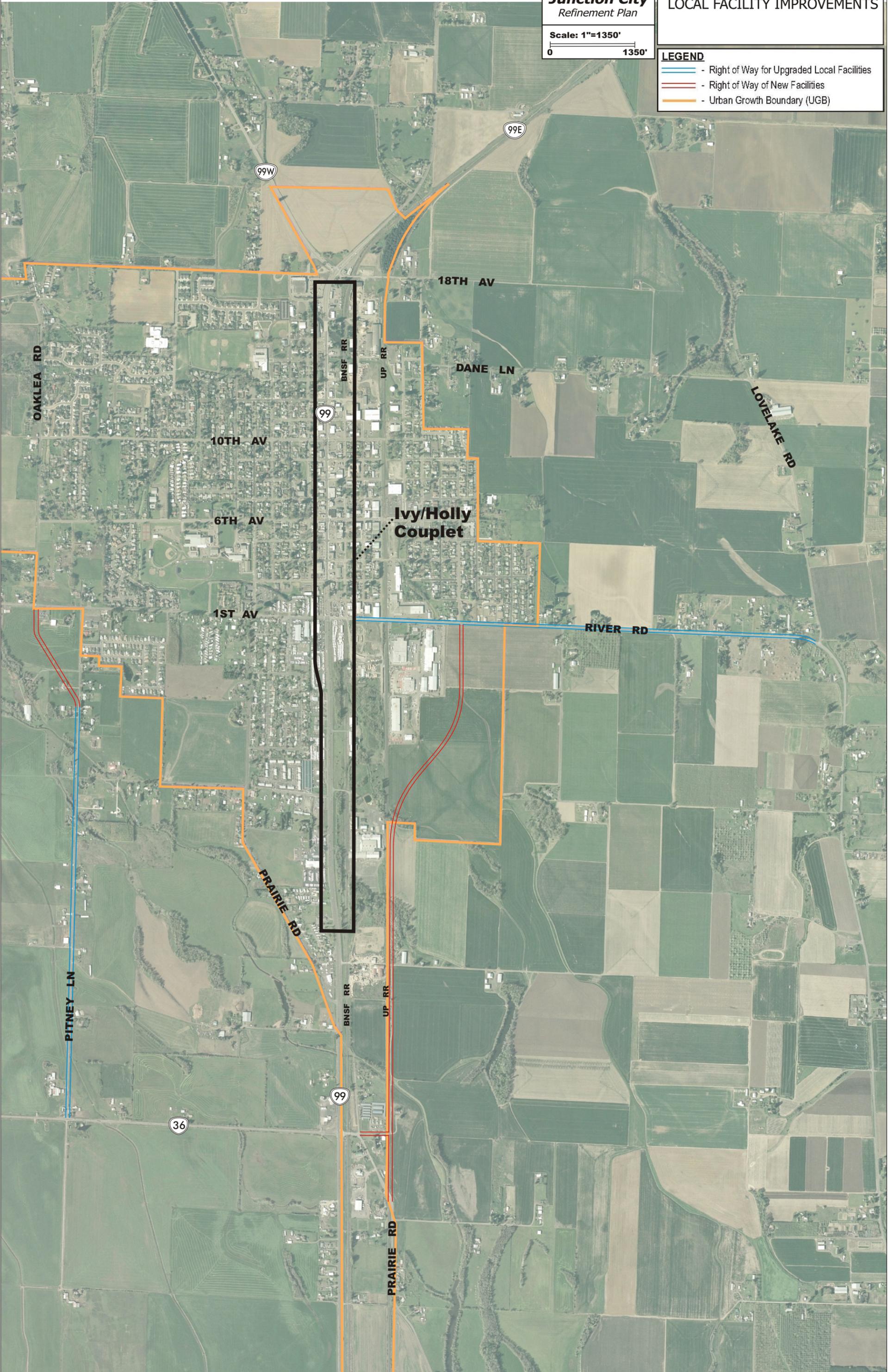
- - Couplet Alignment
- - Urban Growth Boundary (UGB)
- Potential New Traffic Signal
- Existing Traffic Signal
- Approach Lane
- 000 - 95th Percentile Queue (feet)
- 000** - Bold Type Indicates Extended Storage or New Lane Needed
- X - Free Movement, No Queue



Scale: 1"=1350'
0 1350'

LEGEND

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



East-side connectivity enhancements that may make the Prairie Road extension and the existing route along River Road more attractive include upgrades of River Road on the east side of the City from OR 99 to Lovelake Road. These enhancements would generally include widening to increase shoulder widths, making the roadway more comfortable for motorists and bicycles.

As noted above, many of the local facility improvements are partially outside the existing urban growth boundary but would mostly serve urban uses. To the extent that state land use law restricts accommodating urban development and the proposed facilities on rural lands, it is understood that some or all of the improvements may not be able to be implemented unless criteria for land use approval are met, or until such time as the Junction City urban growth boundary is expanded or the City obtains an exception to statewide land use Goal 3 (Agriculture).

Alternative B: Ivy/Holly Couplet

Like Alternative A, Alternative B would convert OR 99 to a one-way couplet system through Junction City in addition to supportive improvements to local facilities. However, Alternative B assumes that the BNSF railroad would be relocated or discontinued prior to construction, allowing the routing of OR 99 over Holly Street instead of Juniper Street. Ivy Street would be utilized by southbound travel while Holly Street would carry northbound travel. Alternative B is illustrated in Figures 6-4 and 6-5.

While many of the elements included in Alternatives A and B are very similar, one key difference is the northern terminus of the couplet. Under Alternative B, the northbound roadbed of the OR 99 couplet would follow the BNSF railroad alignment until about 16th Avenue, where it would veer to the east and return to align with OR 99W to become the fourth leg of the existing OR 99W/OR 99E intersection. This would require a realignment of 18th Avenue from the UPRR crossing to intersect with the northbound couplet roadbed rather than the OR 99W/OR 99E intersection as it does under existing conditions. Under this scenario, the existing alignment of OR 99 would accommodate only southbound traffic south of the OR 99W/OR 99E intersection.

Another key difference between Alternatives A and B is the alignment of the couplet roadbeds in the vicinity of 1st Avenue. As shown in the provided figures, under Alternative B the highway alignment remains straight. While this eliminates the need for significant private property impacts, it also locates the signalized intersections on 1st Avenue closer together, reducing available distance needed for queue storage.

Finally, with the BNSF railroad removed, the section of divided highway south of 1st Avenue could be constructed with a greater distance between the roadbeds, potentially improving the potential of the land in between to be used for future development. However, if allowed to develop, direct access to the highway from new development will be required to meet the access spacing standards in the Oregon Highway Plan and OAR 734-051.

The highway cross-sections and design speeds are essentially the same as proposed under Alternative A, with the design speed and cross-section changing at the intersections with 1st Avenue. A design speed of 30 mph (posted 25 mph), allowing for on-street parking, would be provided for north of 1st Avenue, with an increase to 40 mph (posted 35 mph) and the prohibition of on-street parking south of 1st Avenue.

Improvements to Local Facilities

Alternative B would include the same improvements to County roadways described previously for Alternative A. As noted previously, some local improvements are shown to occur partially outside the existing urban growth boundary. To the extent that state land use law restricts accommodating urban development and the proposed facilities on rural lands, it is understood that some or all of the improvements may not be able to be implemented unless criteria for land use approval are met, or until such time as the Junction City urban growth boundary is expanded or the City obtains an exception to statewide land use Goal 3 (Agriculture).

Alternative C: OR 99 By-pass

Alternative C includes several components of improvements to the transportation system. The primary component is 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 6-6, with additional detail around the proposed interchange areas provided in Figures 6-7 and 6-8. Other changes include improvements to Pitney Lane and a modification to the section of OR 99 through downtown Junction City (which would then be referred to as the OR 99 Business Route) to include one travel lane and one bicycle lane in each direction as well as a center turn lane.

OR 99 By-pass

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.

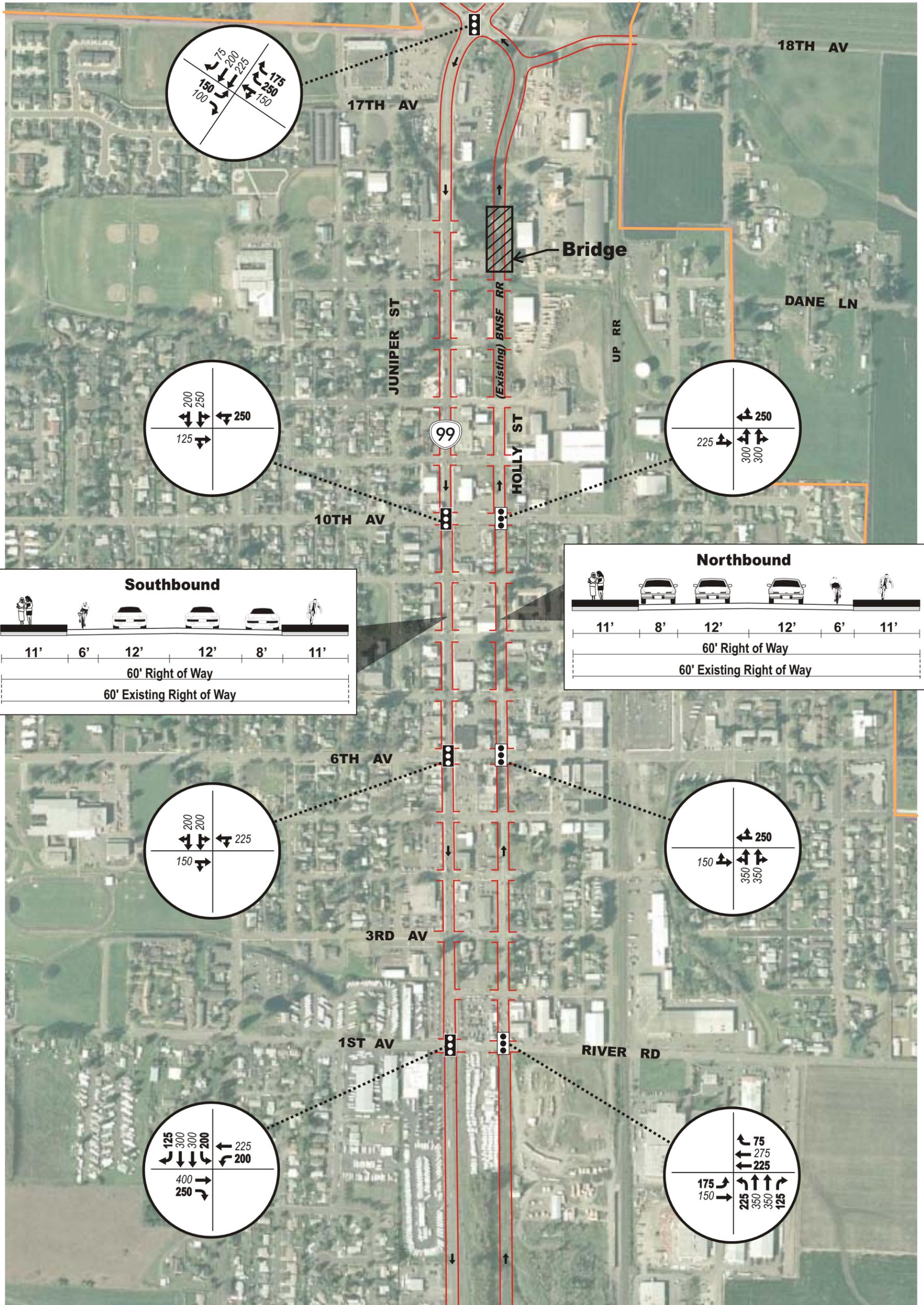
OR 99 would then be elevated to cross over the UPRR and BNSF railroads before returning to grade to take over the existing OR 99E alignment, where the second interchange would be constructed. To accommodate the interchange, the connection between OR 99E and OR 99W would be relocated by cutting off the existing OR 99E alignment south of the interchange and constructing a realignment of OR 99W near the City's northern urban growth boundary.

The illustrations in Figures 6-6 through 6-8 were drawn to accommodate a 70 mph design speed on the realignment of OR 99. The new alignment would require a 44-foot cross-section (wider if median barrier is required), which would be composed of the following:

- 2 travel lanes (12 feet wide each) and
- 2 shoulders (10 feet wide on each side).

