DRAFT Technical Memorandum #8: UGB Expansion Alternatives: Qualitative Comparison of Scenarios

Date: June 26, 2013 Project #: 10771

To: Alex Georgevitch, City of Medford

From: Joe Bessman, Julia Kuhn, and Matt Kittelson
Project: City of Medford TSP/UGB Amendment
Subject: Interim Year 2028 Updated Planning Horizon Analysis

This memo compares the City of Medford Urban Growth Boundary (UGB) expansion options (also referred to as External Study Areas, or ESA's) and their impact on the transportation network. Details on the development of these options are summarized in Technical Memorandum #7.

QUALITATIVE EVALUATION CRITERIA

Five qualitative review criteria were used to compare the UGB scenarios, including:

- Generalized infrastructure needed to support each scenario – does the scenario require new arterial/collector streets, or widening of existing roads?
- Generalized effect on congestion on existing roadways within the UGB – does the scenario contribute to already congested corridors in Medford?
- Safety impacts – Are there known safety issues that could be affected by the scenario, or could new safety issues be potentially created?
- Connectivity Issues – Do the existing roadways provide ample connectivity to serve the area, or would other connections be needed?
- Infrastructure costs – relative to the other options, what would it cost to provide the needed transportation facilities?

UGB EXPANSION OPTIONS

City staff developed four UGB expansion scenarios for review (as discussed in Technical Memorandum #7). All four scenarios include the same number of future jobs and households, with variation between scenarios in consideration of buildable lands, zoning, and in the baseline scenario consideration of accommodating all growth external to the existing UGB. . Exhibits 1 through 4 illustrate the location of the four scenarios; additional details of each are described below.

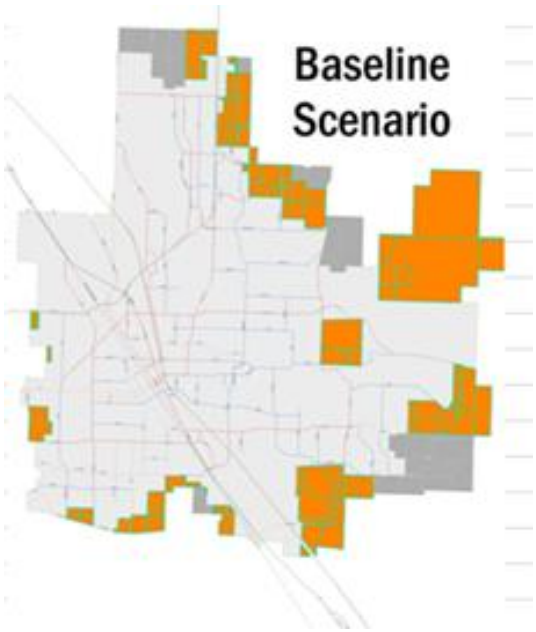


Exhibit 1. Baseline scenario assumes all Medford growth occurs outside of the current UGB with no internal upzoning.

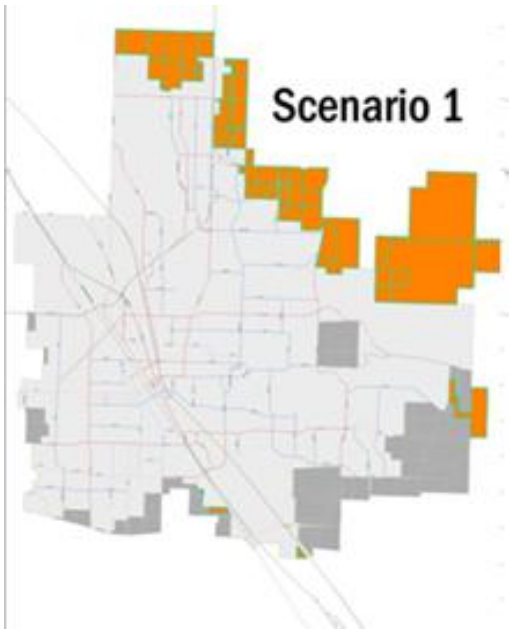


Exhibit 2. Includes internal upzoning and expansion of the UGB to the northeast.

