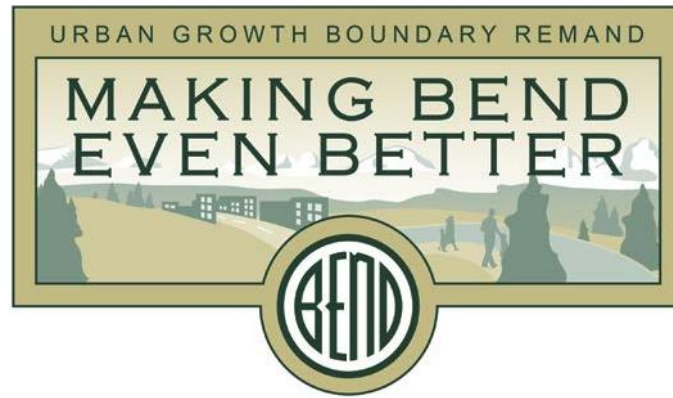




Bend Urban Growth Boundary Expansion Scenarios Evaluation Report

October 1, 2015



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EXECUTIVE SUMMARY

The purposes of the Urban Growth Boundary (UGB) Expansion Scenarios Evaluation Report are to:

1. Summarize the results of the project team's evaluation of the UGB Expansion Scenarios and Supplemental Analysis Areas, including initial observations about which scenario and subareas appear to offer the greatest advantages relative to the performance measures analyzed;
2. Provide a factual and interpretive basis for the Boundary and Growth Scenarios Technical Advisory Committee (Boundary TAC) to use in directing the creation of a preferred scenario (which may be a hybrid of the best performing elements of several scenarios); and
3. Provide initial observations and draft recommendations about which scenario appears to offer the greatest advantages relative to the performance measures analyzed; and to suggest potential modifications that could improve its performance.

In June 2015, the Boundary TAC and the UGB Steering Committee (USC) approved three alternative UGB Expansion Scenarios for further evaluation, and directed the project team to evaluate additional land in "Supplemental Analysis Areas" in order to provide some flexibility when the proposed UGB is crafted. The UGB Expansion Scenarios and Supplemental Analysis Areas test different choices about where to accommodate future housing and employment growth outside the current UGB as a way to understand the trade-offs through the evaluation.

The Boundary TAC and USC, as well as the city's Legal Department, emphasized the importance of giving the Supplemental Analysis Areas a comparable level of analysis to the land included in UGB Expansion Scenarios. To achieve this, the team created three Supplemental Analysis Area Maps ("SAAMs") that collectively incorporate all the land in the Supplemental Analysis Areas in packages with roughly the same total levels of employment and residential growth and the same assumptions about development inside the UGB as the Expansion Scenarios. The areas tested by each of the SAAMs are listed in brief below; descriptions and maps of both the Scenarios and SAAMs are provided in the main report (the scenarios have not changed since their approval by the USC in June).

- SAAM-1: Full Shevlin Area and full Northeast Edge
- SAAM-2: Full OB Riley and Gopher Gulch Area
- SAAM-3: Full West Area

State statute and administrative rules govern how cities must evaluate potential UGB expansions. Local governments must consider and balance four factors listed in Statewide Planning Goal 14:

1. Efficient accommodation of identified land needs;
2. Orderly and economic provision of public facilities and services;
3. Comparative environmental, energy, economic and social consequences; and

4. Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.¹

A local government must show that all the factors were considered and balanced, but state law and rules do not prescribe how or whether to weight specific factors or what should be included in the consideration of each factor. The city has an opportunity to consider and balance the factors based on community goals and priorities. The city is also obligated to base its UGB decision on substantial evidence and findings that are well documented, and to be clear about the facts, reasoning and balancing used for the decision.

About the Evaluation

This evaluation report uses the following terms and hierarchy of considerations in the comparison, evaluation and balancing of Bend's UGB expansion alternatives.

- **Performance Measures** – Detailed measures for each Goal 14 factor: the factual base for the evaluation. Some performance measures are quantitative and others are qualitative.
- **Community Outcomes** – Eight intended outcomes that provide a way to “roll up” performance measures, “see the forest for the trees”, and state what Bend is trying to achieve with this UGB update. They mirror the applicable Project Goals that were approved by the USC in September, 2014.
- **Goal 14 Factors** – Oregon's requirements for what must be considered and balanced (see above).