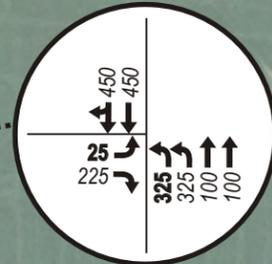
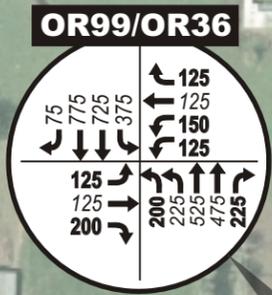
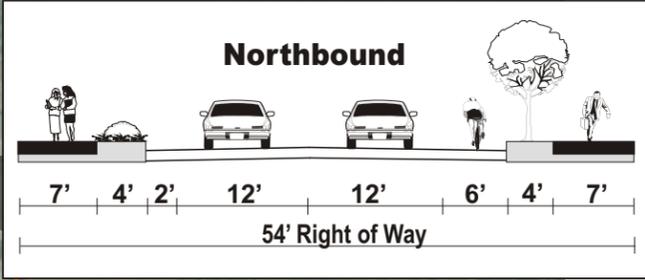
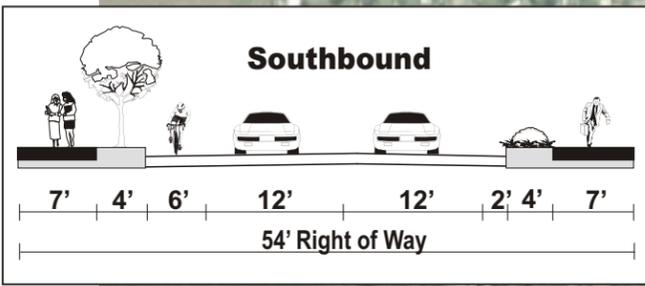
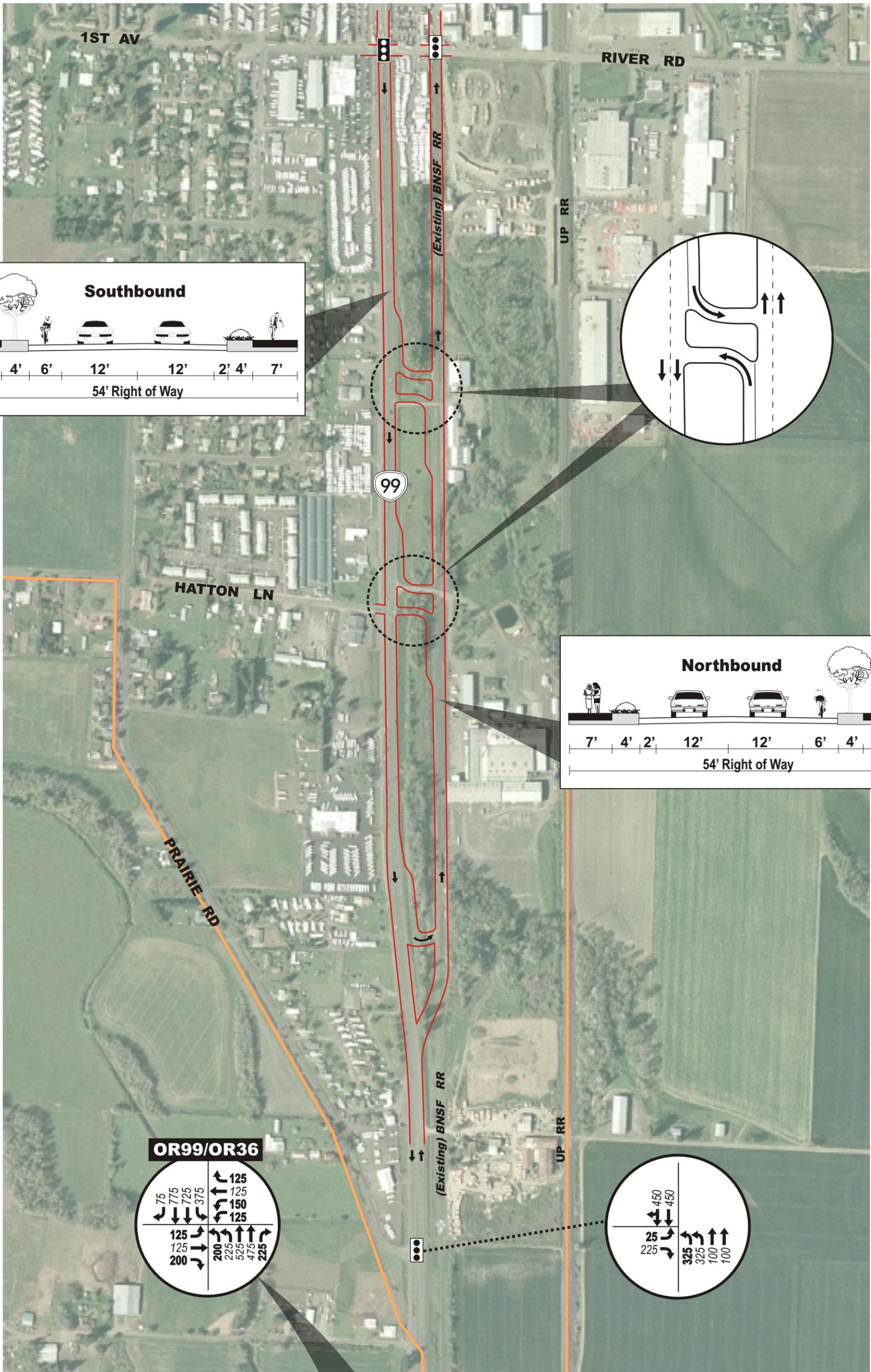
LEGEND

- - Couplet Alignment
- - Urban Growth Boundary (UGB)
-  - Potential New Traffic Signal
-  - Existing Traffic Signal
-  - Approach Lane
- 000 - 95th Percentile Queue (feet)
- 000** - Bold Type Indicates Extended Storage or New Lane Needed
- X - Free Movement, No Queue



LEGEND

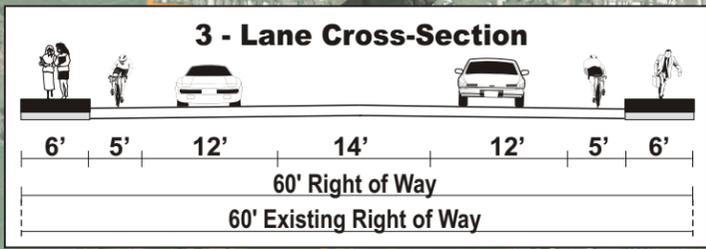
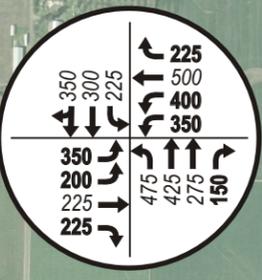
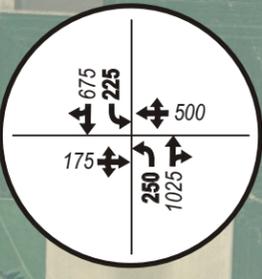
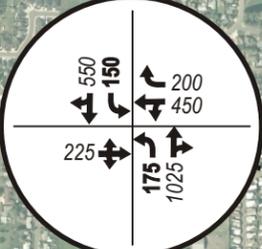
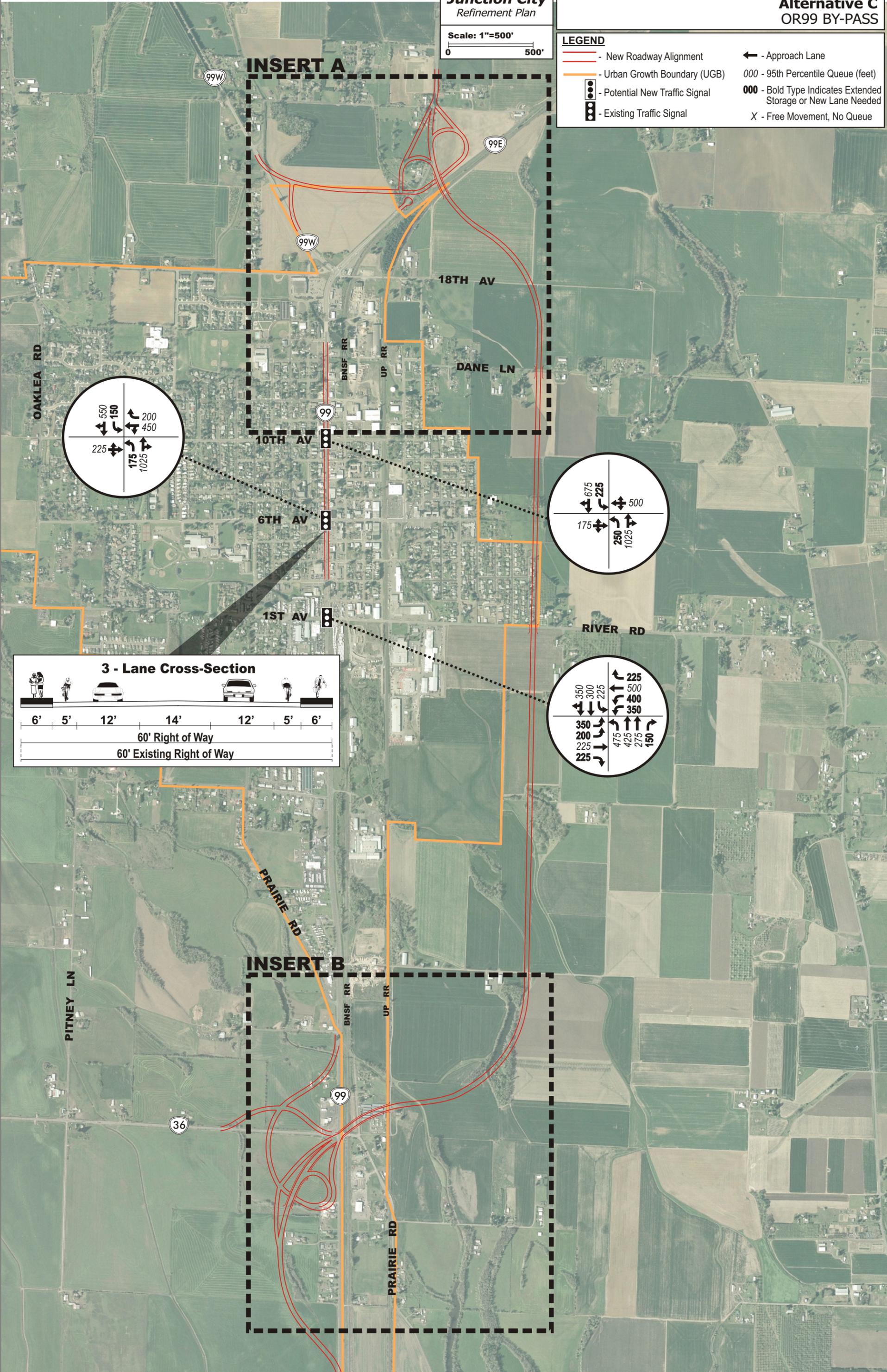
- - Couplet Alignment
- - Urban Growth Boundary (UGB)
- Potential New Traffic Signal
- Existing Traffic Signal
- Approach Lane
- 000 - 95th Percentile Queue (feet)
- 000** - Bold Type Indicates Extended Storage or New Lane Needed
- X - Free Movement, No Queue



Scale: 1"=500'
0 500'

LEGEND

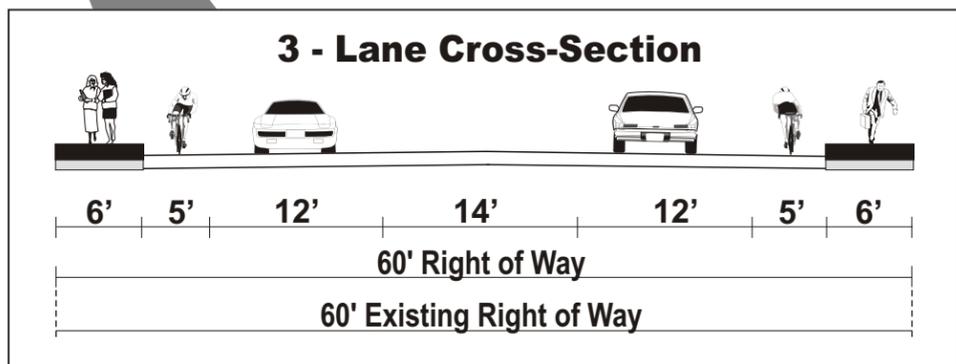
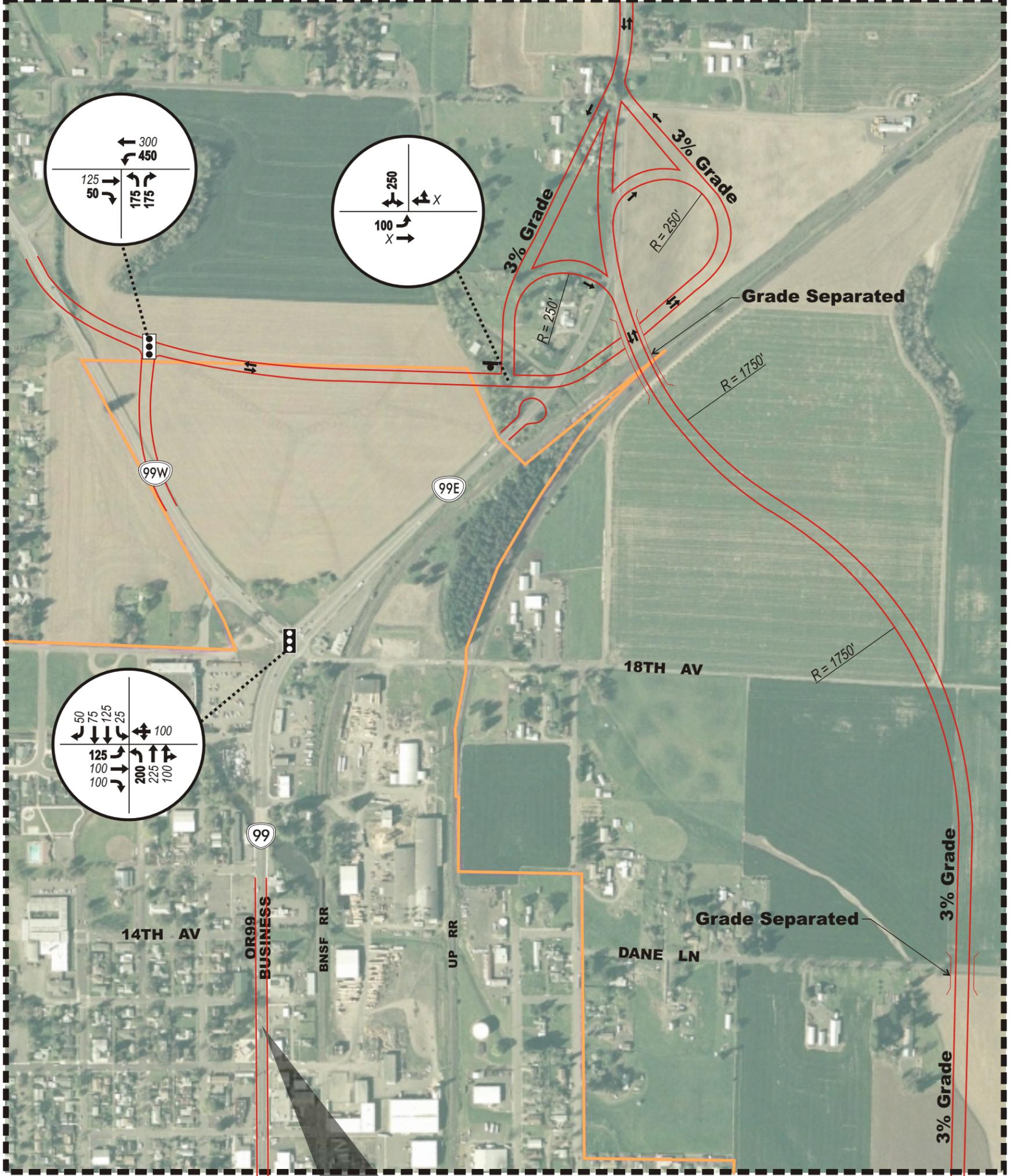
- - New Roadway Alignment
- - Urban Growth Boundary (UGB)
- Potential New Traffic Signal
- Existing Traffic Signal
- Approach Lane
- 000** - 95th Percentile Queue (feet)
- 000** - Bold Type Indicates Extended Storage or New Lane Needed
- X - Free Movement, No Queue