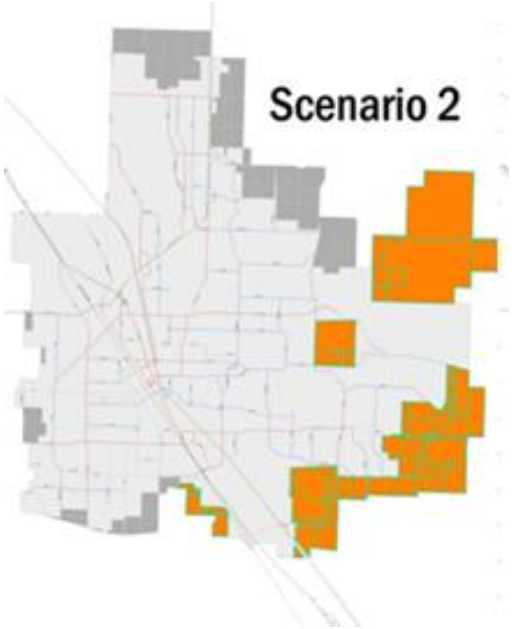


Exhibit 3. Includes internal upzoning and expansion of the UGB to the southeast and in limited portions of the southwest.

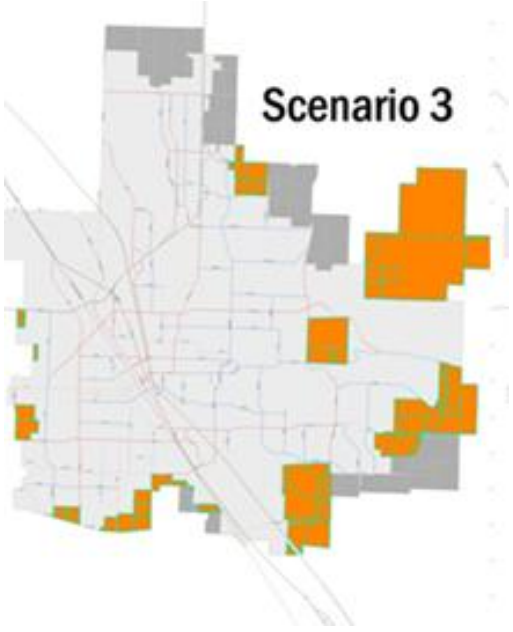
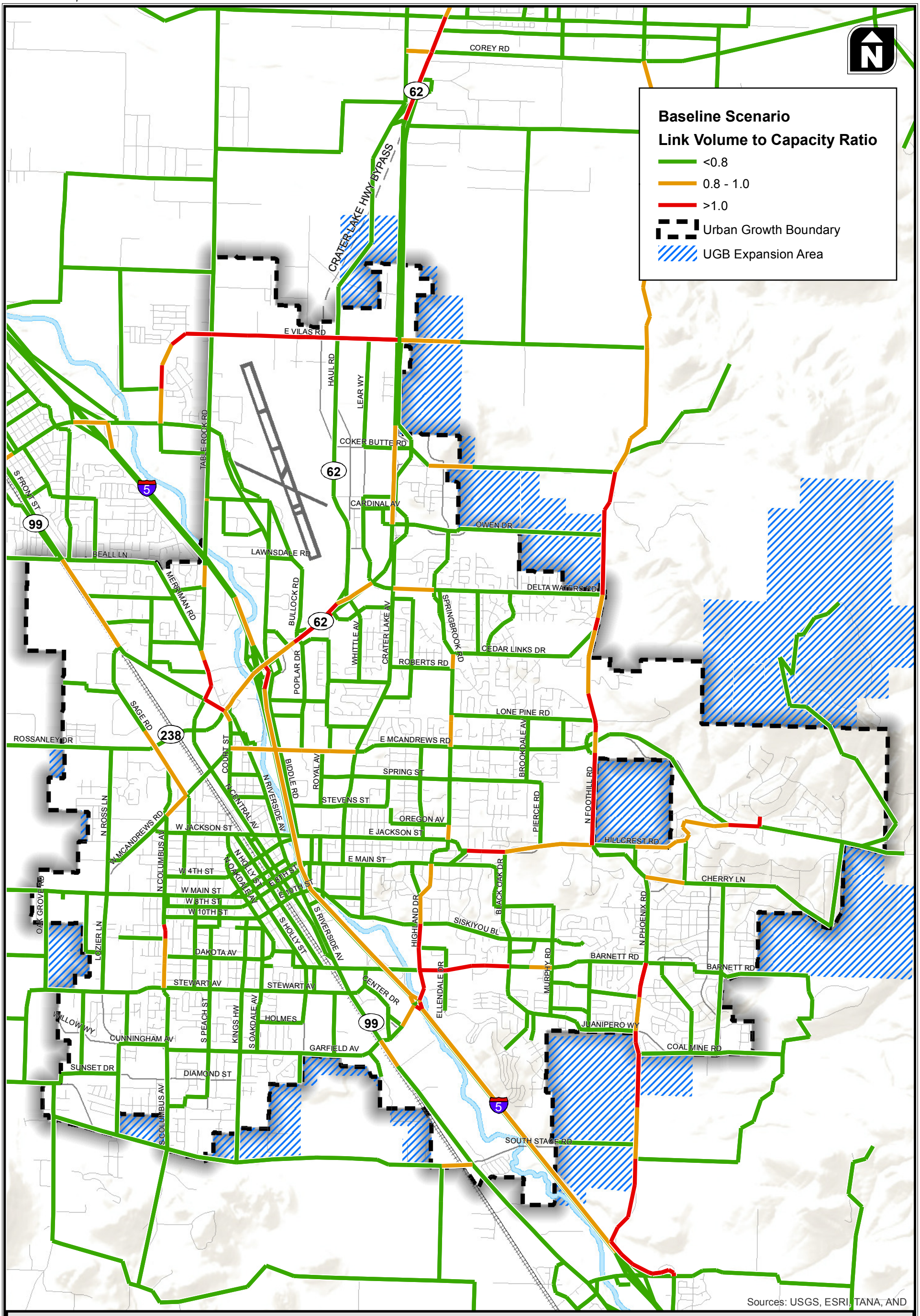