The Community Outcomes (**bold type**) and a summary of the performance measures under each Goal 14 Factor are listed below.

Factor 1: Efficient accommodation of identified land needs

- **Complete Communities and Great Neighborhoods**: walkability to schools, parks, and businesses; jobs/housing balance, and opportunities for master planning
- **Efficient, Timely Growth**: total expansion, density, land contiguous to existing UGB, and vacant vs. developed land included

Factor 2: Orderly and economic provision of public facilities and services

- **Balanced Transportation System**: reliance on the automobile (vehicle miles traveled per capita or VMT, trip length, mode split, walk trips), congestion, safety and connectivity, proximity to transit, and intersection density
- **Cost Effective Infrastructure**: total cost and cost per acre of transportation and sewer improvements, new miles of local roads, water system improvements in city water service area, impervious surface area, and development in welded tuff geology and Drinking Water Protection Areas

¹ ORS 197.298, effective 1999; and OAR 660-024-0060, effective April 16, 2009.

Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)

- **Quality Natural Environment** (Environmental and Energy Consequences): development in wildlife areas, development adjacent to riparian areas, wildfire hazard, greenhouse gas emissions, energy use, and water consumption
- **Housing Options and Affordability** (Social Consequences): cost and mix of new housing
- **Strong Diverse Economy** (Economic Consequences): site suitability for commercial and industrial uses and for the large lot special site need

Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB

- (1) **Compatibility with Farms and Forests:** farm practices on high value farm land adjacent to expansion areas, impact to irrigation districts, and proximity to forest land

In Phase 1, the Boundary TAC and USC directed the team to use an “unweighted” (or, more precisely, an equally-weighted) approach to combining results from different indicators used to identify overall suitability of different areas to be considered for inclusion in potential expansion areas. For the scenario evaluation, neither the Boundary TAC nor the USC provided specific guidance on how the performance measures should be weighed and balanced against one another. To help test the sensitivity of individual performance measures on the ranking of the scenarios, the project team has analyzed the performance measures and has evaluated overall results using *both* an equally-weighted and an unequally-weighted approach, including several variations of weighting. Because some of the performance measures showed little variation among the scenarios, others capture advantages or disadvantages that are easily modified through implementation (e.g. location of a park or school), and others showed relatively significant and meaningful differences between the scenarios, the project team recommends that the “difference makers” be given greater consideration in reaching a decision on the preferred UGB. These “difference makers” include total cost of transportation and sewer improvements, residential land efficiency, affordability, and VMT. Additional performance measures that are especially important at the subarea level include development in wildlife areas and adjacent to riparian areas, wildfire hazard, proximity to farms and forests, irrigation district impacts, and suitability for commercial and industrial uses. It is important to note that the update of Bend’s UGB is not intended to be a numerical exercise and points-based decision. Rather, it is intended to be a determination of which choices, on balance, best meet the Goal 14 factors and Project Goals (as expressed in the Community Outcomes).

Summary of Results

Based on the body of work captured in this evaluation report, in considering and balancing the four Goal 14 Factors, Scenario 2.1 performed the best of the alternatives overall, regardless of whether and to what degree weighting is applied to distinguish between the more and less important performance measures. Scenario 2.1 was in the “top tier” relative to other alternatives on nearly all community outcomes, including:

- (1) Complete Communities and Great Neighborhoods (because it was created with the intention of providing for complete communities in all quadrants of the city);

- (2) Efficient, Timely Growth (because of its efficient use of residential land and reliance on large, vacant parcels);
- (3) Balanced Transportation System (because of the above advantages plus enhanced connectivity due to the extension of Murphy Road to 27th / Knott and keeping growth in the northeast focused to nodes along major east-west corridors);
- (4) Cost-Effective Infrastructure (because of relatively low cost for both connectivity- and capacity-related transportation improvements and reasonable costs for sewer improvements);
- (5) Quality Natural Environment (because it avoids riparian areas, limits expansion in wildlife areas, does not have any features that prevent mitigation of wildfire risk in any expansion areas, and has fairly low energy and water consumption and greenhouse gas emissions); and
- (6) Housing Options and Affordability (because it has good housing mix in nearly all subareas and good housing affordability with significant housing growth in the southeast²).