LEGEND

- - New Roadway Alignment
- - Urban Growth Boundary (UGB)
- Potential New Traffic Signal
- Potential New Stop Sign
- Existing Traffic Signal
- Approach Lane
- 000 - 95th Percentile Queue (feet)
- 000** - Bold Type Indicates Extended Storage or New Lane Needed
- X - Free Movement, No Queue

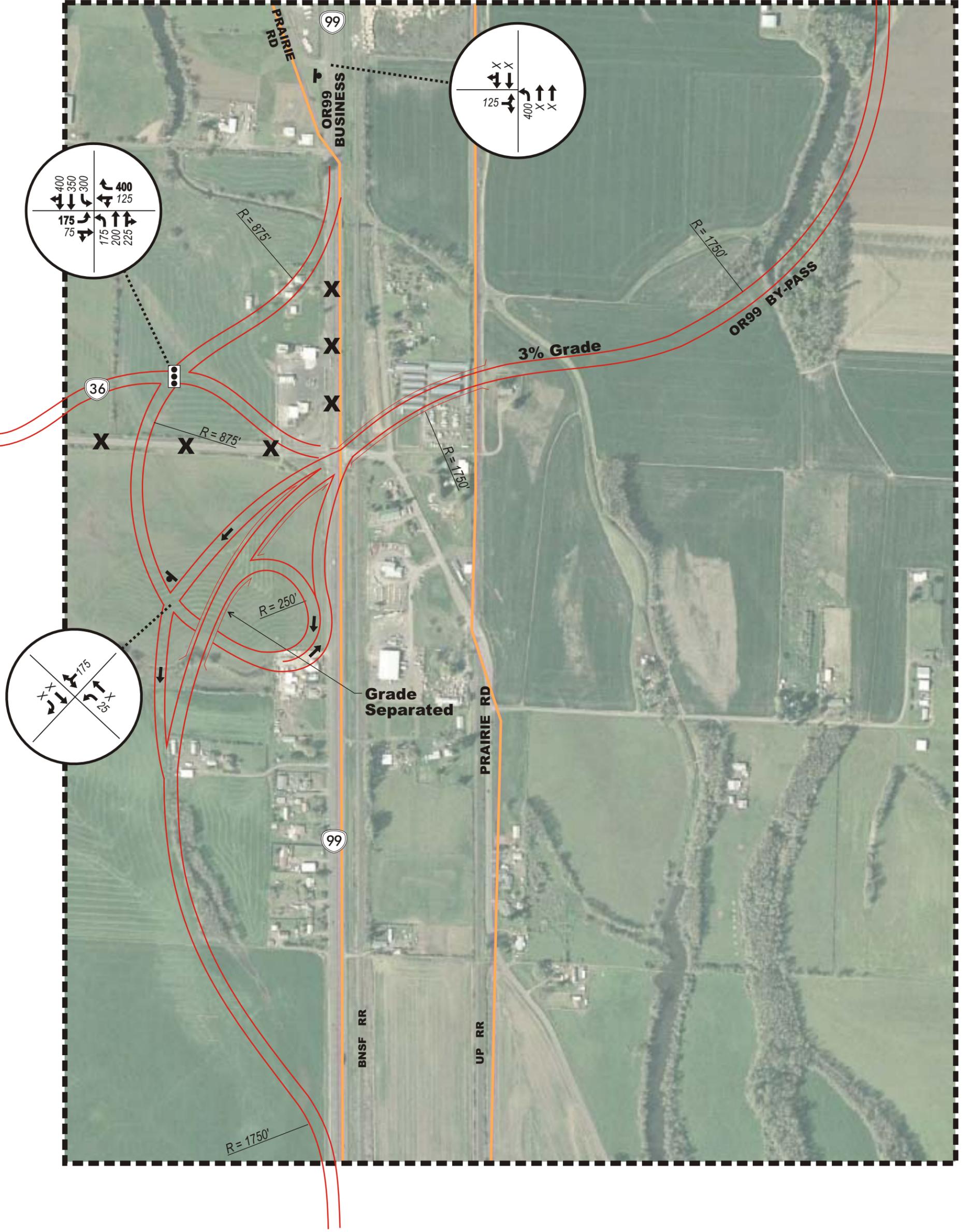
INSERT A



LEGEND

	- New Roadway Alignment		- Approach Lane
	- Urban Growth Boundary (UGB)	<i>000</i>	- 95th Percentile Queue (feet)
	- Potential New Traffic Signal	000	- Bold Type Indicates Extended Storage or New Lane Needed
	- Potential New Stop Sign	X	- Free Movement, No Queue
	- Existing Traffic Signal		
	- Existing Road to be Closed		

INSERT B



Modification to Existing OR 99 Alignment

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. With a significant amount of traffic diverted to the by-pass, the OR 99 business route could be modified to improve safety and multi-modal travel through the downtown area. The existing 60 feet of right of way could be re-stripped 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).

Figure 6-6 shows the proposed extents of the three-lane section on the OR 99 business route, 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 roadway crossing opportunities. Pedestrian crossing for the visually impaired could further be enhanced through the provision of audible pedestrian signals at all signalized intersections.

Improvements to Pitney Lane

The third component of this alternative includes improvements to Pitney Lane that would extend, realign, and increase the capacity of the roadway to enhance connectivity and provide an alternative route to OR 99. 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 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. The cross-sections of Pitney Lane would include:

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

As with other alternatives, improvements included with Alternative C that are shown to be outside the existing urban growth boundary will not be constructed unless and until such time as the Junction City urban growth boundary is expanded to include these lands, or until the City obtains any required land use approvals or an exception to statewide land use Goal 3 (Agriculture).

Motor Vehicle Operational Performance

By employing the same analysis tools as were used to measure the operational performance of OR 99 under future No Build conditions, the operational performance of each of the proposed alternatives were evaluated for comparison purposes. The analysis methodologies and results are described below.

Future Alternative Traffic Volumes

To forecast traffic volumes that would be present on the area transportation system in the year 2026 with each alternative in place, a similar methodology as that used to forecast future No Build volumes was used. For each alternative, LCOG created a new scenario in the Junction City transportation demand model with representative improvements made to the transportation system. However, rather than comparing changes occurring between the base year (2006) and future year (2026) scenarios in the model, volumes for each alternative were derived by comparing changes occurring between each alternative scenario for the 2026 and the 2026 No Build scenario.

Using the incremental changes in area traffic volumes from the model, the post-processing techniques from NCHRP Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*³ were again used to forecast actual design hour volumes. Because significant new north-south roadways were being added with each alternative scenario, screenlines were also used to track volume diversions between major transportation corridors and identify potential over or under-assignments.

As design hour volumes were developed for each alternative, key differences in traffic diversions related to each one were noted as described below.

- As each alternative was implemented, the total volume of north-south traveling traffic through the study area remained unchanged. The added capacity related to each alternative did not stimulate new demand. However, this may be due to the nature of the transportation model used, which was only developed as a city-wide, rather than region-wide, model.
- East-west travel through the area was not significantly impacted by the alternatives, with the exception of 1st Avenue east of OR 99 and OR 36 from OR 99 to Pitney Lane. These segments were impacted by diversions in traffic that was ultimately heading north or south through the area that was caused by the improvements made to local facilities. As a result, 1st Avenue experienced a decrease in volume, whereas OR 36 experienced an increase.
- The use of improved local facilities (County roads) surrounding the City as alternate routes to OR 99 was much more prominent in the alternatives including couplets. With the by-pass alternative, there was no attraction to the enhanced Oaklea/Pitney corridor, which actually experienced a small decrease in use. Consequently, if the by-pass option is selected, local improvements to Oaklea/Pitney would not be required. However, if improvements were to move forward for implementation, the improvements to Oaklea/Pitney would not occur until the area was brought into the UGB. The two couplet-based alternatives experienced similar diversions to the improved local routes along the west and east sides of the City, with approximate usage as follows:

³ *Highway Traffic Data for Urbanized Area Project Planning and Design*, National Cooperative Highway Research Program, Report 255, TRB, Washington D.C., 1982.

- Oaklea Drive: OR 99W to High Pass Road – increase in volume of approximately 400 vph near OR 99W (55% increase), with approximately 500 new trips near High Pass Road (85% increase).
 - Pitney Lane: High Pass Road to OR 36 – increase in volume of approximately 350 vph (75% increase).
 - Prairie Road extension: River Road to OR 36 – increase in volume of approximately 575 vph (new facility).
- The extension of Prairie Road to River Road along the City’s eastern UGB provided an attractive option for trips associated with the employment area around the Country Coach property, diverting over 30% of those trips away from the intersection on OR 99 at 1st Avenue.
 - The by-pass diverted approximately 34% of traffic out of the existing OR 99 corridor (approximately 1,200 vph).

Intersection Operations

The study intersections were again analyzed using the new lane configurations, traffic controls, and traffic volumes associated with each alternative for comparison against applicable mobility standards from ODOT’s *2003 Highway Design Manual*.⁴ The Synchro model used for the analysis of future No Build conditions was modified to create new scenarios for each alternative, with v/c ratios and levels of service obtained for study intersections. The results for each alternative are displayed in Table 6-1 along with the applicable mobility standard. New lane configurations and traffic controls assumed for study intersections under each alternative are illustrated in Figures 6-1 through 6-8.

As shown, all alternatives are able to provide adequate operational performance at study intersections through 2026. Under Alternative C, the southbound ramp terminal of the north by-pass interchange would not meet mobility standards under the traffic control assumed, but would be very close (operates at 0.66 with standard requiring 0.65). To avoid installation of an unwarranted signal or implementation of an unusual stop sign control configuration, it may be preferable to seek a design exception than attempt to improve operations further. It should be noted that if the by-pass were constructed, the old alignment of OR 99 would likely be converted into a business route and transferred to City jurisdiction. As the City does not currently maintain a standard for transportation mobility, intersections along this route can not be evaluated for adequacy. However, many local agencies employ a mobility standard that requires intersection operation at a level of service D or better during the peak hour. Under such a standard, all study intersections under City jurisdiction would operate adequately.

⁴*Highway Design Manual*, Oregon Dept. of Transportation, Table 10-1, 2003 English.