Exhibit 4. Includes internal upzoning and expansion of the UGB to the east and limited portions in the southwest.

Baseline Scenario

A summary of the key attributes of the Baseline Scenario is provided below. In general, growth is spread throughout several UGB expansion areas primarily on the northern and eastern sides of the city. In addition, this scenario does not rely on increased densities within the existing UGB. This is the most land intensive scenario being evaluated. For relative comparison purposes, Figure 1 illustrates the projected roadway segment congestion with this scenario.

Scenario Description	Supports 2038 growth without upzoning internal UGB lands; requires the most land (4,719 acres) to accommodate projected growth.
Amount of Growth	4,719 total acres of UGB Expansion (most land) • 1,908 acres of residential land • 896 acres commercial land • 29 acres industrial land • 1,886 acres open space
Infrastructure Needed to Support Development	With growth outside the UGB occurring in various areas rather than a more concentrated geographic location, a number of new collector and arterial roadways would be needed to connect the various locations into the city's existing street system. In particular, a well-connected collector system that supports access to/from Foothill Road, Vilas Road, Coker Butte Road, and Phoenix Road will be needed. These areas tend to have topographical issues that will need to be considered in the development of an effective street system for multimodal travel needs. Given the levels of congestion on the existing arterials, consideration also needs to be given to providing reasonable access to Highway 62 and I-5 from the expansion areas.
General Effect on Congestion	This scenario relies on access to a number of existing arterials that experience congestion today, such as: • OR 62 – Crater Lake Highway • Vilas Road • Phoenix – Foothill Road • Hillcrest Road • I-5 • Barnett Road
General Effect on Safety	Today, sections of Foothill-Phoenix and Hillcrest Road are narrow and windy with limited facilities for pedestrian and bicycle travel near the UGB. Improvements to these facilities would be needed to provide for multimodal travel. In addition, added travel would occur along the Crater Lake Highway and at existing I-5 interchanges, which have documented safety issues today.
General Effect on Connectivity	New connections would largely be needed in various areas to support the arterial system on the east side of the City. Today, very few streets exist in the UGB areas to support additional growth, primarily due to topography issues.
Generalized Costs	Relative Cost: $$$ (Highest of all Scenarios due to geographic scope of needed infrastructure)