The two Community Outcomes where Scenario 2.1 was not in the Top Tier were Strong Diverse Economy (because it places employment and commercial uses in some areas, such as the West Area, where they are somewhat less well suited) and Compatibility with Farms and Forests (because it has relatively more impact to Arnold Irrigation District from inclusion of full Elbow area and development adjacent to several commercial farms, including the greatest amount of development next to a feed lot south of Knott Road).

No other alternative had as strong performance on as many community outcomes, and each of the other alternatives has at least one important weakness identified through the evaluation:

- Scenario 1.2 performs poorly on cost-effective infrastructure, because heavy development in the Thumb triggers the need to widen Knott Road to three lanes.
- Scenario 3.1 performs poorly on cost-effective infrastructure, due to high transportation costs to connect growth areas and the need to widen US 20 from Robal Rd to 3rd Street. It also performs poorly on compatibility with farms and forests due to heavy impacts to Swalley Irrigation District in OB Riley / Gopher Gulch and forest proximity in the Shevlin Area and on Housing Options and Affordability because much of the residential development is focused on the west side of the city where land costs and housing prices are higher. It performs relatively poorly on Quality Natural Environment because including the Shevlin Area impacts wildlife areas, puts development in proximity to Tumalo Creek, and has topography that makes wildfire hazard difficult to mitigate.
- SAAM-1 performs poorly on multiple Community Outcomes. It performs poorly on Quality Natural Environment because including the full Shevlin Area impacts wildlife areas, puts development in proximity to Tumalo Creek has topography that makes wildfire hazard difficult to mitigate. It performs poorly on Cost-Effective Infrastructure

² Housing costs for new construction were found to be roughly 30% lower in neighborhoods on the outer east side of the city relative to neighborhoods on the outer west side of the city. Housing in expansion areas is assumed to follow this trend.

because development of the full Shevlin Area requires a costly new regional pump station for sanitary sewer, and it also has fairly high cost for new roads connecting growth areas and high costs for intersection improvements. SAAM-1 also rated relatively poorly on Complete Communities and Great Neighborhoods and Efficient, Timely Growth because the outer extents of the Shevlin Area and Northeast Edge are not well-suited to higher-density housing and have less proximity to commercial services, schools, and/or parks.

- SAAM-2 performs poorly on Balanced Transportation System, due to the lack of connectivity to the existing UGB from the Gopher Gulch area and the distance to reach key destinations inside the current UGB. It also performs relatively poorly on Compatibility with Farms and Forests due to heavy impacts to Swalley Irrigation District and proximity to the greatest number of working farms.
- SAAM-3 performs relatively poorly on Housing Options and Affordability because all of the residential development is focused in the West Area, which is more expensive (as noted above), and on Cost-Effective Infrastructure because including the full West Area (particularly the northwest portion) requires a costly new regional pump station.

The conclusion that Scenario 2.1 performed the best is only a starting point for crafting the proposed UGB update. The subarea evaluation provides a finer grain of analysis and insights into how to balance the Goal 14 factors and achieve the Community Outcomes. Additional evaluation at the subarea level shows that there is room for improvement of Scenario 2.1 through modifications to some of the subareas, as summarized in brief below.

- North Triangle: employment-focused rather than including residential
- Northeast Edge: drop the roughly 40-acre Bear Creek Road area, shifting that growth to create more complete neighborhoods around Butler Market Village and/or Neff Road, while retaining the focus on nodes along existing arterial corridors connecting to the city center
- DSL Property: include large lot industrial site at the southern end and refine land use assumptions
- The Elbow: refine arrangement of land uses along Knott Road to minimize impacts to the adjacent farms and feed lot operations
- The Thumb: refine land use assumptions and include a high school and a community park but reduce total expansion area somewhat
- West Area: reduce the amount of commercial and industrial use in this subarea
- Shevlin: none, follow Scenario 2.1 (area excluded)
- OB Riley / Gopher Gulch: remove large lot industrial use from this area (replace with other employment uses)

Next Steps

At the Boundary TAC meeting on October 8th, the project team will present a summary of this evaluation report and the Boundary TAC will have the opportunity to discuss and understand the body of work and the project team's preliminary recommendations. On October 22nd, the Boundary TAC will reconvene to discuss the creation of a preferred scenario and provide

direction for the preferred/hybrid scenario. The project team recommends that the Boundary TAC begin the process of creating the preferred scenario by agreeing on one of the alternatives evaluated as a starting point, and then identifying and agreeing on a list of refinements and improvements.