Table 6-1: 2026 Alternative Design Hour Operations

Study Intersection	2026 Performance			Mobility Standard
	Delay (sec)	LOS	v/c	v/c
No Build Alternative				
Traffic Signal Control				
OR 99W & OR 99E	21.9	C	0.74	0.85
OR 99 & 10th Ave.	13.5	B	0.87	0.85
OR 99 & 6th Ave.	11.6	B	0.73	0.85
OR 99 & 1st Ave.	>80.0	F	>1.0	0.85
OR 99 & OR 36	58.2	E	>1.0	0.75
Stop Sign Control				
OR 99 & Prairie Rd.	>60.0	C/F	0.94*	0.80
Alternative A: Juniper/Ivy Couplet				
Traffic Signal Control				
OR 99W & OR 99E	24.4	C	0.68	0.75
Juniper St. & 10th Ave.	10.8	B	0.51	0.75
Ivy St. & 10th Ave.	8.1	A	0.56	0.75
Juniper St. & 6th Ave.	6.6	A	0.52	0.75
Ivy St. & 6th Ave.	10.9	B	0.57	0.75
Kalmia St. & 1st Ave.	21.1	C	0.60	0.75
Ivy St. & 1st Ave.	25.8	C	0.68	0.75
OR 99 & Prairie Rd.	15.3	B	0.62	0.75
OR 99 & OR 36	34.2	C	0.72	0.75
Alternative B: Ivy/Holly Couplet				
Traffic Signal Control				
OR 99W & OR 99E	19.1	B	0.64	0.75
Ivy St. & 10th Ave.	11.1	B	0.56	0.75
Holly St. & 10th Ave.	17.9	B	0.56	0.75
Ivy St. & 6th Ave.	10.4	B	0.54	0.75
Holly St. & 6th Ave.	13.4	B	0.61	0.75
Ivy St. & 1st Ave.	26.8	C	0.69	0.75
Holly St. & 1st Ave.	24.8	C	0.64	0.75

Table 6-1: 2026 Alternative Design Hour Operations (continued)

Study Intersection	2026 Performance			Mobility Standard
	Delay (sec)	LOS	v/c	v/c
Alternative B: Ivy/Holly Couplet (continued)				
OR 99 & Prairie Rd.	14.2	B	0.65	0.75
OR 99 & OR 36	30.3	C	0.70	0.75
Alternative C: OR 99 By-pass				
Traffic Signal Control				
OR 99 Business & 18th Ave.	14.1	B	0.49	NA
OR 99 Business & 10th Ave.	33.6	C	0.91	NA
OR 99 Business & 6th Ave.	24.7	C	0.88	NA
OR 99 Business & 1st Ave.	34.8	C	0.75	NA
OR 99 Business & OR 36	23.1	C	0.74	NA
OR 99W & OR 99 Business	10.9	B	0.72	0.75
Stop Sign Control				
OR 99 Business & Prairie Rd.	22.5	C/C	0.50**	NA
OR 99E SB ramp & OR 99W	17.5	-/C	0.66	0.65
OR 99 By-pass SB & OR 99 Business	20.8	-/C	0.21	0.65

Notes: LOS = Level of Service
 "A/A" refers to level of service of left turning traffic from major street and the average level of service of traffic turning from the minor street onto the major street.

Delay
 Average vehicle delay in seconds for all movements at signalized and four-way stop intersections. Minor street delay in seconds at unsignalized intersections.

v/c = Volume to capacity ratio of the intersection

* critical v/c is on eastbound right turn.

** critical v/c is on northbound left turn.

NA = Not Applicable - OR 99 Business Route would be transferred to Junction City. Junction City does not have standards for transportation mobility.

Black background and bold type indicates mobility standard is not met.

Vehicle Queuing

Under No Build conditions in 2026, vehicle queues along the OR 99 corridor were very long, with southbound queues extending from 1st Avenue through the OR 99W/OR99E intersection. Using SimTraffic, as was done for No Build conditions, queuing at study intersections was again examined to assess the ability to adequately store queued vehicles and avoid spillback into adjacent intersections. Anticipated 95th percentile queues for all study intersection movements are shown in Figures 6-1 through 6-8.

Under Alternatives A and B, queues along OR 99 are dramatically reduced in the couplet areas. In particular, the southbound queues that extended from 1st Avenue to OR 99W under No Build conditions are reduced to only one to two blocks. When couplets are created, careful attention should be given to the ability to accommodate queued vehicles on cross-streets between sides of the couplet, as any spillback could impact safety and operations on the highway. Under both Alternatives A and B, anticipated queues on 10th Avenue and 6th Avenue between the northbound and southbound sides of the couplet would exceed available storage by approximately one vehicle length during the peak hour. While modifications to signal timing or phasing could be implemented to better manage these queues, it may require small reductions in operational efficiency along the OR 99 corridor.

At 1st Avenue, where traffic volumes are much higher, side-by-side left turn pockets will be needed to keep queues from spilling back into the highway. Even with side-by-side left turn pockets the available storage between sides of the couplet will barely be adequate under Alternative B, where these intersections are only one block apart.

With the by-pass in place under Alternative C, traffic volumes along the OR 99 business route would be reduced compared to the No Build condition, but the conversion of OR 99 to a three-lane section from the Flat Creek Bridge to 3rd Avenue will also reduce capacity. While queues along the business route would generally be lower than under the No Build condition, there would still be long queues of over four blocks in length in the northbound direction.

Travel Time

To help measure the effectiveness of each alternative at improving overall mobility through the OR 99 corridor, travel times and speeds were measured from simulations of corridor operations using SimTraffic. For each alternative, five different simulations of peak hour operations were recorded, with the results of each averaged. For the No Build alternative and Alternatives A and B, travel times were measured between the OR 99W/OR 99E intersection and the OR 99/ OR 36 intersection. For Alternative C, travel times were measured between the new interchanges to be located at the north and south ends of the by-pass.

As shown in Table 6-2, the by-pass clearly provides the most improved travel times and speeds though the corridor. Of course, these improvements will be provided primarily to regional traffic passing through the area with lesser improvements experienced on the business route, whose primary objective would now be to serve local traffic.

Under No Build conditions, northbound travel was significantly less congested than southbound travel, as was evidenced by the much longer southbound vehicle queues. With Alternatives A or B in place, travel time in both directions is significantly improved, with northbound reductions of 28% and 19% and southbound reductions of 34% and 36%, respectively. It should be recognized that

Alternatives A and B both provide improved travel times and speeds through the study area, despite the proposed implementation of lower posted speed limits.⁵

Table 6-2: OR 99 Corridor Travel Times (2026)

Alternative	NB Travel Time	NB Speed	SB Travel Time	SB Speed
No Build	8 min. 15 sec.	21 mph	10 min. 47 sec.	14 mph
Alt. A: Juniper/Ivy Couplet	5 min. 54 sec.	26 mph	7 min. 7 sec.	22 mph
Alt. B: Ivy/ Holly Couplet	6 min. 47 sec.	23 mph	6 min. 54 sec.	23 mph
Alt. C: OR 99 By-pass	5 min. 20 sec.	43 mph	6 min. 1 sec.	38 mph

Travel Time taken from OR99W/ OR 99E intersection to OR 99/ OR 36 intersection for No Build and Alts A and B.

Travel Time taken from north interchange to south interchange for Alt C.

Signal Progression

The ability to maintain good progression of traffic through traffic signals assumed to be in place along OR 99 under each alternative should not be significantly impacted by proposed signal locations. Compared to No Build conditions, the only signal changing north-south signal spacing would be the new signal at OR 99/Prairie Road under Alternatives A and B. However, as this signal would still be over 2,000 feet away from the closest signal at OR 99/OR 36, the ability to maintain good progression of traffic should not be compromised. It should be noted that any proposed signals must meet signal warrants and receive approval of the State Traffic Engineer before installation can occur.

The biggest impact on traffic progression would be experienced in the downtown area with Alternatives A and B, which create a couplet system along OR 99. One factor is the close signal spacing in the east-west direction resulting from splitting the highway into two separate roadbeds one block apart (approximately 275 feet). Because of this close spacing, the east and west approaches may require more green time than would ordinarily be assigned to them to keep vehicles queues from spilling back into the northbound and southbound directions of the highway.

The other factor could be related to the desired cycle lengths assigned to signals at 10th Avenue, 6th Avenue, and 1st Avenue. Because the intersections on OR 99 at 1st Avenue serve higher traffic volumes, a higher cycle length of 90 seconds is needed to adequately accommodate traffic and meet mobility standards. However, at the intersections on OR 99 at 10th Avenue and 6th Avenue, lower cycle lengths closer to 60 seconds can accommodate the lesser traffic demands and may be more desirable to provide less delay for pedestrians within the downtown area. If operating at different cycle lengths, the adjacent signalized intersections on OR 99 at 6th Avenue and 1st Avenue, which are approximately 1,500 feet apart, could not provide consistent progression of traffic.

⁵ Posted speeds were assumed to be lowered for this analysis based on the proposed design speeds of improvements. The actual posted speeds will need to be determined through a speed zone investigation after all improvements are in place.

Other Modes

Because the objectives of this project also include making improvements to pedestrian, bicycle, and transit transportation, the impact on each of these modes related to each alternative is evaluated below.

Pedestrian Impact

With the couplet section of Alternatives A and B, 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. It should be recognized that because OR 99 is designated as a Freight Route, the design of any curb bulb-outs must not impede the movement of heavy vehicles.

South of 1st Avenue, where the couplet transitions into a divided highway, sidewalks would continue to be provided, with buffers created by a bike lane and landscape strips. Unsignalized crossing opportunities could be provided, allowing pedestrians to cross each two-lane section of one-way highway separately. However, bulb-outs at crossing locations are not recommended in this area given the higher traffic speeds anticipated.

Most improvements related to Alternative C are associated with the by-pass, which would include shoulders, but no sidewalks. However, the improvements made to the OR 99 business route between the Flat Creek Bridge and 3rd Avenue, including the conversion of the highway to a three-lane section with bike lanes, will enhance pedestrian travel in that section by providing a buffer between cars and pedestrians with the bike lanes and the ability to provide pedestrian refuges in the median.

Bicycle Impact

Alternatives A and B would construct dedicated bike lanes from south of the OR 99W/OR 99E intersection to north of Prairie Road, where they would join existing bicycle shoulders. This would fill an existing gap in the bicycle system from the Flat Creek Bridge to 3rd Avenue. Bicycle crossings of OR 99 would also be facilitated by creating shorter crossings of one-way traffic where the highway is split into two separate roadbeds.

Alternative C would provide shoulders adequate for bicycle travel along the length of the by-pass, as well as filling in the existing gap in the bicycle system from the Flat Creek Bridge to 3rd Avenue where the OR 99 business route would be improved to include bike lanes.

Transit Impact

The slower highway speeds and wider sidewalks may also create a more conducive environment for bus stops through the couplet that would be created by Alternatives A and B, allowing for direct access to adjacent businesses. The additional sidewalk widths may provide opportunities to supplement bus stops with shelters and benches. Within the low-speed, multi-lane, one-way sections,

bus pullouts would not be necessary. Bus pullouts are not included in the proposed highway cross-section and are not desired by the Lane Transit District.

Alternative C would not provide any benefits for transit operations. In fact, within the new cross-section between the Flat Creek Bridge and 3rd Avenue, bus stops could not be allowed.

Freight Impact

As OR 99 has been designated as a Freight Route by the Oregon Department of Transportation, any improvements in this corridor must accommodate freight movement. Also, according to ORS 366.215, the vehicle-carrying capacity of freight routes can not be permanently reduced unless the reduction is necessitated to address highway safety or access needs. Exemptions are allowed where a finding is made by the commission that the reduction is in the best interest of the state and that freight movement is not unreasonably impeded as a result.

The concept drawings for Alternatives A and B, shown in Figures 6-1, 6-2, 6-4, and 6-5, provide highway alignments and widths in accordance with ODOT's *Highway Design Manual*, with design speeds no lower than 30 mph. While the current posted speed through the downtown area is 30 mph compared to the proposed posted speed of 25 mph, operational analysis of Alternatives A and B have shown that intersection operations and overall corridor travel times would improve as a result. Therefore freight mobility would be facilitated by these alternatives.

If Alternative C were constructed, the freight route designation would likely be removed from the OR 99 business route and applied to the new by-pass. The concept drawings shown in Figures 6-6 through 6-8 provide highway alignments and widths in accordance with ODOT's *Highway Design Manual*, with design speeds no lower than 70 mph. As traffic traveling along the by-pass would not be required to stop, delays for freight traveling through the area would be very low.

Rail Impact

With two railroad lines running parallel to OR 99 to the east, there is significant potential for any transportation improvement in this corridor to result in the need for a new or modified railroad crossing. As the need to obtain approval for a crossing order from the rail owner would add a significant amount of complexity and uncertainty to any project, the anticipated impacts to rail lines associated with each alternative should be considered during the evaluation process.

In Alternative A, the couplet north of 1st Avenue would move highway traffic to the west of the existing right of way on Juniper Street. Therefore, there would be no railroad impacts in this area. However, at 1st Avenue, the BNSF railroad crossing would be impacted by the construction of a second westbound through lane and a westbound right turn lane for traffic heading northbound on OR 99.

South of 1st Avenue, the highway would shift to the east closer to the BNSF railroad. While the highway would remain within existing right of way, the roadway itself would be much closer to the railroad. This closer proximity would impact two existing rail crossings associated with access to private properties by eliminating the available vehicle storage used when trains block the driveways. However, this could be mitigated by the provision of wide shoulders in the proximity of the driveways for vehicle storage during such events.

Finally, the BNSF crossing at Prairie Road, opposite OR 36, would also be impacted by widening needed to accommodate additional turn lanes at the OR 99/OR 36 intersection.

