



## Technical Memorandum #4C: Year 2028 Planning Horizon

This memorandum summarizes the interim year 2028 analysis conducted for the Medford Transportation System Plan Update and Urban Growth Boundary Amendment. The interim year 2028 is based on an estimate of the City's current Urban Growth Boundary (UGB) build-out in the year 2028 in a manner consistent with the zoning designations identified through the City's Internal Study Areas (ISA) process. This memorandum summarizes the anticipated intersection and roadway deficiencies and identifies mitigation measures to address these system needs.

This memorandum includes a discussion of:

- Previously planned and funded roadway improvements included as part of the 2028 analyses
- Applicable roadway performance standards
- Citywide, area-specific, and localized deficiencies and potential improvement needs

### PLANNED ROADWAY PROJECTS

Projects that have already been planned and are considered reasonably likely to be constructed by 2028 were included as part of the 2028 analyses. A description of the purpose and extents of these projects is summarized below.

#### Crater Lake Highway Bypass



Exhibit 1. Schematic illustration of the Crater Lake Bypass.

As illustrated in Exhibit 1, the Crater Lake Highway Bypass is planned east of I-5 to address a highly congested section of OR 62. Traffic volumes on OR 62 in this corridor average more than 46,000 vehicles per day, which is a higher traffic volume than I-5. This project is a critical element

of overall regional mobility, and will reduce congestion and improve safety on Highway 62 from the I-5 North Medford Interchange Vilas Road. Phase 2 of the project is funded as well (pending the final construction costs of Phase 1), and will extend the improvements further north to a new traffic signal at Cory Road. Phase 2 also includes a grade-separated interchange at Vilas Road.

Key project elements include design and construction of 2.1 miles of roadway; a grade-separated bypass and structure; a pedestrian underpass to provide bike/pedestrian connectivity; illumination, signing, and new traffic signals at select intersections. The project also includes design and construction of new access roads. Design coordination with the Airport and Federal Aviation Administration (FAA) were conducted to ensure compliance with runway protection zone restrictions.

This project is funded with monies allocated through Oregon's Jobs and Transportation Act (JTA), passed by the state legislature in the spring of 2009. The funding available for the second phase is dependent upon the cost of the first phase of this project. The overall funding available for the overall project is \$100,000,000 from the JTA funds plus \$23,000,000 in Oregon Transportation Improvement Act (OTIA) III funds.

### **Holly Street Improvements**

Holly Street is classified as a minor collector, connecting the downtown, Barnett Road, Stewart Avenue, and south to Holmes Avenue where the road bends to the west. The Regional Transportation Plan (RTP) identifies the southern extension of Holly Street as a three-lane cross-section to Garfield Avenue. This new connection will better serve Jefferson Elementary School and the adjacent parks, and extend the benefit of this roadway. This \$3.7 million project is planned for construction in 2014.

### **Columbus Avenue Improvements**

Columbus Avenue is classified as a Major Arterial between Sage Road and South Stage. Columbus Avenue extends north of McAndrews as a local access to the City maintenance facility today, but is planned to extend north to complete the missing connection to Sage Road. This new roadway will include a three-lane cross-section along with bicycle lanes and sidewalks. The project is expected to cost approximately \$3 million, with construction anticipated in 2013.

### **Springbrook – Delta Waters Realignment**

Realignment of the offset Springbrook Road/Delta Waters Road intersection is anticipated for construction in 2013. The two "T" intersections are currently offset and unsignalized, creating a discontinuous north-south route that would otherwise connect Hillcrest Road north through Owens Drive. The realigned intersection will contain center turn lanes along with pedestrian and bicycle facilities. This project is expected to cost \$760,000.

### **Lozier Lane Improvements**

In partnership with Jackson County, Lozier Lane between W. Main and Stewart Avenue is planned for urban upgrades consistent with its Major Collector classification. This project will include right-of-way acquisition and design work to accommodate a future three-lane section. Acquisition of right-of-way and design work is scheduled to be complete by 2015, and no construction timeline has yet been established.

### **Garfield Street**

Widening Garfield Street to a three-lane cross-section between Kings Highway and Peach Street is identified as a short-term priority within the Regional Transportation Plan. The project is projected to cost approximately \$620,000. Garfield Street is classified as a minor arterial along this section, and the widening of this two-lane facility to provide multimodal facilities and a better defined section will allow the facility to serve its intended functions.

### **Coker Butte Road Realignment**

As part of the OR 62 improvement plans, Coker Butte was realigned to the north and its intersection with Crater Lake Avenue was relocated and signalized. Projected costs for this project were originally estimated at \$4.6 million. This improvement was recently completed but is included as it reflects a change from the 2007 base model. Coker Butte is a Major Arterial.

### **Stanford Road**

Stanford Road currently ends south of Calle Vista Drive. This roadway would be extended south and would include a three-lane cross-section between Cherry Lane and Coal Mine Road. This project is estimated to cost \$7.5 million. Stanford Road is a major collector south of Barnett Road, and this connection will help to reduce the reliance and local accesses onto Phoenix Road.