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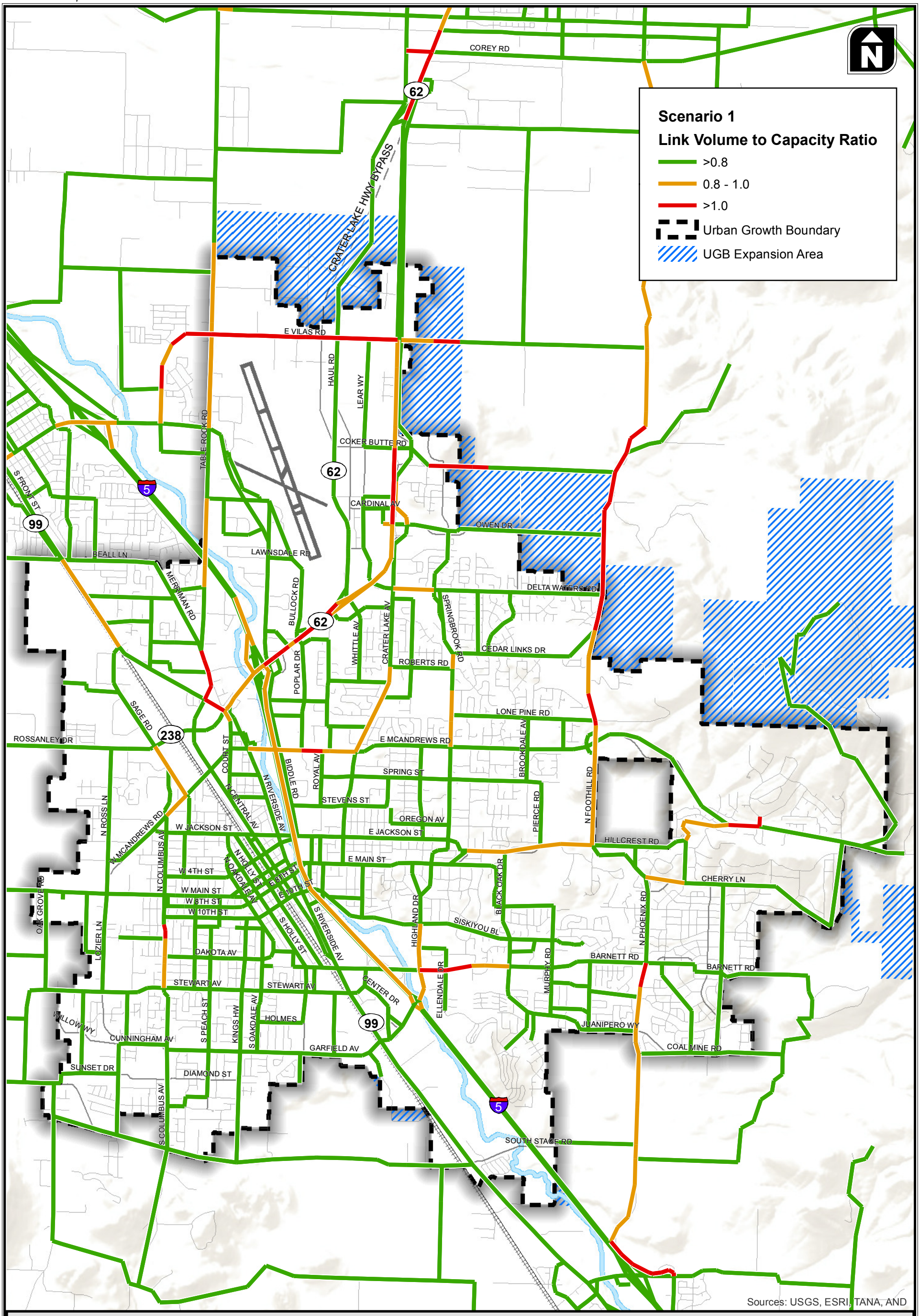
Baseline Scenario: No Increase to Internal Density