Alternative B is based on the assumption that the BNSF railroad is no longer in use and has been removed. Therefore, the routing of the northbound lanes of OR 99 up the existing BNSF rail line would have no rail impacts at that time. However, the realignment of 18th Avenue to intersect with the northbound side of the couplet may require the approval of a crossing order as improvements would occur at or near (within 500 feet) the crossing on 18th Avenue with the UPRR line.

The improvements proposed to County roads surrounding the study area that would be included as part of both Alternatives A and B would also have railroad impacts at the existing crossings on River Road and Prairie Road. While the River Road impacts may be minor, potential including only shoulder widening, they may be enough to require approval of crossing orders for the BNSF and UPRR railroads.

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.

The alignment of the by-pass in Alternative C would include crossings of the BNSF and UPRR lines at the north and south ends of the study area, but each would be grade-separated with the highway passing over the top on a structure. Also, the BNSF railroad crossing on 1st Avenue would be impacted by the construction of needed turn lanes on the westbound approach of the OR 99/1st Avenue intersection.

Property and Environmental Impacts

As each alternative includes the construction of transportation facilities in different locations of the study area, many of which occur outside of the existing highway right of way, the impact of each alternative on surrounding properties is examined for consideration.

Private Property Impacts

One of the key features of the couplets in Alternatives A and B is the use of existing public right of way and local streets for new transportation improvements, which reduces the need for property acquisition and creates less new impermeable surface. However, even the conversion of adjacent City streets into new highway lanes will require the purchase of some properties, either in part or in full.

At the north end of the Juniper/Ivy couplet (Alternative A), the realignment of the southbound lanes to join Juniper Street will require purchasing the property bounded by 17th Avenue, OR 99, 16th Avenue, and Juniper Street. A significant amount of additional property will be needed south of 3rd Avenue, where Juniper Street currently ends, to connect Juniper Street to Kalmia Street at 1st Avenue and connect back to the OR 99 corridor south of 1st Avenue. Once rejoined with the OR 99 corridor, no additional right of way is anticipated to be needed within the divided highway section. However, more property acquisitions will be necessary surrounding the 1st Avenue and OR 36 intersections where approaches are to be widened to accommodate new lanes.

At the north end of the Ivy/Holly couplet (Alternative B), the northbound travel lanes will follow the existing BNSF alignment, but will shift to the east north of 15th Avenue to obtain an appropriate angle of approach for intersecting the highway opposite OR 99W. Additional property impacts will occur south of 18th Avenue where this roadway would be realigned to intersect with the northbound side of the couplet.

To the south, property impacts would be considerably less than under Alternative A, as the use of the BNSF property can accommodate the remainder of the couplet and divided highway sections. However, much like Alternative A, more property acquisitions will be necessary surrounding the 1st Avenue and OR 36 intersections where approaches are to be widened to accommodate new lanes.

The proposed improvements to County roadways and the by-pass included as part of Alternative C will require a substantial amount of private property impacts and land acquisitions to accommodate the construction of new roadways where none exist today. While there would be few impacts to existing development and buildings as much of this land is currently used for farmland, the quantity of land needed will be significant.

In addition to private property impacts associated with acquisitions, many properties may benefit from improvements made, such as the provision of on-street parking in the couplets to supplement on-site parking, which is limited in many areas. Furthermore, the construction of the couplets in Alternatives A and B or the three-lane conversion from the Flat Creek Bridge to 3rd Avenue in Alternative C may provide opportunities to implement streetscape enhancements that would beautify the corridor and create a more attractive pedestrian environment in the downtown.

Finally, construction of the Juniper/Ivy couplet may create both negative and positive property impacts related to existing land uses on Juniper Street and potential for redevelopment. The increased traffic from routing southbound OR 99 onto Juniper Street could negatively affect existing residential uses. Because the land along Juniper Street is already zoned for commercial/residential uses, construction of the Juniper/Ivy couplet may induce commercial redevelopment of the Juniper Street corridor and extend activity in the west side of the downtown. This assumes, however, that there is sufficient commercial market capacity for significant downtown area expansion, which this plan has not assessed.

Environmental Impacts

As an in-depth environmental assessment of proposed alternatives was not within the scope of this study, the impact of potential improvements on environmentally sensitive areas was limited to the review of information that had previously been mapped for this area. For this exercise, maps of known wetland habitats were obtained from the U.S. Fish and Wildlife National Wetland Inventory.

For the improvements within the OR 99 corridor associated with Alternatives A and B, there does not appear to be any impacts to known wetlands. However, it should be noted that each alternative would require a new structure over Flat Creek at the north end of the couplet.

Existing wetlands are scattered around the City within the surrounding farmlands. The improvements proposed to County roads have the potential to impact these areas, but refinements in road alignments during the design process may help avoid them. The proposed extension of Prairie Road to River Road passes through an area with a moderate amount of wetlands, but they appear to be avoidable with changes in the roadway alignment.

The proposed by-pass alignment included in Alternative C would pass through or near several pockets of wetlands. Again, refinements to the alignment could minimize impacts. However, as the by-pass would likely be constructed with a higher design speed than the new County roads, curves in the alignment would need to be more gradual, making it more difficult to weave around these sensitive areas.

Cost Estimates

Using the concept drawings in Figures 6-1 through 6-8, **planning level** cost estimates for each alternative were calculated for comparison purposes. Estimated costs and key assumptions for each alternative are described below. Detailed cost estimation worksheets are provided in the appendix.

Alternative A: Juniper/Ivy Couplet	\$43.8 million
<u>Local Facility Improvements</u>	<u>\$41.9 million</u>
Total	\$85.7 million

- A total of 1,900 feet of new roadway will need to be constructed to provide transitions to and from the southbound couplet alignment.
- Roadway improvements along the northbound couplet alignment (Ivy Street) between 18th Avenue and 1st Avenue include the following: widening the sidewalks from 5 feet to 11 feet on both sides of the roadway, replacing the curb and gutter on both sides of the roadway, replacing drainage inlets due to the relocated curb line and pavement overlay along the narrowed 38-foot roadway section.
- The southbound couplet alignment was assumed to require a significant amount of reconstruction to support highway traffic volumes. Juniper Street will be completely rebuilt with new roadway base and pavement. New sidewalk, curb and gutter will also be constructed along both sides of the roadway.
- A new structure approximately 100 feet in length and 50 feet wide (6-foot sidewalks) will be constructed along the southbound couplet alignment near 17th Avenue to span Flat Creek.
- Four left turn pockets (two located along the northbound alignment and two along the southbound alignment) will be constructed south of 1st Avenue in the divided highway section. The turn pockets will be 325 feet (including the segment between the northbound and southbound alignments) in length with a 325-foot taper.
- Eight new traffic signals will be installed. Existing signals that would require modification were assumed to be replaced.
- Approximately 5,000 feet of traffic signal interconnect will be installed along the couplet to allow for coordinated signal timing. The cost includes trenching in both rural and urban areas.
- Side-by-side left turn lanes will be constructed along 1st Avenue between the northbound and southbound couplet alignments. This will require an additional 28 feet of right-of-way width along a 500-foot segment of roadway.

- A second westbound through lane will be constructed on 1st Avenue between the northbound side of OR 99 (Ivy Street) and the UPRR line. The inside through lane would align with the left turn lane leading to Juniper Street (OR 99 southbound).
- Improvements to local roadway facilities (County or City roads) include upgrades to existing roadways as well as constructing new connections. These improvements will include right-of-way acquisition of rural residential and farm land. It should be recognized that if these lands are brought within the urban growth boundary in the future, the cost of the land would be expected to increase commensurate with the applicable zoning designation.
- Improvements to local facilities (County or City roads) will be constructed to local standards. For cost estimate purposes, it was assumed that improvements would consist of 12-foot travel lanes with 8-foot shoulders along an 80-foot section of right of way.
- The cost to widen along Prairie Road and OR 36 to accommodate the dual northbound left turn lanes on OR 99 is included in the Juniper/Ivy Couplet alternative as part of the OR 99 intersection improvements, with \$3.8 million assumed for the Prairie Road improvements and \$6.4 million assumed for the OR 36 improvements.

Alternative B: Ivy/Holly Couplet	\$42.5 million
<u>Local Facility Improvements</u>	<u>\$41.9 million</u>
Total	\$84.4 million

- Roadway improvements along the southbound couplet alignment (Ivy Street) between 18th Avenue and 1st Avenue include the following: widening the sidewalks from 5 feet to 11 feet on both sides of the roadway, replacing the curb and gutter on both sides of the roadway, replacing drainage inlets due to the relocated curb line and pavement overlay along the narrowed 38-foot roadway section.
- The northbound couplet alignment was assumed to require a significant amount of reconstruction to support highway traffic volumes. Holly Street will be completely rebuilt with new roadway base and pavement. New sidewalk, curb and gutter will also be constructed along both sides of the roadway. Acquisition of railroad right-of-way will be required to construct the north segment of the couplet (between 13th Avenue and 18th Avenue).
- The BNSF railroad is assumed to be removed through the project limits prior to this project. The cost of removing and/or relocating the BNSF railroad is not included in this estimate.
- A new structure approximately 250 feet in length and 50 feet wide (6-foot sidewalks) will be constructed along the southbound couplet alignment near 15th Avenue to span Flat Creek.
- Four left turn pockets (two located along the northbound alignment and two along the southbound alignment) will be constructed south of 1st Avenue within the divided highway section. The turn pockets will be 325 feet (including the segment between the northbound and southbound alignments) in length with a 325-foot taper.
- Nine new traffic signals will be installed. Existing signals that would require modification were assumed to be replaced.

- Approximately 5,000 feet of traffic signal interconnect will be installed along the couplet to allow for coordinated signal timing. The cost includes trenching in both rural and urban areas.
- Side-by-side left turn lanes will be constructed along 1st Avenue between the northbound and southbound couplet alignment. This will require an additional 28 feet of right-of-way width along a 500-foot segment of roadway.
- A second westbound through lane will be constructed on 1st Avenue between the northbound side of OR 99 (Holly Street) and the UPRR line. The inside through lane would align with the left turn lane leading to Ivy Street (OR 99 southbound).
- Improvements to local roadway facilities (County or City roads) include upgrades to existing roadways as well as constructing new connections. These improvements will include right-of-way acquisition of rural residential and farm land. It should be recognized that if these lands are brought within the urban growth boundary in the future, the cost of the land would be expected to increase commensurate with the applicable zoning designation
- Improvements to local facilities (County or City roads) will be constructed to local standards. For cost estimate purposes, it was assumed that improvements would consist of 12-foot travel lanes with 8-foot shoulders along an 80-foot section or right of way.

Alternative C: OR 99 By-pass	\$114.6 million
<u>Local Facility Improvements</u>	<u>\$10.9 million</u>
Total	\$125.5 million

- The OR 99 by-pass will be approximately 2.8 miles (15,000 feet) in length with a 44-foot roadway section. Construction of the by-pass will require approximately 20.7 acres (900,000 square feet) of right-of-way. The unit cost for rural land has been estimated at \$2 per square foot. It should be recognized that if these lands were brought into the urban growth boundary, the cost of the right of way would increase commensurate with the applicable zoning designation.
- The OR 99 by-pass will include two new interchanges, which include approximately 180,400 square feet of new roadway and 58.5 acres (2,548,000 square feet) of right of way acquisition (\$2 per square foot).
- New roadway will be constructed to connect OR 99W to the northern by-pass interchange. The cost will include approximately 4,200 feet of new roadway (44-foot cross section) and right of way acquisition (approximately 62,000 square feet) for the entire alignment.
- Prairie Road will be extended to intersect the OR 99 business route at OR 36.
- The OR 99 by-pass will include large structures at the north and south interchanges, two smaller structures along the by-pass at Dane Lane and River Road, and four small structures for stream crossings.
- The OR 99 business route will be realigned between Prairie Road and the south interchange (see Figure 6-8).

- Improvements to local roadway facilities (County or City roads) include upgrades to existing roadways as well as constructing a new connection between OR 36 and High Pass Road along Pitney Lane. These improvements will include right of way acquisition of rural residential and farm land. It should be recognized that if these lands are brought within the urban growth boundary in the future, the cost of the land would be expected to increase commensurate with the applicable zoning designation.
- Improvements to local facilities (County or City roads) will be constructed to local standards. For cost estimate purposes, it was assumed that improvements would include 12-foot travel lanes with 8-foot shoulders along an 80-foot section or right of way.

Access Management Plan

With no dedicated funds available to construct any improvement alternative selected, the timing of implementation is unknown and may be many years away. By adopting an access management plan for the existing corridor, incremental improvements can be made in the meantime to help enhance safety and operations. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. By reducing the overall number of access points and providing greater separation between them, the impacts of these conflicts can be minimized.

As an added benefit, the access management enhancements made would complement any alternative when constructed and would help preserve the functional life of new improvements. However, as the construction of new facilities will modify the transportation system, it is recommended that the access management plan be modified during the project development process to implement appropriate management objectives for those new facilities.

Public Outreach

As part of the Access Management Plan development process, a public involvement plan was implemented to obtain input from affected property owners and tenants, as well as from the general public. In addition to the public outreach conducted for the overall project, including three Technical Advisory Committee meetings, three Citizen Advisory Committee meetings, and two public open houses, an additional public open house was held to discuss access management implementation and impacts and invitations were mailed to highway-adjacent property and business owners in the study area to establish individual meetings to discuss site-specific access needs and potential access modifications. As a result, individual meetings were held with 33 property/business owners to discuss access to over 40 highway-adjacent properties.