### **Owens Drive**

Owens Drive is planned to be extended from Crater Lake Avenue beyond the UGB to Foothill Road. This widening will provide a three-lane cross-section, sidewalks, and bicycle lanes at an estimated cost of \$10 million. This project is considered a Long Range need within the RTP, and builds on other improvement projects in this area. This new connection is expected to help relieve congestion along Delta Waters Road and provide secondary access to the commercial and industrial lands near the airport.

### **Lear Way**

Lear Way is planned as a new two-lane roadway between Coker Butte and Vilas Road. This new roadway is classified as a major collector, with a primary function of relieving the parallel higher-

order facilities and providing business access. The projected cost for this long-term need is \$2.6 million.

**Coker Butte Road**

Widening of Coker Butte Road to a five-lane section between Lear Way and Haul Road is identified as a long-term improvement. Coker Butte was recently improved to the east of this segment through the intersection with OR 62 to Crater Lake Avenue. The western extension of this road will further improve the overall roadway network serving this area along the airport and OR 62.

A map illustrating the location of these programmed projects is provided in Figure 4-1.

**APPLICABLE PERFORMANCE STANDARDS**

ODOT maintains highway facilities in the Medford City limits and has their own set of mobility targets based on intersection volume-to-capacity ratios (v/c ratio). ODOT mobility standards were amended in January 2012 and are now considered mobility targets; the revised mobility targets allow higher levels of congestion within the Medford UGB. Table 1 summarizes the existing ODOT mobility targets.



**Table 1. Intersection Performance Standards by Facility Type**

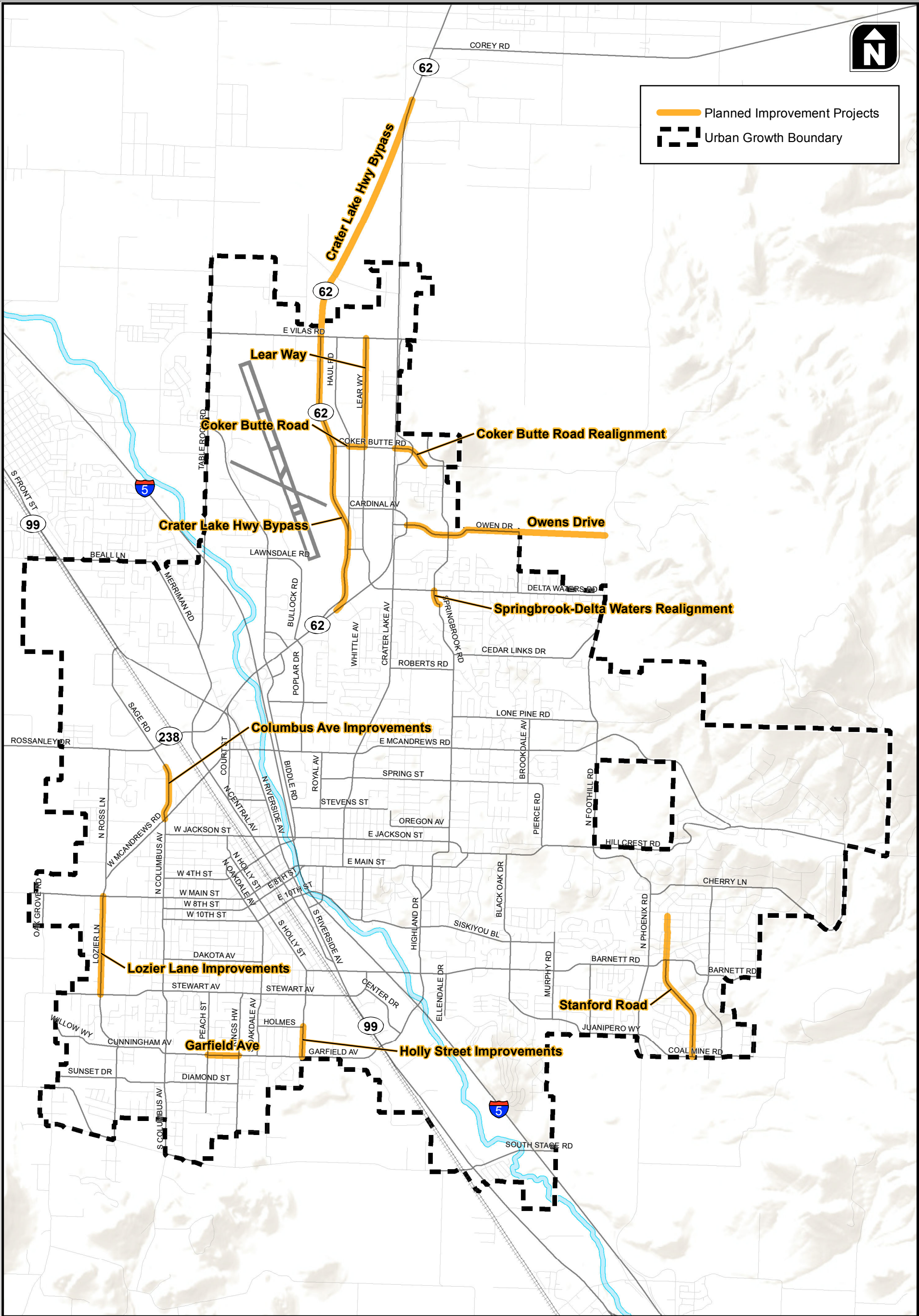
Facility	Functional Classification	Jurisdiction	Performance Standard/ Mobility Target
Interstate 5	Interstate Highway	ODOT	v/c = 0.85
Highway 62	Statewide Expressway (north of Delta Waters)	ODOT	v/c = 0.85
Highway 62	Regional Highway (south of Delta Waters)	ODOT	v/c = 0.90
Interchange Terminals	Varies	ODOT/City	v/c = 0.85/ LOS D
Highway 99	District Highway	ODOT	v/c = 0.95
Highway 238	District Highway	ODOT	v/c = 0.95