Figure 1

Scenario 1: Northeastern UGB Expansion

A summary of the key attributes of Scenario #1 is provided below. In general, growth is concentrated to the east of the Crater Lake Highway and north of Hillcrest Road. In addition, this scenario relies on increased densities within the existing UGB. This is the least land intensive scenario being evaluated, requiring 20 percent fewer acres of expansion than the Baseline Scenario. Figure 2 illustrates the potential roadway segment congestion associated with this scenario.

Scenario Description	Expansion of the UGB to the north and northeast; requires the least total land of all scenarios.
Amount of Growth	3,814 total acres of UGB Expansion (Least land-intensive) • 1,081 acres of residential land • 423 acres of commercial land • 424 acres industrial land • 1,886 acres open space
Infrastructure Needed to Support Development	High reliance on the Crater Lake Highway and Foothill Road would necessitate improvements to these facilities. A new north-south arterial may also be needed. Further, an extensive local collector street system to support the Foothill Road, Crater Lake Highway, Coker Butte Road and Delta Waters Road corridors will be needed to serve expansion in this area.
General Effect on Congestion	This scenario will place additional pressures on the congested arterial system in the northeast area of the city, such as the Crater Lake Highway, Vilas Road, Foothill Road, Coker Butte Road, as well as the intersection of key roadways with the Crater Lake Highway. The ability to expand these facilities or add new roadways in built areas will be very challenging due to existing land use and topographic constraints.
General Effect on Safety	Today, sections of Foothill Road are narrow and windy with limited facilities for pedestrian and bicycle travel near the UGB. Improvements would be needed to provide for multimodal travel. In addition, additional demand will be placed on Crater lake Highway and the collectors and arterials that intersect it; this highway and its intersections have documented safety issues today.
General Effect on Connectivity	The arterial and collector system in northeast Medford is very limited today. A well connected grid network of streets will be needed to support growth in this area. In addition, new north-south routes would be needed to provide a parallel system of roadways to the Crater Lake Highway. Options to provide this connectivity will be limited by the airport, Bear Creek, and the existing topography.
Generalized Costs of Infrastructure	Providing a well-connected grid system in the northeastern area of the City would be costly due to topographic and land use constraints. Relative Cost: $$ (likely higher than Scenarios 2 and 3 but lower than the Baseline)