INTRODUCTION

Purpose and Background

The purposes of the Urban Growth Boundary (UGB) Expansion Scenarios Evaluation Report are to:

1. Summarize the results of the project team's evaluation of the UGB Expansion Scenarios and Supplemental Analysis Areas, including initial observations about which scenario and subareas appears to offer the greatest advantages relative to the performance measures analyzed;
2. Provide a factual and interpretive basis for the Boundary and Growth Scenarios Technical Advisory Committee (Boundary TAC) to use in directing the creation of a preferred scenario (which may be a hybrid of the best performing elements of several scenarios); and
3. Provide initial observations and draft recommendations about which scenario appears to offer the greatest advantages relative to the performance measures analyzed, and, potential modifications that could improve its performance.

In June 2015, the UGB Steering Committee (USC) for the Bend UGB Remand project approved three alternative UGB Expansion Scenarios for further evaluation, as recommended by Boundary TAC. The USC directed the project team to evaluate additional land in "Supplemental Analysis Areas" in order to provide some flexibility in crafting the final UGB. The UGB Expansion Scenarios and Supplemental Analysis Areas test different choices about where to accommodate future housing and employment growth outside the current UGB.

The evaluation included transportation analysis, water and sewer system optimization, and a variety of land use, economic, social, and environmental evaluations, described further on page 17. The evaluations have been structured to provide information about how the UGB Expansion Scenarios and Supplemental Analysis Areas perform relative to the factors required for consideration by the state, but also relative to the Project Goals, which capture local priorities. This is described further on page 17.

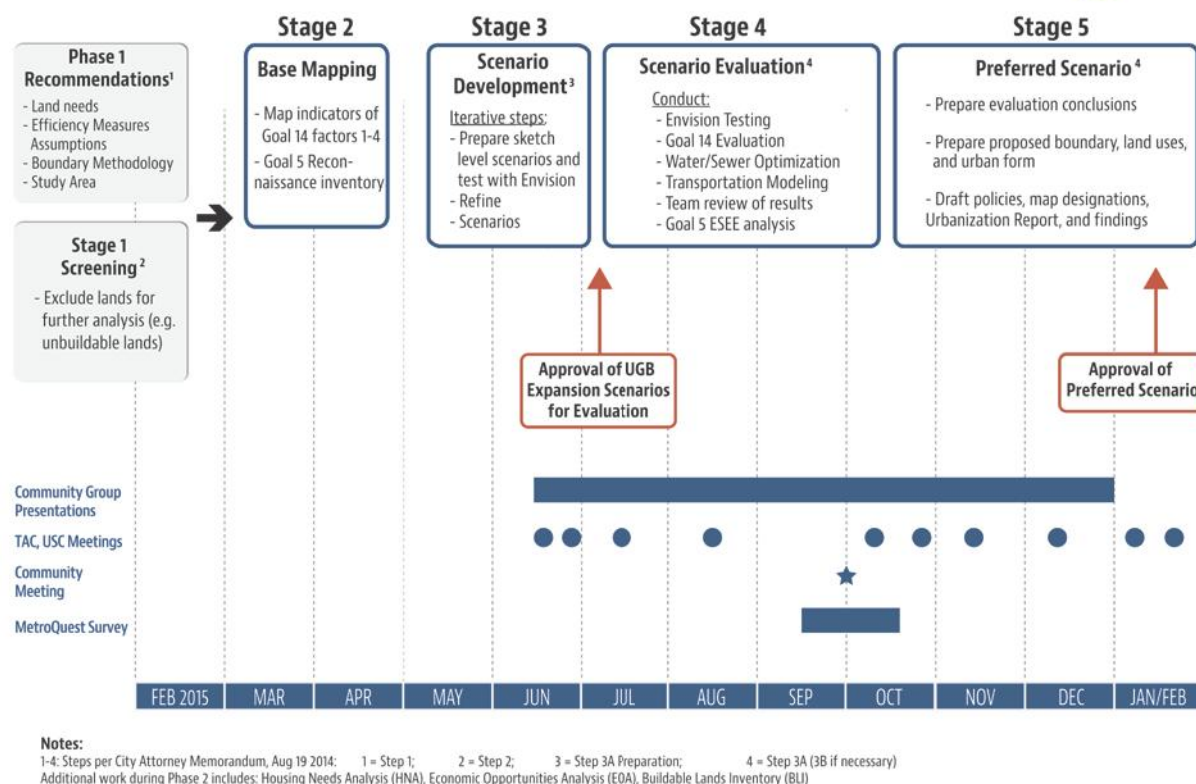
As a reminder, the scenario evaluation is "Stage 4" in the process of identifying the preferred UGB expansion, as shown on Figure 1.