Roadways within City of Medford jurisdiction are considered deficient if they operate beyond Level of Service “D”, regardless of intersection control type. As *level of service* reflects a range of vehicular delay and varies with control type, this singular standard makes comparison between intersections with different control types difficult. At signalized or all-way stop-controlled intersections this metric describes an overall average delay experienced by motorists on all approaches. At stop-sign controlled intersections and roundabouts this delay is defined by the most difficult maneuver (*critical movement*), while other movements (typically higher-volume movements) will operate better than what is reported.





 Planned Improvement Projects  
 Urban Growth Boundary



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# Planned Improvement Projects

Figure 4-1

In addition, by definition the threshold for Level of Service “D” changes between control types. For signalized intersections Level of Service “D” is exceeded with more than 55 seconds of average delay per vehicle. At stop-sign and roundabout controlled intersections Level of Service “D” is exceeded with 35 or more seconds of delay for the most difficult maneuver. Level of service ranges for signalized and unsignalized intersections are summarized in Table 2.

**Table 2. Intersection Level of Service Ranges by Control Type**

LOS	Signalized Intersection (Average Overall Control Delay)	All-Way Stop-Controlled Intersections (Average Overall Control Delay)	Side-Street Stop & Roundabouts (Critical Movement Delay)
A	≤10 sec	≤10 sec	≤10 sec
B	10-20 sec	10-15 sec	10-15 sec
C	20-35 sec	15-25 sec	15-25 sec
D	35-55 sec	25-35 sec	25-35 sec
E	55-80 sec	35-50 sec	35-50 sec
F	≥80 sec	≥50 sec	≥50 sec

Accordingly, in reporting performance not only was the Level of Service noted, but type of intersection control and other typical metrics are also provided to better compare operations between locations and control types. For the base analysis it was assumed that City of Medford and ODOT mobility targets/standards would remain unchanged.

**SYSTEM PERFORMANCE**

As outlined within the technical appendices, forecast traffic volumes were developed at the study intersections based on land use information (as prepared by the City and ODOT within the RV3 travel demand model), traffic counts, and post-processing using the National Cooperative Highway Research Program (NCHRP) Report 255 methodology. Citywide, traffic volumes are projected to increase, on average, approximately 36 percent between the 2007 counts and 2028 forecasts, or approximately 1.5 percent annually.

Intersection operational analyses were analyzed consistent with the Highway Capacity Manual (HCM2000) methodologies. Intersection operational analysis results are illustrated in Figure 4-2, and are overlaid with segment constraints from Technical Memorandum 3 to provide a more holistic summary of the system needs.

A summary of the key findings associated with the 2028 intersection analyses is presented below, and is separated by citywide and regional trends, subarea trends, and localized needs.

## ***Citywide and Regional Trends***

As illustrated in Figure 4-2, most regional roadways are forecast to operate under constrained conditions along the key corridor segments and at the intersections. Throughout most of the UGB, I-5 is shown to operate near capacity, as are the segments and intersections surrounding Medford's two I-5 interchanges. The high travel demands along OR 62 result in highly congested conditions between Delta Waters Road and Highway 99, and the parallel system formed by Crater Lake Avenue and McAndrews Road (and Vilas Road further north) also show highly congested conditions along McAndrews. Between McAndrews Road and the south Medford interchange, east west routes generally operate well.

While much of the congestion in Medford is focused around the routes connecting to I-5, the regional connection of Foothill Road-Phoenix Road shows both intersection and corridor needs along much of its length. The section of Foothill Road that has been widened to provide five-lanes (including the intersection with Hillcrest) operates acceptably through the 2028 analysis period. Volumes on Foothill Road north of Delta Waters are relatively low compared to travel south of the Medford UGB, indicating a heavy reliance on this routes' southern connectivity to I-5 for trips from surrounding areas destined to Medford.

Review of the system needs alongside the Internal Study Areas (ISA) shows that many of the segment needs surround these lands. The ISAs are largely located in the City's periphery, and the increased density along with limited alternative routes increases the strain on the regional routes. ISAs in the southwest section of the City provide the least impact as the roadways in this area generally have higher levels of reserve capacity and a more comprehensive grid network in place.