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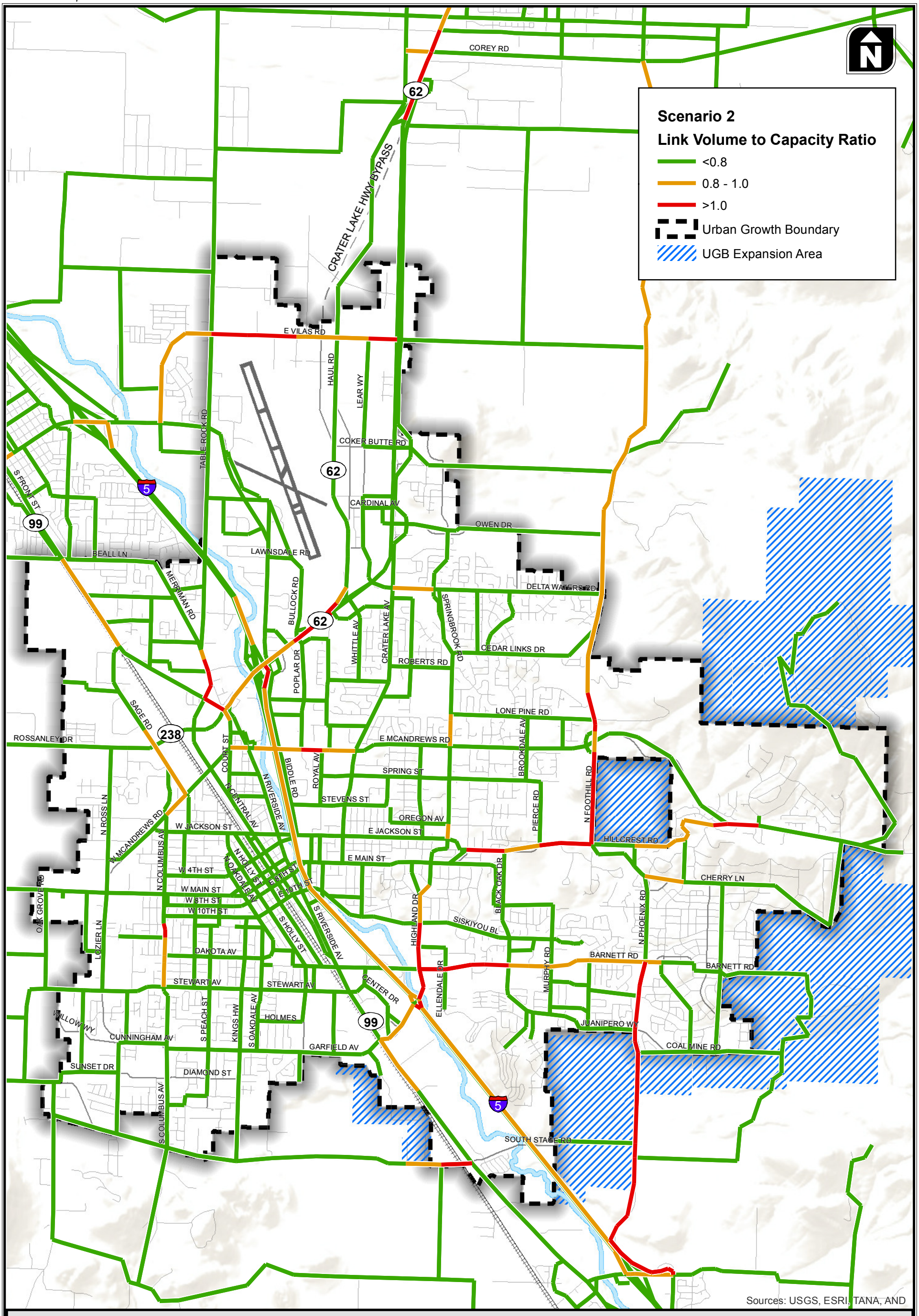
Scenario 1: Northeastern UGB Expansion

Figure 2

Scenario 2: Eastern UGB Expansion

A summary of the key attributes of Scenario #2 is provided below. This scenario focuses growth in areas southeast of the UGB as well as northeast of Hillcrest Road/Foothill Road. Like Scenario 1, this scenario relies on increased densities within the existing UGB and requires 15 percent fewer expansion acres than the Baseline Scenario. Figure 3 illustrates the projected levels of congestion associated with this scenario.

Description	Expansion of the UGB largely to the southeast and east.
Amount of Growth	4,035 total acres of UGB expansion (15 percent lower than the Baseline Scenario) • 1,664 acres residential land • 395 acres commercial land • 89 acres industrial land • 1,886 acres open space
Infrastructure Needed to Support Development	This scenario places higher demands on the Phoenix Road, Foothill Road, Hillcrest Road and Barnett Road corridors than other scenarios considered. The Foothill-Phoenix Road corridor would likely require widening. In addition, a well-connected roadway system that supports South Stage, Foothill, Hillcrest and Barnett is needed.
General Effect on Congestion	Congestion on the State system is generally reduced compared to other scenarios. Higher levels of congestion are expected on the arterials in the southeast part of the city. The ability to make improvements to these arterials is somewhat limited by the existing built environment. However, in general, the increased demands occur on facilities with more capacity for future development than the Baseline and Scenario 1.
General Effect on Safety	The areas within the city with documented safety issues are less impacted by this scenario than some of the other scenarios being considered. Multimodal improvements to the Foothill Road-Phoenix Road corridor will be needed; as discussed previously, sections of this corridor are narrow and windy with limited facilities for pedestrian and bicycle travel near the UGB.
General Effect on Connectivity	A well connected grid network of streets will be needed to support growth in this area that provides connections to the Foothill Road-Phoenix Road, Barnett Road, South Stage, and Hillcrest Road corridors. In addition, a new north-south route to support Foothill Road-Phoenix Road corridor may be helpful.
Generalized Costs of Infrastructure	The transportation infrastructure needed to support growth in a more concentrated area of the city with more capacity than other areas results in lower infrastructure costs in general. Relative Cost: $ (Lowest, Similar to Scenario 3)