Figure 1: Phase 2 Milestones Chart

Phase 2 Milestones

rev. 9/29/2015

Preliminary and Subject to Change



About the Scenarios & Supplemental Analysis Areas

Overview

As noted above, the Boundary TAC recommended and USC approved three specific UGB Expansion Scenarios for evaluation, but also asked the project team to evaluate all land that had been given the top rating (i.e. scored in the top quartile when all indicators were combined) during the “Stage 2” evaluation of exception land within the two-mile study area and had not been excluded by subsequent refinements and narrowing.³ The areas that met those tests and were not included in one of the three UGB Expansion Scenarios were identified as “Supplemental Analysis Areas” by the project team in the June 2015 meetings. The Boundary TAC and USC, as well as the city’s Legal Department, emphasized the importance of giving the Supplemental Analysis Areas a comparable level of analysis to the land included in UGB Expansion Scenarios.

³ “Stage 2” evaluation considered key indicators of the four factors of Goal 14 that could be assessed based on the land itself, without specific assumptions about the arrangement of land uses.

Some of the models used for scenario evaluation (such as the transportation model) require “budgeted” land use assumptions in order to do a full evaluation and an “apples to apples” comparison against land included in the three UGB Expansion Scenarios. In order to respond to the direction for equal evaluation, the team created three Supplemental Analysis Area Maps (“SAAMs”) that collectively incorporate all the land in the Supplemental Analysis Areas in packages with roughly the same total levels of employment and residential growth and the same assumptions about the amount and type of development that can be accommodated inside the UGB as the UGB Expansion Scenarios.

The SAAMs are intended to test full utilization of certain geographic areas rather than distributed growth across a variety of potential expansion areas. The arrangement of land uses in the SAAMs is more conceptual than in the UGB Expansion Scenarios. The land use assumptions for each SAAM are based on workshop input where possible, property owner conceptual plans if available, and general land suitability characteristics (i.e. whether the area is suitable for commercial, industrial or residential use based on transportation access, visibility, topography, adjacent land uses, etc.). These assumptions are summarized in brief on page 10; the descriptions of the UGB Expansion Scenarios are also provided on page 10 for ease of reference; these scenarios have not changed since their approval by the USC in June.

The UGB Expansion Scenarios and SAAMs are described and illustrated below. The categories shown on the generalized scenario maps are as follows:

- *Residential area with locally-serving employment*: Predominately residential uses, with supportive uses such as parks, schools, and local commercial centers.
- *Residential area with significant employment*: A full mix with residential uses, parks and/or schools, and commercial and employment areas.
- *Employment area*: Employment-focused area providing for a mix of jobs (retail, office, and/or industrial) with little or no residential use.