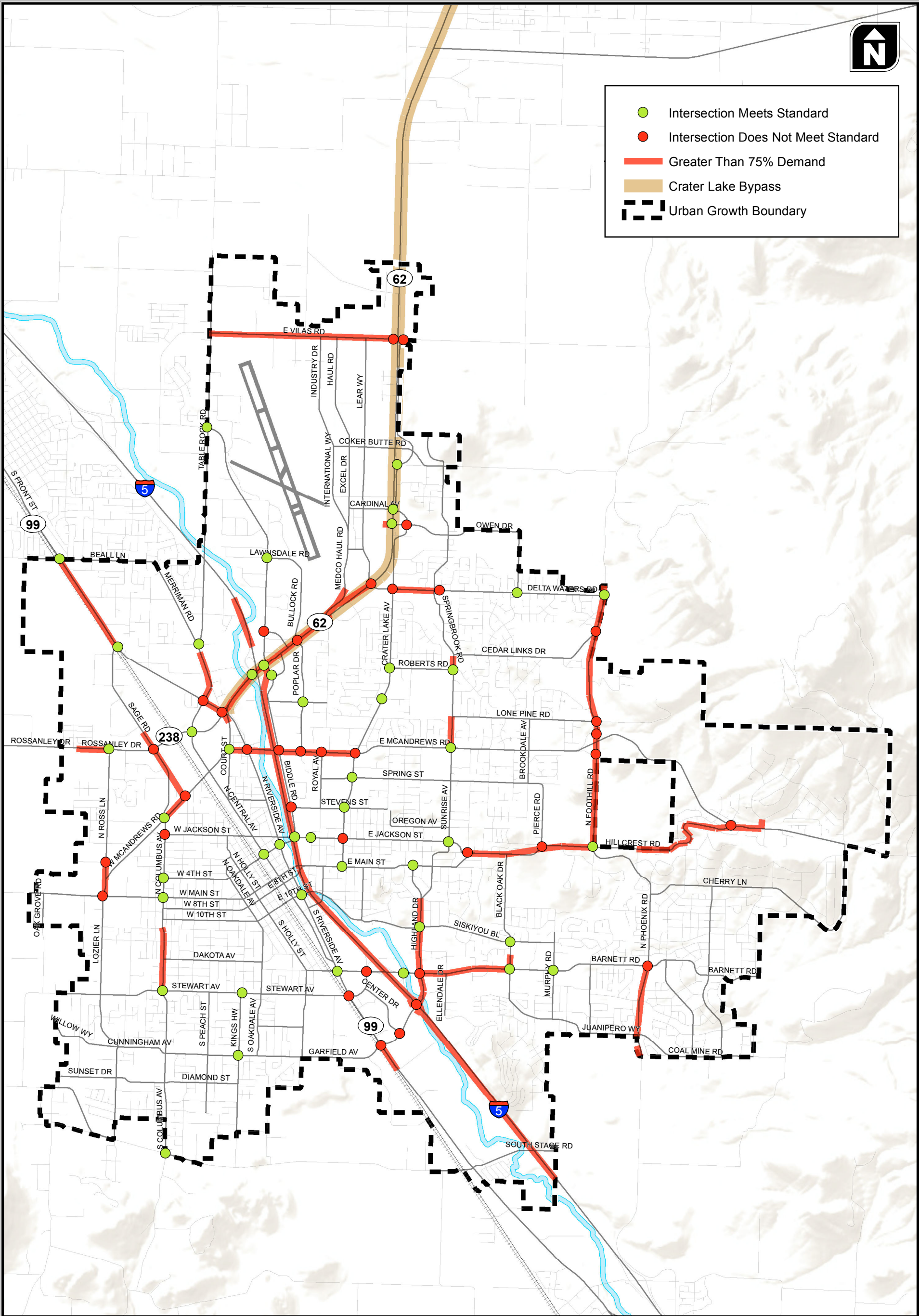
## ***Medford Subarea Trends***

Selected subareas within Medford were further reviewed to better understand the travel demands, parallel system opportunities and constraints, and identify potential solutions or problems at the network level. These seven subareas are individually described below and are illustrated in Figure 4-3.





- Intersection Meets Standard
- Intersection Does Not Meet Standard
- Greater Than 75% Demand
- Crater Lake Bypass
- Urban Growth Boundary