Scenario 2: Eastern UGB Expansion

Figure 3

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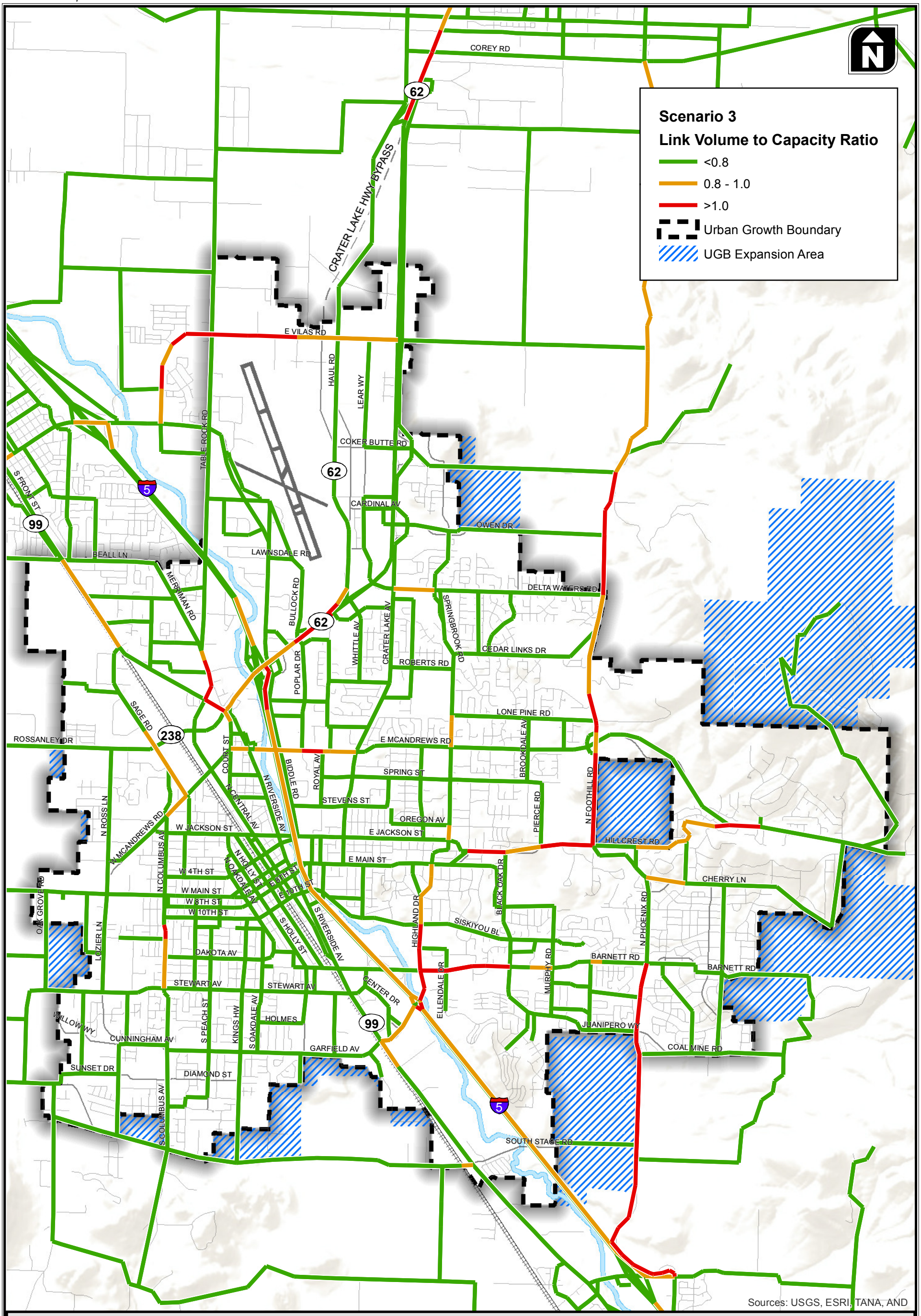
Scenario 3: Eastern and Southwestern UGB Expansion