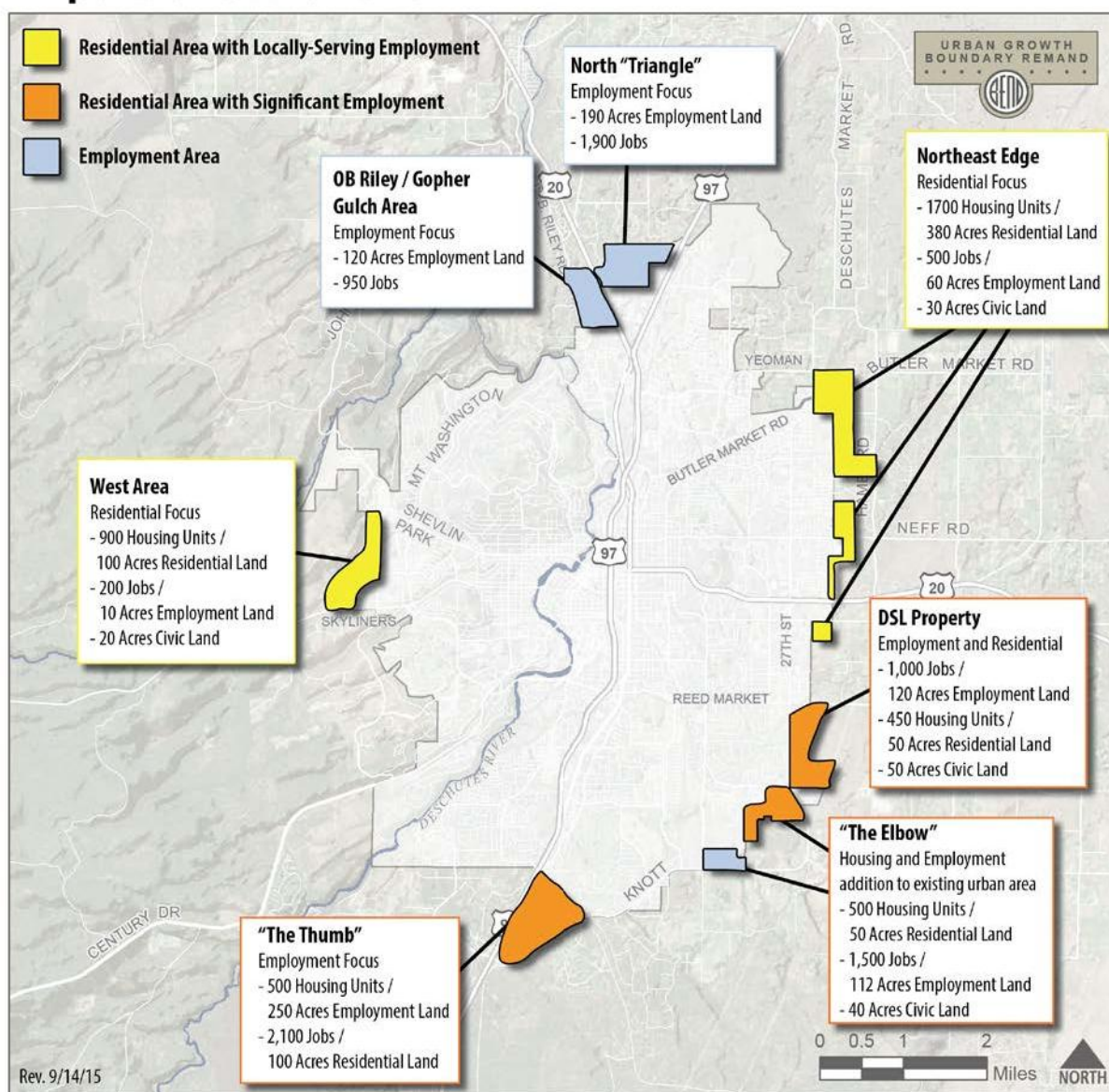
Note that these categories are used for communication purposes only, and do not necessarily reflect official land use plan designations that would be applied to expansion areas.

UGB Expansion Scenarios

Scenario 1.2

Scenario 1.2 focuses large new employment districts in the “North Triangle” and “The Thumb” along Highway 97. “The Thumb” also includes housing development, while the “North Triangle” is employment-focused. A relatively small expansion in the West Area provides a mix of housing around a small commercial core. The DSL Property offers a mix of housing and employment, including potential for a large-lot industrial user. A relatively large expansion on the Northeast Edge includes housing as well as commercial uses.