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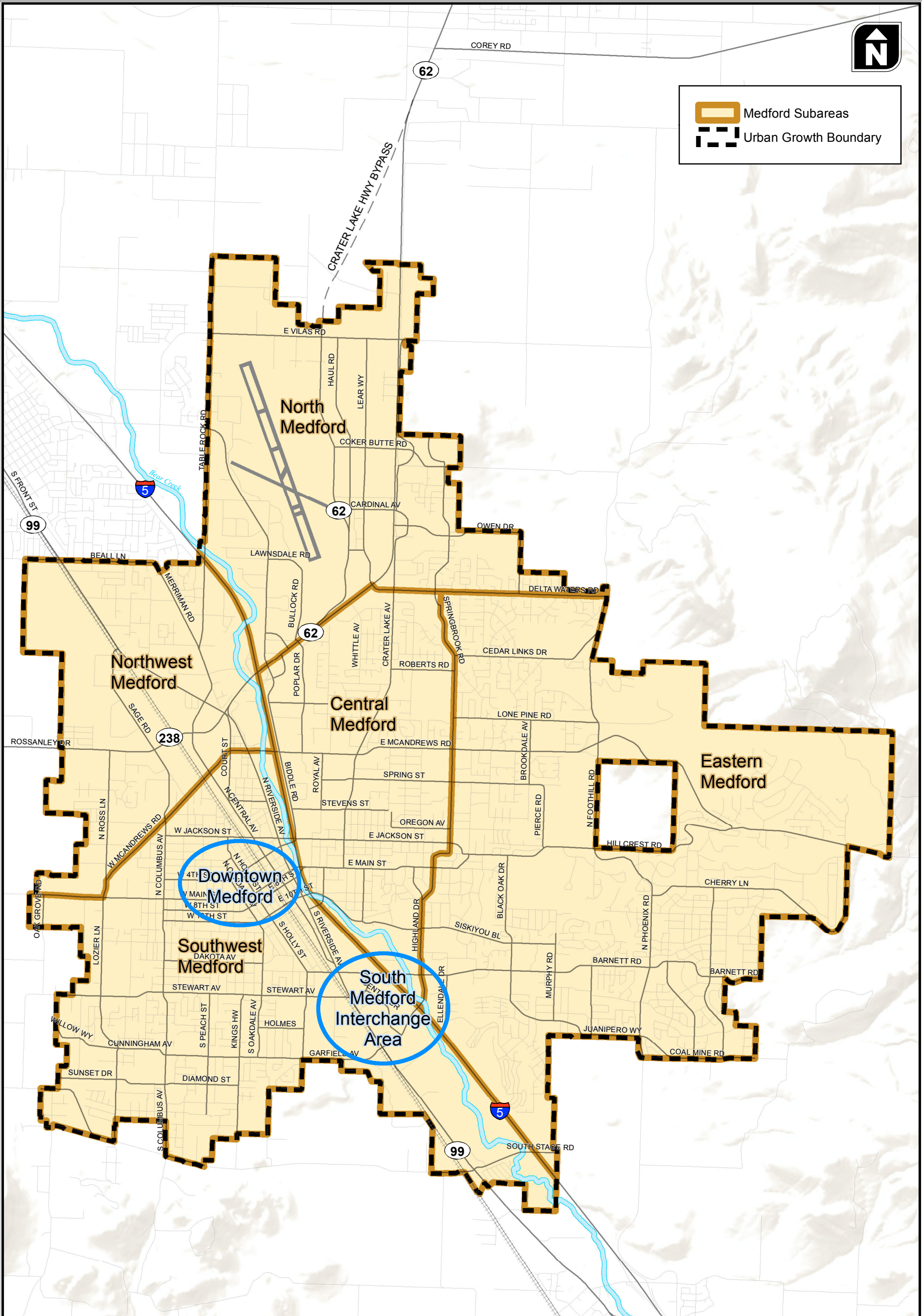
### Year 2028 Congested Segments and Intersections

### Figure 4-2





 Medford Subareas  
 Urban Growth Boundary



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# Medford Subareas

Figure 4-3

## **North Medford**

For the purposes of this analysis, the North Medford subarea includes the lands near and adjacent to the Rogue Valley International - Medford Airport. These lands serve both retail and industrial uses, and as such serve higher proportions of freight traffic destined both to these lands and along Vilas Road to and from I-5. A number of roadway and intersection improvements are planned for construction in this area as part of the Crater Lake Bypass project and on-going efforts to improve the separation between Crater Lake Avenue and OR Highway 62. Improvements are also being made to enhance the network system and capacity east-west connecting the regional shopping attractions into the City network. The effect of the planned changes and their sequencing makes accurate travel forecasts difficult to predict within this area as it has changed overall travel patterns.

Within this area, the airport constrains potential street connectivity improvements. The runway location and airport runway protection zones creates a large gap in the grid system of streets, resulting on heavy reliance on OR Highway 62 and Vilas Road for travel between Central Point and the regional retail uses. Both of these roadways are identified as congested corridors.

Although the Bypass will relieve the highway segment immediately surrounding the retail uses, the segment of OR Highway 62 between I-5 and the start of the Bypass will continue to exceed capacity, with no improvements to this portion of the facility identified or funded. Traffic volumes on the current section of OR Highway 62 will continue to be high following the bypass completion as a significant portion of the highway traffic is destined within Medford, and the limited access from the Bypass will not serve these uses.

Potential strategies to address system needs within this area:

- Enhance Vilas Road streetscape as a regional expressway, with emphasis on mobility, freight accommodations, and lower priority for access.
- Complete the planned north-south connection along Lear Way that can provide access to the adjacent lands while reducing impacts to OR 62 (bypass and the current alignment).
- Further emphasize the Table Rock I-5 overcrossing and explore ways to better connect Table Rock Road west to Highway 99. The built-out residential area that surrounds this connection may limit its function to that of a minor collector or higher order residential street, and improvement strategies beyond the Medford UGB may require collaboration with Central Point and/or Jackson County.

- The planned eastern extension of Owen Drive beyond the UGB to Foothill Road and recent improvements to Coker Butte should be protected with an interconnected network of local roadways as part of future development.

## **Eastern Medford**

The eastern Medford subarea was generally considered as the area east of the Springbrook-Sunrise corridor. As discussed within prior memoranda, the roadway network within this subarea is generally characterized by the limited connectivity and major arterial reliance within a built out residential environment. Within this area sections of Springbrook Road, the majority of the Foothill Road corridor, and much of Hillcrest show high levels of congestion at the intersections and along the corridor. The roadway network principally serves the surrounding residential uses that are generally destined toward the west.