Access Management Plan Objectives

To provide a basis for decision-making during the development of the access management plan, the objectives of the plan were formed with ODOT staff and outlined as shown below.

1. Where reasonable alternate access is available, direct highway access is to be removed. Where reasonable alternate access is not available, the objective will be to meet, or move in the direction of meeting, ODOT's adopted access management spacing standards for Regional Highways, as documented in OAR 734-051-0115, Table 2. Applicable spacing standards for

each access management zone within the study area are shown below, with zone boundaries illustrated in Figures 6-9A through 6-9D.

Table 6-3: Study Area Access Management Spacing Standards

Zone	Highway Segment	Classification	Segment Designation	Urban/Rural	Posted Speed	Access Spacing Standard
1	OR 99W: MP 108.32 - 108.50	Regional Hwy	Other	Rural*	55 mph	990 ft.
2	OR 99W: MP 108.50 - 108.70	Regional Hwy	Other	Urban	45 mph	750 ft.
3	OR 99W/99: MP 108.70 - 109.83	Regional Hwy	Other	Urban	30 mph	425 ft.
4	OR 99: MP 109.83 - 110.04	Regional Hwy	Other	Urban	45 mph	750 ft.
5	OR 99: MP 110.04 - 111.27	Regional Hwy	Other	Urban	55 mph	990 ft.
6	OR 99E: MP 31.78 - 32.07	Regional Hwy	Other	Rural	55 mph	990 ft.
7	OR 99E: MP 32.07 - 32.29	Regional Hwy	Other	Rural*	45 mph	750 ft.
8	OR 99E: MP 32.29 - 32.46	Regional Hwy	Other	Urban	30 mph	425 ft.

* Segment lies in both Urban and Rural areas, but spacing standard is not impacted.

2. In attempting to meet access management spacing standards, exceptions may be allowed to take advantage of existing property boundaries and existing or planned public streets, and to accommodate environmental constraints.
3. Replace private approaches with public streets, where feasible, to provide consolidated access to multiple properties.
4. Develop short, medium, and long-range actions for access management implementation, where short-range actions could be implemented immediately, medium-range actions are dependent on property redevelopment, and long-range actions would occur as part of or following a construction project by ODOT or the City. As the timing of property redevelopment and future construction projects can not be predicted, the labeling of actions as short, medium, or long-range is only intended to be a guide and should not be used to establish a required order of implementation. Any action should be implemented as opportunities arise, regardless of timing.
5. Modifications of property access should acknowledge needs of existing development. Where on-site infrastructure, such as buildings and other permanent objects, have been located in such a way that site access or function is dependent on the existing access location or design, modifications of access should be delayed until the site is redeveloped. However, this condition shall be re-evaluated should a “Change in Use” of an approach occur as defined in OAR 734-051-0045.
6. Proposed actions shall not prevent properties from maintaining reasonable access to the transportation system where available under existing conditions. This objective is not intended to require provision of reasonable access to properties that do not maintain it under existing conditions or to properties not impacted by recommended actions.

7. Where approaches to the highway are to remain upon consideration of the preceding objectives, such approaches should be aligned on opposite sides of roadways where feasible to reduce turning conflicts.

Access Management Action Plan

Using these objectives, an action plan for each approach to the State highway system within the study area was developed, as shown below in Table 6-4. As noted in the objectives, the short-range actions could be implemented at any time and are not dependant on site redevelopment or future improvement projects. The medium-range actions represent those that are dependent on site redevelopment due to potential hardships that could result by modifying property access given current infrastructure locations. Long-range actions represent those that are dependent on improvement projects to be constructed before access changes could be made. The long-range action plan has also been illustrated in Figures 6-9A through D to aid in the interpretation of the actions in Table 6-4. Note that the use of the term “further development” is intended to refer to any degree of development activity, whereas the term “redevelopment” is intended to refer to a level of development activity that would allow for site circulation to be modified as a result of such actions as building relocations or on-site circulation changes.

Detailed information regarding approach and property characteristics, as well as existing access rights, has been compiled into inventory lists. These databases will provide needed information to ODOT staff in determining the appropriate procedure for executing the recommended actions in Table 6-4. The inventory lists, included in the appendix, have been separated into an existing approach physical inventory (Appendix Table A.1) and an existing property access rights list (Appendix Table A.2).

Table 6-4: OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
1	(17th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
2	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 17th Ave.	None
3	(16th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
4	Close approach as opportunity arises. Alternate access is available via 15th Ave. and 16th Ave.	Same as Short-Range.	None
5	(15th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
6	Close approach to OR 99 as opportunity arises. Alternate access is available via 15th Ave. and 14th Ave.	None	None
7	(14th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
8	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 14th Ave. and/or 13th Ave.	None
9	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 14th Ave. and/or 13th Ave.	None
10	(13th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
11	Property is currently vacant. At time of development, close approach to OR 99. Future access to be taken from 13th Ave.	None	None
12	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 12th Ave.	None
13	(12th Ave.) No action.	Same as Short-Range.	Same as Short-Range.

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
14	Combine with approach No. 15.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 12th Ave.	None
15	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 11th Ave.	None
16	(11 th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
17	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 11th Ave.	None
18	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 11th Ave.	None
19	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 10th Ave.	None
20	Approach to be restricted to right-out movements only. Installation of traffic separator in median is recommended. However, given right-of-way limitations, interim improvements may consist of on-site signing and/or pavement markings to convey right-out only restriction.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 10th Ave.	Install traffic separator in median if determined to be feasible as part of future highway improvement project if redevelopment and approach closure (see medium-range action) has not occurred.
21	(10th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
22	Convert to serve entrance only. Alternate access exists on both 10th & 9th Ave.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 10th Ave. and 9th Ave.	None
23	(9th Ave.) No action.	Same as Short-Range.	Same as Short-Range.

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
24	As opportunity arises, close approach to OR99. Alternate access is available via 9th Ave.	Same as Short-Range.	None
25	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 9th Ave.	None
26	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 8th Ave.	None
27	(8th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
28	Combine with approach No. 29.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 8th Ave.	None
29	No action.	Same as Short-Range.	Same as Short-Range.
30	(7th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
31	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 7th Ave.	None
32	No action.	Same as Short-Range.	Same as Short-Range.
33	(6th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
34	(5th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
35	(4th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
36	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 4th Ave. and 3rd Ave.	None
37	As opportunity arises, close approach to OR99. Alternate access is available via 3rd Ave.	Same as Short-Range.	None
38	(3rd Ave.) No action.	Same as Short-Range.	Same as Short-Range.

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
39	(1st Ave.) No action.	Same as Short-Range.	Same as Short-Range.
40	As opportunity arises, close approach to OR99 and relocate 425 feet south of the centerline of 1st Ave.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 1st Ave.	None
41	No action.	Same as Short-Range.	Same as Short-Range.
42	Combine with approach No. 43.	Concurrent with further development on property, construct vehicular access road (and bridge if necessary) between TL 6100 and TL 4400 and take access from approach number 41 on TL 4400, resulting in closure of approach number 42.	None
43	No action.	Upon property redevelopment, close approach to OR 99. Construct shared approach to be used by TL 229 and neighboring TL 101 to the south (one approach total). Establish access easements between TL 229 and TL 101 to support use of shared approach. Location of access to be determined during development review.	None
44	No action.	Upon property redevelopment, close approach to OR 99. Construct shared approach to be used by TL 101 and neighboring TL 229 to the north (one approach total). Establish access easements between TL 101 and TL 229 to support use of shared approach. Location of access to be determined during development review.	None
45	No action.	Same as Short-Range.	Same as Short-Range.

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
46	As opportunity arises, close approach to OR99. Alternate access is available via approach #47.	Same as Short-Range.	None
47	No action.	Same as Short-Range.	Same as Short-Range.
48	No action.	Upon redevelopment, if shared approach is available from TL 1001 to the south, close approach to OR 99 and take access from shared approach from TL 1001. If shared approach on TL 1001 is not yet available upon redevelopment of TL 200, site circulation on TL 200 shall be planned to accommodate a change in access to close the OR 99 approach and use the shared approach on TL 1001 as it becomes available.	None
49	No action.	Upon property redevelopment, close approach to OR 99. An approach to OR 99 may be considered by ODOT if constructed near the north property line of TL 1001 to be shared with TL 200 to the north (one approach total). Establishment of access easements between TL 1001 and TL 200 to support use of shared approach would be required.	None
50	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from Hatton Lane.	None
51	(Hatton Ln.) No action.	Same as Short-Range.	Same as Short-Range.
52	No action.	Same as Short-Range.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
53	Convert to serve entrance only.	Same as Short-Range.	None
54	Convert to serve exit only.	Same as Short-Range.	None
55	As opportunity arises, close approach to OR99. Alternate access is available via approach #56.	Same as Short-Range.	None
56	No action.	Same as Short-Range.	Same as Short-Range.
57	No action.	Upon redevelopment, if shared approach is available from TL 800 to the south, close approach to OR 99 and take access from shared approach from TL 800. If shared approach on TL 800 is not yet available upon redevelopment of TL 400, site circulation on TL 400 shall be planned to accommodate a change in access to close the OR 99 approach and use the shared approach on TL 800 as it becomes available.	None
58	Modify approach to be used for emergency access only. Design of emergency access to be determined by ODOT.	Upon property redevelopment, close approach to OR 99. An approach to OR 99 may be considered by ODOT if constructed near north property line of TL 800 to be shared with TL 400 to the north (one approach total). Establishment of access easements between TL 800 and TL 400 to support use of shared approach would be required.	None
59	As opportunity arises, close approach to OR99. Alternate access is available via Prairie Rd.	Same as Short-Range.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
60	As opportunity arises, close approach to OR99 and combine it with approach #61 into a new approach.	Upon property redevelopment, close approach to OR 99. Future access to be taken from Prairie Rd. and approach to OR 99 near north property line to be shared with TL 400.	None
61	As opportunity arises, close approach to OR99 and combine it with approach #60 into a new approach. New approach should be located further north than approach #61 to increase separation between new approach and next approach to the south.	Upon property redevelopment, close approach to OR 99. Future access to be taken from Prairie Rd. and approach to OR 99 near north property line to be shared with TL 400 (if approved).	None
62	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from Prairie Rd. Approach to Prairie Rd. should be moved to north to provide adequate sight distance to south along Prairie Rd.	None
63	As opportunity arises, close approach to OR99. Alternate access is available via Prairie Rd.	Same as Short-Range.	None
64	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from Prairie Rd. Approach to Prairie Rd. should be moved to north to provide adequate sight distance to south along Prairie Rd.	None
65	(Prairie Rd.) No action.	Same as Short-Range.	Same as Short-Range.
66	No action.	Same as Short-Range.	Same as Short-Range.
67	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from OR 36.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
68	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from OR 36.	None
69	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from OR 36.	None
70	As opportunity arises, close approach to OR99. Alternate access is available via OR 36.	Same as Short-Range.	None
71	(OR 36) No action.	Same as Short-Range.	Same as Short-Range.
72	(18th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
73	No action.	Same as Short-Range.	Same as Short-Range.
74	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 16th Ave.	None
75	(16th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
76	No action.	Same as Short-Range.	None
77	Close approach as opportunity arises. Use approach No. 76.	Same as Short-Range.	None
78	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from approach 77 located opposite 15th Ave.	None
79	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from approach 80 or approach to 14th Ave.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
80	No action.	Upon property redevelopment, close approach and take access from 14th Avenue if 14th Avenue has been constructed or will be constructed concurrent with the development. If 14th Avenue has not been or will not be constructed, retain approach to OR 99.	None
81	No action.	Upon property redevelopment, close approach and take access from 14th Avenue if 14th Avenue has been constructed or will be constructed concurrent with the development. If 14th Avenue has not been or will not be constructed, retain approach to OR 99.	None
82	Close approach as opportunity arises. Use approach No. 81.	Same as Short-Range.	Same as Short-Range.
83	Modify to serve garage bay only.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 13th Ave.	None
84	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 13th Ave.	None
85	(13th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
86	No action.	Upon further property development, close approach to OR 99. Future access to be taken from 13th Ave.	None
87	As opportunity arises, close approach to OR 99 and replace with access to 12th Ave.	Same as Short-Range.	None
88	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 12th Ave.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
89	(12th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
90	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 12th Ave.	None
91	Close approach.	Same as Short-Range.	None
92	(11th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
93	(10th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
94	Convert to serve entrance movements only. Egress is available via alley.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 9th Ave.	None
95	(9th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
96	As opportunity arises, close approach to OR 99 and replace with access to 9th Ave.	Same as Short-Range.	None
97	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 8th Ave.	None
98	(8th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
99	As opportunity arises, close approach to OR 99 and replace with access to 8th Ave.	Same as Short-Range.	None
100	Approach to serve egress movements from site only, with ingress movements from 7th Ave.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 7th Ave.	None
101	(7th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
102	Convert to serve entrance movements only. Egress is available to 7th Ave.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 7th Ave.	None

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
103	(6th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
104	Close approach as opportunity arises. Access exists from two city streets and alley.	Same as Short-Range.	Same as Short-Range.
105	(5th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
106	Close approach as opportunity arises. Alternate access available to 5th Ave.	Same as Short-Range.	None
107	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 5th Ave.	None
108	Approach to serve egress movements from site only, with ingress movements from 4th Ave.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 4th Ave.	None
109	(4th Ave.) No action.	Same as Short-Range.	Same as Short-Range.
110	Close approach as opportunity arises. Alternate access available to 4th Ave.	Same as Short-Range.	None
111	Close approach as opportunity arises. Alternate access available to 4th Ave.	Same as Short-Range.	None
112	No action.	Upon property redevelopment, close approach to OR 99. Future access to be taken from 3rd Ave.	None
113	(3rd Ave.) No action.	Same as Short-Range.	Same as Short-Range.
114	(2nd Ave.) No action.	Same as Short-Range.	Same as Short-Range.
115	(1st Ave.) No action.	Same as Short-Range.	Same as Short-Range.
116	Approach to remain until reasonable alternate access becomes available.	Same as Short-Range.	Same as Short-Range.

Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
117	Approach to remain until reasonable alternate access becomes available.	Same as Short-Range.	Same as Short-Range.
118	As opportunity arises, close approach to OR 99.	Same as Short-Range.	None
119	Approach to remain until reasonable alternate access becomes available.	Same as Short-Range.	Same as Short-Range.
120	As opportunity arises, close approach to OR 99.	Same as Short-Range.	None
121	As opportunity arises, close approach to OR 99.	Same as Short-Range.	None
122	As opportunity arises, close approach to OR 99.	Same as Short-Range.	None
123	(Prairie Rd.) No action.	Same as Short-Range.	Same as Short-Range.
124	No action.	Upon property redevelopment, close approach to OR 99W and take access from Toftdahl Rd.	None
125	(Juniper St.) No action.	Same as Short-Range.	Same as Short-Range.
126	(Toftdahl Rd.) No action.	Same as Short-Range.	Same as Short-Range.
127	(Link Ln.) No action.	Same as Short-Range.	Same as Short-Range.
128	Close approach as opportunity arises. Alternate access is available via Link Lane.	Same as Short-Range.	None
129	Combine with approach No. 130.	Same as Short-Range.	Same as Short-Range.
130	Close approach as opportunity arises. Alternate access is available via approach No. 129.	Same as Short-Range.	None
131	No action.	Same as Short-Range.	Same as Short-Range.
132	No action.	Same as Short-Range.	Same as Short-Range.
133	No action.	Same as Short-Range.	Same as Short-Range.

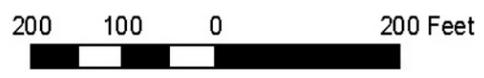
Table 6-4 (continued): OR 99 Junction City Access Management Plan Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
134	Close approach as opportunity arises. Alternate access is available via approach No. 135.	Same as Short-Range.	None
135	No action.	Same as Short-Range. However, upon property redevelopment, consideration should be given to maximizing the distance to the OR 99W/OR 99E intersection and providing adequate sight distance to the north along OR 99E (horizontal curve).	None
136	No action.	Upon property redevelopment, close approach to OR 99E.	None
137	(OR 99W/OR 99E) No action.	Same as Short-Range.	Same as Short-Range.
138	Combine with approach No. 139 and locate shared approach on property line.	Same as Short-Range.	Same as Short-Range.
139	Combine with approach No. 138 and locate shared approach on property line.	Same as Short-Range.	Same as Short-Range.
140	Close approach as opportunity arises. Alternate access is available via approach No. 139.	Same as Short-Range.	Same as Short-Range.
141	No action.	Same as Short-Range.	Same as Short-Range.
142	Close approach as opportunity arises. Alternate access is available via approach No. 141.	Same as Short-Range.	None
143	As opportunity arises, close approach to OR 99. Alternate access is available via Pitney Lane.	Same as Short-range.	Same as Short-range.
New Approach between No. 143 and No. 67	Provide one approach to OR 99 from area of TL 400 that is landlocked by a stream. Locate approach as far south of neighboring approach to the north as feasible.	Same as Short-range.	Same as Short-range.



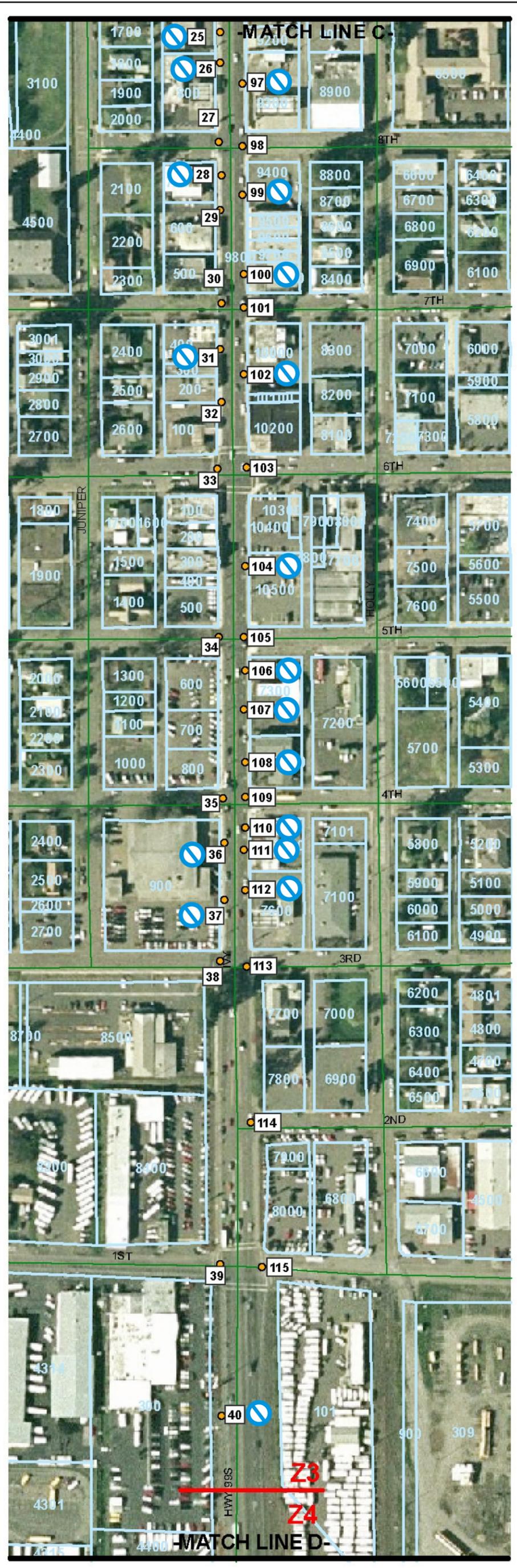
Legend

- Tax Lot
- UGB
- Z# Access Management Zone Boundary and Number
- Approach
- # Approach Number
- R Restricted Turn Movements
- / Construct Approach
- Access Control



Notes:
 - For detailed information regarding individual approach treatment, see Table 6-4.
 - The actions illustrated are subject to change as described in the text of the access management plan.

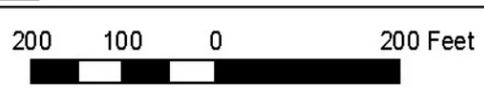
FIGURE 6-9A
OR 99 Long-Range
Access Management Plan



Legend

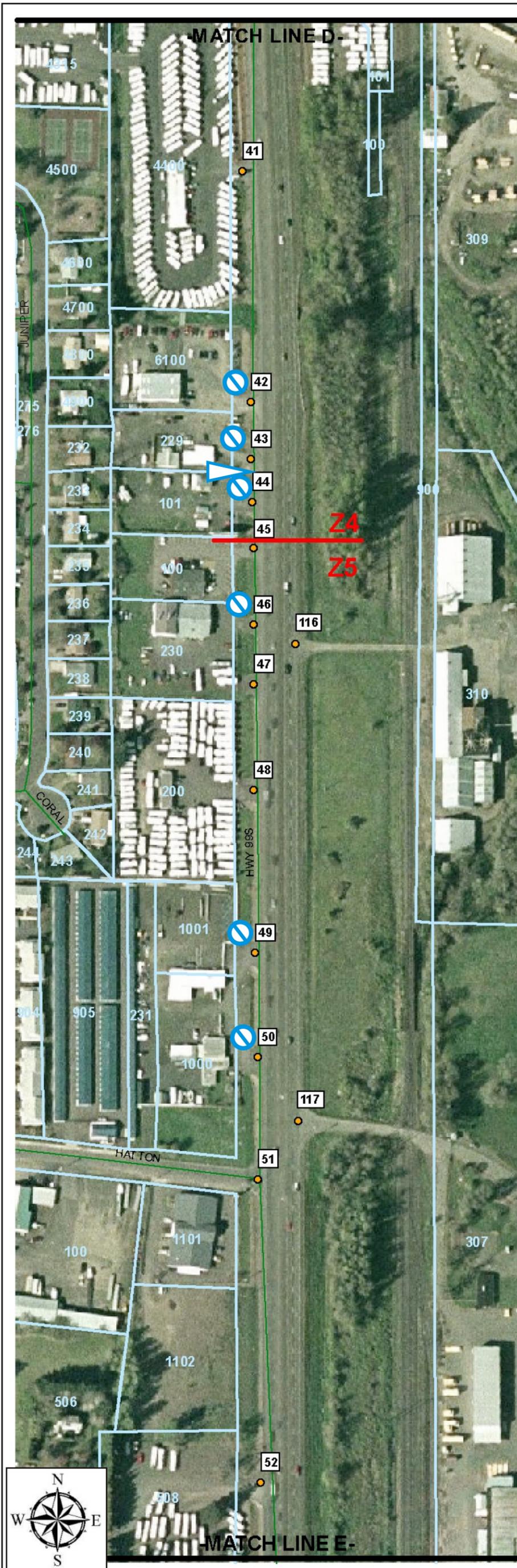
- UGB
- Approach
- Approach Number
- Access Control

- Tax Lot
- Access Management Zone Boundary and Number
- Close Approach
- Restricted Turn Movements
- Construct Approach



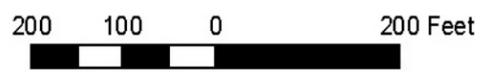
Notes:
 - For detailed information regarding individual approach treatment, see Table 6-4.
 - The actions illustrated are subject to change as described in the text of the access management plan.

FIGURE 6-9B
OR 99 Long-Range
Access Management Plan



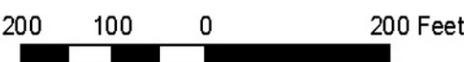
Legend

- Tax Lot
- Access Management Zone Boundary and Number
- Approach
- Approach Number
- Access Control
- Close Approach
- R Restricted Turn Movements
- ▲ Construct Approach



Notes:
 - For detailed information regarding individual approach treatment, see Table 6-4.
 - The actions illustrated are subject to change as described in the text of the access management plan.

FIGURE 6-9C
OR 99 Long-Range
Access Management Plan



- Legend**
- UGB
 - Approach
 - # Approach Number
 - Access Control
 - Tax Lot
 - Access Management Zone Boundary and Number
 - Close Approach
 - R Restricted Turn Movements
 - ▲ Construct Approach

Notes:
 - For detailed information regarding individual approach treatment, see Table 6-4.
 - The actions illustrated are subject to change as described in the text of the access management plan.

FIGURE 6-9D
OR 99 Long-Range
Access Management Plan

Access Management Plan Modification Recommendation

As the access management plan is implemented over time, there may be conditions under which modifications to the plan are desired as a result of new findings or changes in circumstances related to property accessibility. Under such conditions, modifications to the plan may be made by ODOT, with input provided by the applicable local jurisdiction (i.e. City of Junction City or Lane County). Any modifications made should be documented in writing and provided to ODOT, the City of Junction City, and Lane County. Specific conditions under which modifications to the access management plan actions are recommended are as follows.

Approach Permitting

The actions in this plan do not replace the requirement to obtain an approach permit from ODOT for the construction, maintenance, and operation of an approach to a state highway.

Turn Restrictions & Approach Design

Conditions of use, including but not limited to approach design and the restriction of turning movements allowed, may be applied by ODOT through the approach application process. Unless specifically stated, the actions in this plan do not guarantee that all turning movements will be allowed to/from an approach.

Land Divisions and Consolidations

It should be noted that the recommended actions were based in part on current property configurations and ownerships. Should property boundaries change in the future through consolidation or other land use action, the access management plan may be modified by ODOT following consultation by the applicable local jurisdiction (i.e. City of Junction City or Lane County), where such modifications would move in the direction of the adopted access management spacing standards in this plan. Additional access points should not be allowed where they would result from future land partitions or subdivisions. Also, where contiguous properties have been placed under common ownership following plan adoption, opportunities to further consolidate access should be pursued.

Changes in Property Zoning

It should be noted that the recommended actions were based in part on current property zoning and comprehensive plan zoning. Should property zoning change in a manner inconsistent with current or comprehensive plan zoning, the access management plan may be modified by ODOT following consultation by the applicable local jurisdiction (i.e. City of Junction City or Lane County), where such modifications would move in the direction of the adopted access management spacing standards in this plan. Provision for access management plan modification by ODOT shall also be allowed where conditional uses are approved.