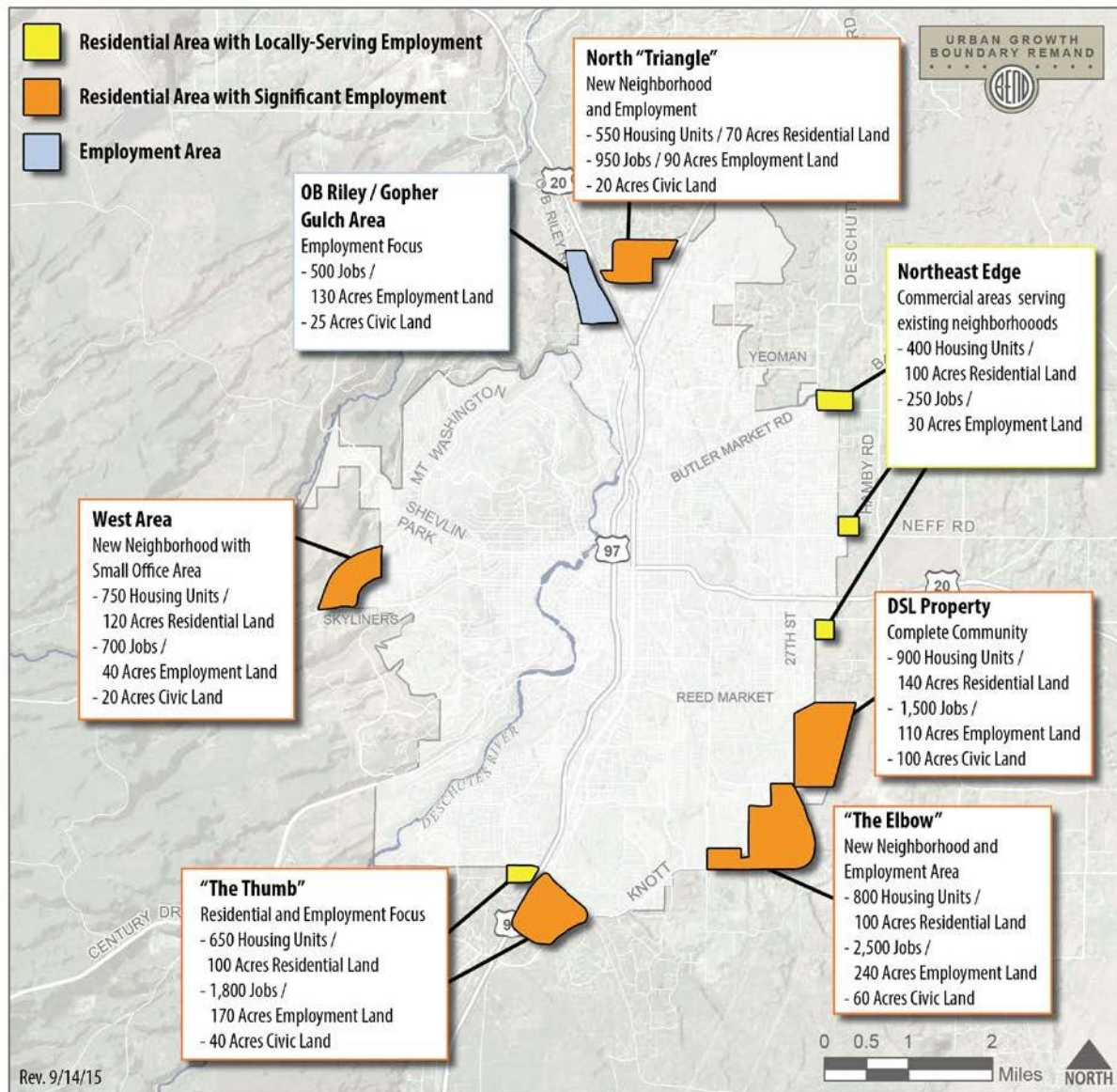
Expansion Scenario 1.2



Scenario 2.1

Scenario 2.1 focuses on creating new "complete communities" with a broad mix of uses in all quadrants of the City. Nearly all expansion areas include housing, employment areas, shopping/services, and schools and parks. This scenario fully develops "The Elbow" and the DSL site as complete communities. It incorporates housing along with employment in the North "Triangle" and "The Thumb", and some industrial/professional office in the West Area along with residential. The OB Riley area is employment-focused, with a potential large lot industrial site.