Portions of this subarea become more constrained east of Foothill Road as the steeper topography presents additional challenges to providing a direct and interconnected roadway system. Potential improvements within this subarea include the following:

- Provide a Collector roadway connection between Cherry Lane and Hillcrest Road, ideally connecting as a new southern leg to the McAndrews Road/Hillcrest intersection. This connection would reduce the local reliance on Phoenix Road, improving its ability to serve in a regional capacity. Additional residential connections could also be used to improve the connectivity and grid network between Hillcrest Road and Cherry Lane.
- A future Collector route through the Rogue Valley Country Club should be identified should this area be redeveloped. Enhancement of a Murphy Road connection to Pierce Road to provide this link would complete a critical missing north-south segment west of Phoenix Road.
- Extend Spring Street east to Foothill Road to reduce reliance on McAndrews Road. Future I-5 crossings between Jackson Street and McAndrews should tie in with the Spring Street corridor.
- Within the built residential environment, mitigation strategies should be focused on the development of residential connections that allow local traffic to avoid reliance on the higher-order facilities. While transportation system plans typically focus on the higher-order facilities, the constrained nature of the collector and arterial system within this subarea may be best improved by completing key missing local roadway links. Key links identified include the following:
  - Extension of Roberts Road east to the Wilshire Drive/Gene Cameron intersection (providing a critical connection between North Medford High School and the residential neighborhoods).
  - Extension of the missing segment of Viewpoint Drive to connect Foothill Road and Stonebrook Drive.

- Connection between the Farmington Avenue/St Frances Drive intersection south to the Callaway Drive/Cedar Links Drive intersection.
  - Connectivity between Pennington Drive, Farmington Avenue, and Wilkshire Drive as part of future redevelopment of the Cedar Links golf course.
  - The western extension of Cedar Links Drive to connect Springbrook Road to Perri Place, and extension of Bell Court west to Temple Drive could be used to reduce the barrier created by the creek for local trips.
  - Extend Valley View Drive north of McAndrews, and ultimately extend the road to connect south to Spring Street.
- Implementation of policies that discourage cul-de-sac roadways and requirements for block length/perimeter that enforce the development of an interconnected grid network.
  - Expansion of the local roadway network system and hierarchy that requires access to specific properties be provided from the lowest-order facility.
  - Given the constrained urban areas, where right-of-way may not be available or obtainable for vehicular connections, consider development of pathways that provide direct connections to local attractions such as schools, retail uses, or businesses and development of linkages to the transit system. These efforts should be coordinated with Safe Routes to Schools programs

### **Central Medford**

This subarea was considered to contain the area east of I-5 and generally south of Delta Waters Road and west of the Springbrook-Sunrise-Highland corridor. This area is largely residential, transitioning to employment uses to the west along the I-5 corridor. Congested sections within this subarea include McAndrews Road west of Crater Lake Avenue, Highland Drive, and point locations along Biddle Road.

Within this area McAndrews Road provides a parallel east-west connection to OR 62. Given the high levels of congestion on OR 62, traffic will likely divert to McAndrews from Crater Lake Avenue to avoid the I-5 interchange and segment congestion. At the same time, McAndrews Road connects to the Rogue Valley Mall, Riverside Avenue, Providence Medical Center, Bear Creek Mall, and provides the only Bear Creek and I-5 crossing between Jackson Street and OR 62. Although McAndrews is a five-lane signalized arterial facility, additional system management improvements such as signal timing coordination, access reductions, medians, and minor capacity improvements can provide additional benefits to the corridor. Potential improvement strategies for this area are outlined below.

- Consider a new east-west overcrossing of I-5 and Bear Creek in the vicinity of Stevens Street – Austin Street/Maple Street or Edwards. The development of a connection in this



area, and connectivity to Spring Street, could substantially offload the retail and employment access functions of McAndrews Road and to an extent OR 62.

- Improve local connectivity between Poplar Drive and Crater Lake Avenue. The layout of the local street network results in a high reliance on the higher-order facilities such as Crater Lake Avenue and McAndrews Road.

### **Southwest Medford**

Southwest Medford was defined as the area south of McAndrews and west of I-5. This area is characterized by the grid network, downtown Medford, CORP railway, and outlying residential uses. Generally, this area has capacity to facilitate growth through 2028. System issues were not identified within this area, and the improvement needs are generally minor improvements at point locations. The following needs were identified in this portion of the City:

- Completion of the missing section of Lozier Lane completing its extension to Cunningham Avenue.
- Signalization of the all-way stop-controlled Jackson Street/Columbus Avenue intersection.
- Improvements to the Ross Lane/Lozier Lane corridor providing a minimum three-lane cross-section. Additional widening near major intersections will also be needed, or consideration of the segment between McAndrews and Stewart as a continuous five-lane section.
- Improvements to Columbus Avenue to provide a minimum three-lane cross-section between Stewart Avenue and McAndrews Road.
- Realign Clark Street at the Narregan Street intersection to provide a continuous east-west connection. If a new I-5 overcrossing is provided in the future along the Stevens Road alignment, connection of this overcrossing to Clark Street could provide a critical east-west corridor that would offload the arterial network.