Shared Mid-block Access

Along the corridor of OR99 from 17th Avenue to 1st Avenue where property access is recommended to be relocated to the side-streets rather than taken directly from the highway, applications for approaches to the highway where not shown in the plan may be considered by ODOT where proposed approaches would be located at a mid-block location, adjacent property owners agree to record access easements to allow for joint use, and where a right of access exists. When approving such applications, OAR 734-051 will govern decisions and findings must be made that side-street

access as shown in the plan could not adequately serve existing and proposed development and that approval of the proposed access would benefit the highway.

Also, should the corridor along OR99 from 17th Avenue to 1st Avenue become adopted as a Special Transportation Area (STA), the prevailing access management spacing standards for that section would be used.

Maintenance & Modernization of Legal Approaches

The actions listed in this plan shall not prevent the reconstruction of legal approaches as necessary to meet City, County, or ODOT standard design. This provision is not intended to apply to conditions related to ODOT projects or actions resulting in a “Change in Use” of an approach as defined in OAR 734-051-0045.

Recommended Modifications to Public Alley Design

Within the corridor along OR99 from 17th Avenue to 1st Avenue, property access is recommended to be relocated to the side-streets, rather than taken directly from the highway. However, most properties are currently served by alleys to the side-streets that are located approximately 100 feet from the intersection with OR99, making the establishment of additional access points undesirable. As these alleys are only 20 feet wide, they may not be adequate to accommodate trips associated with some developments.

Therefore, it is recommended that all alleys be improved at the time access is relocated from OR99 to a side-street. Improvements shall include widening the alley by a minimum of four feet on each side (each side improved as part of development activity on that property) and establishing a minimum unobstructed approach throat distance of 30 feet from the back of sidewalk. Larger dimensions may be required as determined appropriate through the development review process. If improvements are not possible due to existing development patterns or insufficient right-of-way, one-way travel should be considered.

Project Phasing

This discussion includes an assessment of the anticipated timing and importance of various elements of each alternative to guide prioritization of funding. It should be recognized that this assessment assumes growth through 2026 will occur evenly throughout the City and on a linear basis. Significant develop activity in any one area of the City could have an impact on the timing of improvements needed.

Alternatives A and B:

Alternatives A and B are fundamentally the same, with the most significant difference being only the alignment of the new half of the couplet (i.e. Juniper Street or Holly Street). Therefore, the phasing discussion for these alternatives will be the same.

As the intersection on OR 99 at 1st Avenue is the only intersection that fails to meet mobility standards under existing conditions and is projected to be the primary bottleneck in 2026, the timing of the need to implement improvements at this location is immediate. Therefore, the first phase must include the couplet from the north end of the project (OR 99W/OR 99E) through the 1st Avenue intersection. The divided highway section south of 1st Avenue does not address any mobility needs,

but was included to improve traffic safety and extend pedestrian facilities further to the south. Therefore, the divided highway section could be included as a separate phase to be constructed when desired.

While possibly subject to an urban growth boundary expansion or goal exception, the timing of the proposed improvements to local facilities (Prairie Road extension and River Road and Pitney Lane enhancements) will play a key role in the ability of the couplet and other improvements in the corridor to operate adequately. Without the improved local facilities in place, the intersections on the couplet with 1st Avenue could only operate adequately through the year 2011. The study intersections north of 1st Avenue will operate adequately through 2026 with the couplet in place regardless of timing of the local facility improvements.

When prioritizing the local facility improvements, consideration should be given to the amount of traffic that is expected to divert to each facility. Under that method, the extension of Prairie Road to River Road would be highest in priority, followed by the Pitney Lane improvements and lastly, the River Road enhancements. The Prairie Road extension to River Road would be the most effective if made easily accessible to the high employment area southeast of the River Road/UPRR crossing (including Country Coach), as it would divert a large volume of trips away from the critical OR 99/1st Avenue intersections.

The OR 99/Prairie Road intersection will continue to meet mobility standards without signalization through the year 2023, assuming the local improvements have not been made. With the local improvements in place, this intersection could operate adequately through 2026 without signalization. However, given the high volumes of conflicting southbound through and northbound left turning traffic, safety concerns may drive the need for a signal sooner. When the signal is installed, the capacity will be reduced for northbound and southbound through traffic that will now be required to stop at times. The construction of dual northbound left turn lanes would be required as part of the signal installation to meet adopted mobility standards. However, given the cost of constructing the dual northbound left turn lanes, which includes widening Prairie Road to Bailey Lane, consideration should be given to pursuing a design exception to allow operation at a v/c ratio of 0.76 rather than 0.75.

The intersection of OR 99/OR 36 will continue to operate adequately without improvement and without the improved local facilities through the year 2014. An additional four years could be gained by constructing the westbound right turn lane. When the Prairie Road extension is constructed, the northbound right turn lane and dual westbound left turn lanes will be needed. The separate eastbound left turn lane should be constructed along with the implementation of the Pitney Lane improvements. The dual northbound left turn lanes would not be needed until 2026, and could therefore be included as part of any of the other phases of improvement for this intersection. However, given the cost of constructing the dual northbound left turn lanes, which includes widening OR 36 to Pitney Lane, consideration should be given to pursuing a design exception to allow operation at a v/c ratio of 0.77 rather than 0.75.

Alternative C

With Alternative C, the by-pass must be included in the first phase if improvements to poor operations in the corridor are to be addressed. Again, as the intersection on OR 99 at 1st Avenue is the only intersection that fails to meet mobility standards under existing conditions and is projected to be the primary bottleneck in 2026, the timing of the need to implement improvements at this location is immediate. Therefore, the needed timing of the first phase (by-pass) is immediate as well.

Because at-grade railroad crossings on the by-pass would not be desirable and are not likely to be allowed, the grade-separated crossings at the north and south ends of the by-pass must be included in phase 1.

A traffic signal could be used as an interim improvement at the north end of the by-pass to allow the construction of the whole north interchange to be deferred to another phase. A signal could meet mobility standards through 2026, but the northbound left turn queues would be nearly 400 feet long. Also, there may be safety concerns with installing what would be a rural, isolated signal on a high-speed facility. As the large structure over the railroads must be constructed as part of phase 1 anyway, it may be more desirable to complete the interchange as well to avoid these potential safety concerns.

If a traffic signal were used as an interim improvement at the south end of the by-pass rather than constructing the full interchange during phase 1, mobility standards could be met through 2026. However, the high conflicting volumes of southbound through and northbound left turn traffic will result in very long queues (greater than 500 feet), even with dual left turn lanes, and may become a safety concern. In addition, as noted for the north end of the by-pass, there may be safety concerns related to the installation of an isolated signal on a high-speed rural corridor. Because the large structure over the railroad must be constructed as part of phase 1, it may be more desirable to construct the entire south interchange at that time as well.

The improvements on the OR 99 business route between the Flat Creek Bridge and 3rd Avenue are not intended to improved motor vehicle operations or meet mobility standards, but were included to improve bicycle and pedestrian transportation. Therefore, these improvements could be deferred to a later phase and constructed when desired.

With the by-pass in place, the improvements to local facilities would be underutilized. Therefore, these could be assigned a low priority or dropped from the project altogether.

Alternatives Evaluation

Using the Evaluation Criteria and Technical Rating Methods developed in Technical Memorandum #4, each alternative was rated for compliance with project needs and expectations. Table 6-5 provides a side-by-side comparison of each alternative in consideration of the evaluation criteria. While all alternatives appear to be equally rated in many categories, it should be acknowledged that many of the criteria simply indicate whether improvement was made in that category or not and that the ratings do not always convey the degree to which improvements were made. As an example, all alternatives are shown to reduce corridor travel time, but from Table 6-2 it is shown that Alternative C offered the greatest reduction.

From the evaluation matrix, it can be concluded that if the No Build alternative were selected, there would be no direct property impacts or additional costs, but congestion in the corridor would become severe, bicycle and pedestrian travel would be inhibited, and the high crash rates and hazardous trends along OR 99 would continue unabated. While the ratings from the matrix alone do not provide a clear differentiation between Alternatives A, B, and C, it can be concluded that each of these alternatives are viable and capable of addressing the needs outlined. It can also be concluded that Alternative C would come at a significantly higher cost (approximately 50% higher) than Alternatives A or B.

In addition to the ratings provided, other key issues raised by the discussion in this memorandum that should be taken into account include:

- Alternatives A and B could include on-street parking north of 1st Avenue to supplement on-site parking for area businesses.
- While all alternatives would improve pedestrian crossings of OR 99, Alternatives A and B would provide a much longer area of improvement compared to Alternative C (nearly 2 miles compared to approximately $\frac{3}{4}$ of a mile). Also, the sidewalks included as part of Alternatives A and B would be wider than those provided under Alternative C (11 feet compared to 6 feet).

Table 6-5: Alternatives Evaluation Matrix

Evaluation Criteria	Alternatives			
	No Build Alternative	Alternative A: Juniper/Ivy Couplet	Alternative B: Ivy/Holly Couplet	Alternative C: OR 99 By-pass
Meets HDM mobility standards	-	+	+	+
Reduces corridor through travel time	-	+	+	+
Reduces OR 99 intersection queue blockage	-	+	+	+
Able to meet design standards	-	+	+	+
Facilitates pedestrian crossing of OR 99	-	+	+	+
Improves bicycle travel	-	+	+	+
Reduces direct highway access	✓	+	+	+
Reduces vehicle conflicts	✓	+	+	+
Potential environmental impacts	+	✓	✓	✓
No new at-grade railroad crossings	✓	✓	✓	✓
Feasible construction/implementation	NA	✓	✓	✓
Private property impacts	+	-	-	-
Cost-effectiveness	+	+	+	-
Consistent with City Comp Plan/ TSP	+	+	+	+
Consistent with Junction City Downtown Plan	+	+	+	+

- Alternatives A and B would facilitate the operation of transit stops along the OR 99 corridor, while Alternative C would provide no benefit to transit in some areas and would actually preclude the operation of transit stops through the downtown area.
- Alternative C has the potential to remove through freight traffic from the downtown and would provide the shortest travel time for freight movement.
- Alternatives A and B appear to have less potential for impacting wetlands.

- As Pitney Lane was underutilized under Alternative C, the improvements to that corridor could be removed from the project to reduce the total cost by approximately \$10 million.
- While the Prairie Road extension does not create any additional at-grade railroad crossings, it does remove an existing one and replaces it with a new crossing, which would require approval of a crossing order.
- Rail impacts of varying degrees are present as part of every alternative, including widened crossings associated with the construction of new turn lanes at nearby intersections, construction of grade-separated crossings, and many roadway improvements near (within 500 feet), but not at, rail crossings.
- Policy 1G (Major Improvements) from the 1999 Oregon Highway Plan (as amended) places a higher priority on projects such as Alternatives A and B that improve the efficiency of or add capacity to existing facilities rather than promoting the construction of new facilities as would be required for Alternative C.
- While Alternatives A and B are similar in many ways, they are very different in how they would potentially impact the downtown area of the City. Alternative A, which incorporates Juniper Street into the couplet system, would effectively extend the downtown to the west. While the comprehensive plan zoning of properties along Juniper Street is consistent with both commercial and residential development, the conversion of Juniper Street into a highway would have a significant impact on existing land uses such as historic homes and schools. In contrast, the existing land uses surrounding Holly Street (Alternative B) are predominantly commercial in nature and would more readily accommodate the conversion to a highway corridor. However, Alternative B is dependant on the elimination of the BNR line along Holly Street.

It should be noted that the constraints of state land use law regarding rural and urban land deserves mention with regard to evaluating the feasibility of construction of the local improvements outside the urban growth boundary, which were included as elements of all alternatives.

As mentioned previously, in order to accommodate many of the local improvements, the City may either need to expand its urban growth boundary or obtain an exception to statewide land use Goal 3 (Agriculture). In order to expand the urban growth boundary, the City will need to demonstrate that the additional land is necessary to accommodate growth over the next 20 years. A new urban growth boundary expansion will require revised growth projections that make a convincing argument to the state Land Conservation and Development Commission, who must sanction the expansion, that another urban growth boundary expansion is justified.

Alternatively, the City could apply for an exception to state land use Goal 3 (Agriculture) to accommodate construction of the improvements. This would require a demonstration that there are no other alternatives to solving the OR 99 issues being addressed by this plan within the existing urban growth boundary. With the exception of the need to further evaluate solutions to the problems identified at OR 99 and 1st Street, the alternative evaluations completed for this plan are believed to fulfill this obligation, as the local improvements identified have been shown to be essential for any alternative to provide adequate operations through the planning horizon.

The relatively near-term need for supplementary local facility improvements underscores the importance of resolving the ODOT/Oregon Transportation Commission both the policy issues related to railroad crossings and possible impacts to rural lands and the remaining operational questions

related to address the congestion at the intersection of 1st Street and OR 99 without adding new facilities outside of the UGB as quickly as possible. Similarly, if it is determined that there really is no solution to the congestion at OR99 and 1st Street that can be implemented within the UGB, it will be necessary to work with Lane County and the Department of Land Conservation and Development to investigate the potential to expand the urban growth boundary or obtain land use approvals or goal exceptions as needed to enable solutions outside of the UGB to move forward in a timely manner.