The key aspects of Scenario #3 are summarized below. This scenario concentrates growth in areas similar to Scenario 2, although with fewer lands expected in the southeast. Like Scenarios 1 and 2, this scenario relies on increased densities in the existing UGB and requires 20 percent fewer lands than the Baseline scenario. Figure 4 illustrates the projected levels of congested associated with this scenario.

Description	Expansion of the UGB to the east and portions of the southwest UGB.
Amount of Growth	3,846 Total Acres of UGB Expansion (20 percent less than Baseline) • 1,520 acres of residential land • 411 acres of commercial land • 29 acres industrial land • 1,886 acres open space
Infrastructure Needed to Support Development	This scenario places higher demands on Foothill Road, Hillcrest Road, and Phoenix Road (although to a lesser extent than Scenario #2). Like Scenario #2, these existing roadways may need improvement to serve multimodal needs. Further a well-connected grid network that supports these existing facilities would be needed.
General Effect on Congestion	This scenario has similar impacts as Scenario 2 although lower impacts are provided to the Barnett Road corridor.
General Effect on Safety	Like Scenario 2, the areas impacted are not those with extensive documented safety issues. In addition, multimodal improvements will be needed especially near the UGB.
General Effect on Connectivity	Like Scenario #2, a well-connected grid network of streets will be needed to support growth in this area with connections to the Foothill Road-Phoenix Road, and Hillcrest Road corridors. In addition, a new north-south route to support Foothill Road-Phoenix Road corridor may be helpful.
Generalized Costs of Infrastructure	Like Scenario #2, the infrastructure needs associated with this scenario area less significant than other scenarios considered. Relative Cost: $ (Similar costs to Scenario 2)



Scenario 3: Eastern and Southwestern UGB Expansion

Figure 4

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SUMMARY OF SCENARIOS

Comparison of the scenarios noted several improvement needs that would be required regardless of the UGB scenario pursued. These are outlined below:

- Need to improve the Phoenix – Foothill connection as high levels of congestion are anticipated. This would likely require a five-lane cross-section from the
- Congestion noted along all northern crossings of I-5: Vilas Road, Crater Lake Highway, and McAndrews Road.
- Moderate to high levels of congestion at and surrounding the I-5 interchanges.
- Columbus Avenue congestion between Stewart and Main Street

Differentiating characteristics between scenarios are summarized below.

- The Baseline Scenario (all growth external to the existing UGB without upzoning internal lands) would be the most costly scenario to support. The additional lands required on the City's periphery place a high reliance on the arterial network both in the southeastern and northern portions of the City.
- Scenarios 2 and 3 provide the lowest costs relative to the other scenarios as improvements are limited to the southeast portion of the City. The improvements in this area would benefit all of the scenarios assessed, and would be implementable given the largely unbuilt areas surrounding these corridors.
- Scenarios 2 and 3 reduce congestion on I-5 and OR 62, where improvements will be very costly or infeasible.
- Southwestern growth in Scenario 3 presents no additional roadway infrastructure needs as the network in this portion of the City is well established and operating with reserve capacity.

Please let us know if you have any questions or comments regarding this qualitative comparison of UGB scenarios.