### **Northwest Medford**

Northwest Medford was considered north of McAndrews and west of I-5. This area provides critical connections to the adjacent City of Central Point and the western connection of OR 238 (Rossanley Drive) to Jacksonville. This area also serves industrial lands that provide a higher proportion of freight in the overall traffic flow. As described within prior subareas, challenges within this area are generally a function of the I-5 connections and crossings.

Within this subarea, lands between OR 99 and I-5 are largely built-out, with mitigation strategies likely to focus on access consolidation and system management. With the junction of several regional facilities (OR 62, OR 238, Table Rock Road, McAndrews Road, and Riverside), the classification system within this area is comprised almost entirely of Major Arterial roadways with major junctions located in close proximity to each other. Strategies for this subarea include:

- Improve the Table Rock Road connection to Highway 99 to route traffic away from the constrained corridors.
- Extend Gilman Road west to Table Rock Road, providing a better connection between Table Rock and Biddle Road.
- Provide additional through travel capacity on Sage Road to reduce congestion along OR 62 and Highway 99.
- A Hwy 99 (or even Sage) to Ross Lane connection as a major collector would preserve the capacity along the higher-order Columbus Avenue corridor.

### **Downtown Medford**

Medford's downtown core contains a one-way couplet with Riverside Avenue and Central Avenue that are each three-lanes wide. This system provides ample reserve capacity for the vehicular system through the 2028 horizon. Throughout the length of these segments the right-of-way could be reallocated to improve business accessibility or respond to enhancement opportunities as redevelopment of this area occurs.

Intermodal connections within the downtown core are critical, with the Front Street Station at E 9<sup>th</sup> Street providing an important regional connection to Greyhound and Rogue Valley Transit District (RVTD) service. Improved connectivity to this critical station for pedestrian, bicycle, and transit users for key events and attractions within the downtown area would further enhance multimodal travel.

### **South Medford Interchange Area (SMI)**

The infrastructure serving the South Medford Interchange area has been substantially upgraded during the past five years. The year 2028 forecasts for this area reflect an approximately 33 percent growth from 2012 traffic counts. This higher growth, coupled with an account of how the interchange was constructed, show that the intersection will operate over capacity by 2028, with extensive queuing on the northbound I-5 off-ramp.<sup>1</sup>

An improvement option for the SMI is likely to include signalization of the right-turns. This configuration often occurs as a single traffic signal coordinated with the central intersection, and could include detection to avoid ramp overflow back to the I-5 mainline. While this may provide mitigation at the interchange, other system needs were noted on the surrounding roadways that serve the SMI.

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<sup>1</sup> Analyses prepared as part of the SMI Interchange Area Management Plan (IAMP) show that the interchange will operate at Level of Service "B" in 2030 and at less than 50 percent of its capacity. Year 2012 traffic volumes are 90 percent of the 2030 projections.

The design of the interchange and retention of the Barnett Road overcrossing helps to separate trips destined to I-5 from east-west through trips. Center Drive links Garfield, Stewart, and Barnett, providing travel options for motorists and serving access to surrounding retail uses. This configuration benefits the west side of the interchange, but east of the Garfield/Barnett intersection the travel demands consolidate onto Barnett Road resulting in overcapacity conditions at the intersection, east along Barnett Road, and to the north along Highland Drive.

Limited options are available to increase the carrying capacity of the affected roadways, so effective strategies to reduce congestion in this area may include:

- Reduce reliance on the SMI (particularly for trips destined toward the east side of Medford) by coordination with Jackson County to improve connectivity to the Fern Valley Road – Phoenix route. Provision of a southern exit from I-5 directly connecting to the regional Phoenix Road- Foothill Road route would lessen eastbound demands at the SMI.
- Coordinate with Jackson County to consider a South Stage Road overcrossing of the I-5 corridor and eastern extension to Phoenix Road. This would help relieve the east-west crossing demands at the interchange and along Barnett Road.

### **Medford Corridors**

Technical Memorandum 3 includes an assessment of the City's functional classification and facility designations, recommended changes to standard cross-sections for each facility class, and recommendations to the overall City classification system. As discussed in Memorandum 3, key recommendations associated with the corridor analyses include:

- Expand the City's Standard Residential classification to relieve pressure on the Collector and Arterial system while minimizing impacts to adjacent neighborhoods. This classification should initially focus on the east side of Medford between Barnett Road and Delta Waters Road. While lower-order facilities are generally not addressed within citywide plans, the ability of the local roadway network to relieve higher-order facilities could provide significant system improvements for vehicular and multimodal travel.
- Identify and improve an arterial system in coordination with Jackson County along Lozier Lane, McAndrews, Foothill, and South Stage Road. Development and enhancement of continuous routes can help to relieve the intra-city function of the highway and interstate system.
- Reclassify Hillcrest Road from the Phoenix – Foothill Road intersection west along Jackson Street to Crater Lake Avenue as a Minor Arterial. Providing this consistent classification throughout this route better satisfies the roadway function. The route through residential areas and the constrained right-of-way in built areas may require deviations from a standard section.
- Reclassify Springbrook Road – Sunrise Avenue between Delta Waters and Jackson Street as a Minor Arterial. Similar to Hillcrest, the location of this roadway within built

residential areas with direct driveway access may limit development of a standard section. However, removal of the on-street parking, relocation of utilities outside of the sidewalk clear space, and other improvements can be made to allow this road to better meet its intended function.

- Delta Waters Road also is located within a built-out residential area, and its current cross-section may not accommodate additional improvements. The current classification as a Major Collector prioritizes the throughput function, so that direct access onto Delta Waters from individual residences can be reduced over time as alternative options allow as the facility is currently designated. As the upgrade of Delta Waters to an ideal classification as a Minor Arterial may not be feasible within the built environment, it is recommended that for this facility that extension of the local system be applied in the surrounding neighborhoods. A hierarchical residential classification system has been started within this area, and should seek to extend beyond the current system.
- Downgrade the classification of Center Drive to a Major Collector. Despite the roadway's existing cross-section the function of the roadway is to link Stewart Avenue and Garfield Avenue, as well as collect traffic from the adjacent retail uses. The downgraded classification provides additional emphasis on serving this access role.
- Coordination with Jackson County to extend South Stage Road east to connect to Phoenix Road. South Stage is classified as a freight route, and the ability of this regional roadway to connect to the east while remaining separate from facilities serving I-5 will help preserve parallel routes.
- Identification of a future extension of Murphy Road north to align with Pierce Road as a Major Collector. This extension would occur only as part of future redevelopment of the Rogue Valley Country Club, but would help to reduce the reliance on Phoenix Road, allowing it to better serve its regional function.
- Develop a regional expressway designation for roadways that provide intercity connections. The focus of this designation should be on throughput as a means of reducing highway reliance. The regional expressway designation should be coordinated with Jackson County and other agencies for segments outside of the Medford UGB. Candidate roadways include the following:
  - Phoenix Road – Foothill Road
  - South Stage Road
  - Vilas Road
  - Table Rock Road
  - Biddle Road

Expressway facilities should be designed to accommodate freight, with a classification as City Truck Freight Route role. All of the roads recommended for this classification already contain this freight designation.



## **Localized Needs**

Often, localized intersections experience failures prior to congestion along longer corridor segments. For localized deficiencies these intersections may benefit from traffic control, travel lanes, or other minor improvements. Localized needs not addressed as part of the regional/citywide or corridor discussions are summarized below.

- The Crater Lake Avenue/Owen Drive intersection will likely warrant signalization in the future. This signalization may occur as part of the Owen Drive extension plans.
- The Delta Waters Road/Crater Lake Avenue intersection serves very high turning volumes for trips destined toward OR 62 and regional shopping attractions. Recent parallel improvements at Crater Lake Avenue/Owens Road to the north is expected to help reduce these forecast demands that would otherwise require dual northbound left-turn lanes and potentially other turn lane widening.
- The offset configuration of Springbrook Road as it intersects with Delta Waters creates two separate unsignalized intersections. The eastern leg serves a high volume of northbound left-turns. Ideally, realignment of the north and south Springbrook Road approaches and signalization of the new consolidated intersection would provide adequate mitigation and create an improved north-south connection.
- The Crater Lake Avenue/Jackson Street intersection is projected to operate with high delays and limited reserve capacity. The likely improvement would be provision of left-turn lanes, or revisiting the available mall access to consider strategies to reduce turning demands at this intersection. Given the potential costs and impacts, acceptance of higher congestion during the peak hour may be a preferred solution.
- The intersection of OR 62/Vilas Road is planned for future grade separation as part of the second phase of the Crater Lake Highway Bypass. Construction of an interchange at this location will require changes to the adjacent Crater Lake Avenue intersection (as well as other surrounding intersections to accommodate the change in roadway grades), though specific details are not yet known. This improvement is funded.
- The signalized Hilton Court/Biddle Road intersection is forecast to exceed City delay thresholds (Level of Service "E") but operate with reserve capacity in the evening commute period. This intersection serves as a key connection to OR 62 and I-5, as the Biddle Road undercrossing of OR 62 allows this intersection to serve as a southbound OR 62 interchange terminal.
- The signalized Phoenix Road/Barnett Road intersection is forecast to exceed capacity. Forecast growth on the eastern approach remains very low, and increased development in this area would further exacerbate the projected intersection operations. Likely improvement needs include dual eastbound left-turn lanes, dual northbound left-turn lanes, and traffic signal phasing changes. With future redevelopment of the Rogue Valley

Country Club extension of Country Club Drive east to Calle Vista Drive would provide alternative connections to relieve the demands at this intersection.

- McAndrews Road and Hillcrest intersect at an unsignalized three-legged “T” intersection. Capacity improvements such as a roundabout or traffic signal could allow this intersection to operate acceptably.

## **SUMMARY OF MEDFORD 2028 NEEDS**

Additional transportation improvements will be needed to accommodate build-out of the City’s Urban Growth Boundary and the increased density within the Internal Study Areas. The year 2028 transportation needs generally occur on the following facilities:

- Locations on I-5, near the I-5 interchanges, or along a key route providing access to I-5
- Regional connections within Jackson County
- Major and continuous intercity connections

One of the key findings is that the City’s higher-order facilities (typically the arterial and collector network) are serving both localized and regional roles due to the lack of an integrated local roadway network. Many of the improvements identified include local roadway extensions and connections that will allow the higher-order facilities to provide their intended function.