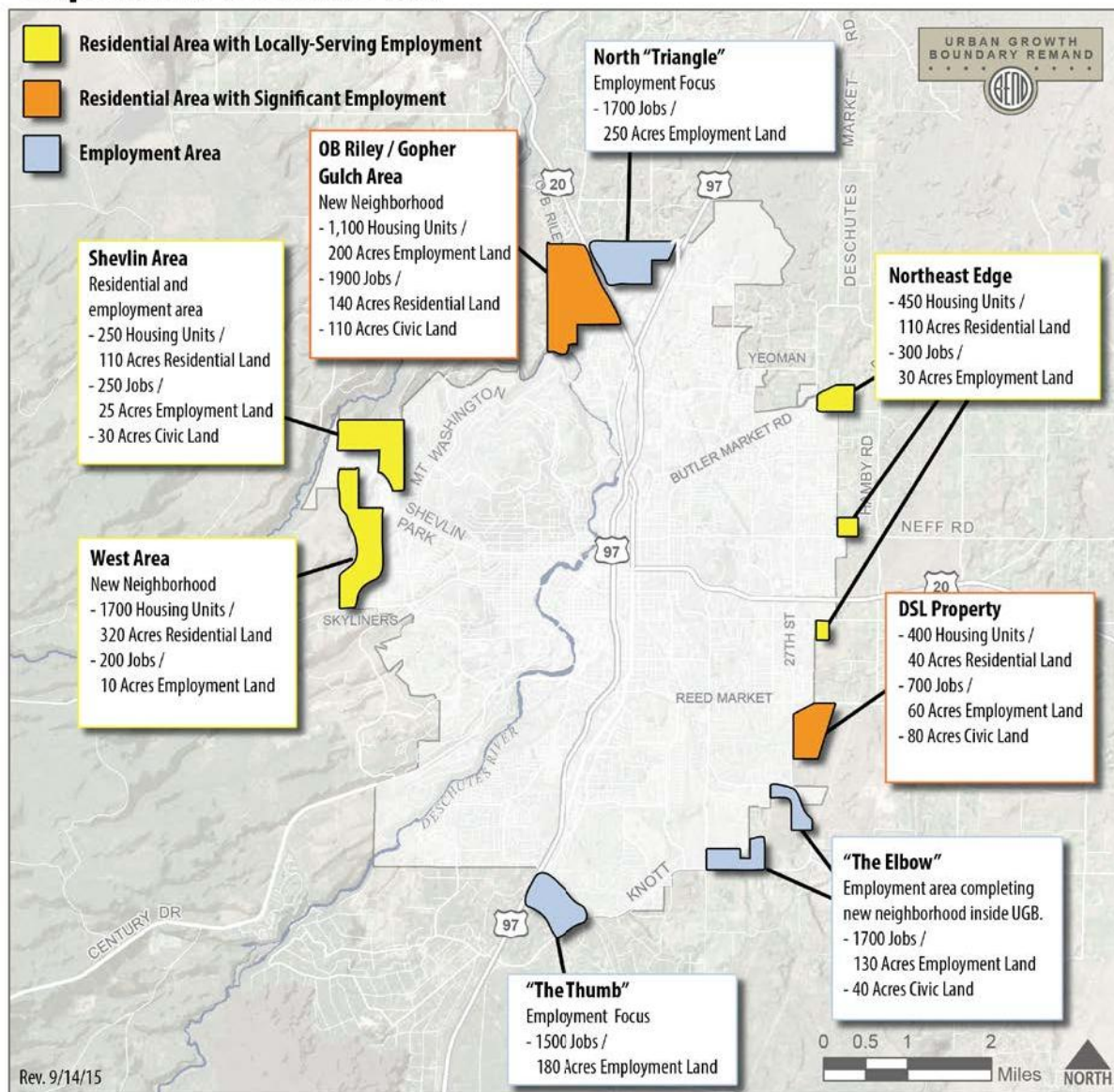
Expansion Scenario 2.1



Scenario 3.1

Scenario 3.1 focuses a larger amount of expansion to the north and west of the city. It includes a relatively large area along OB Riley adjacent to Gopher Gulch with a mix of employment and residential uses and a relatively large, mostly residential expansion in the West Area and the southern part of the Shevlin area. Only portions of the DSL Property, “The Elbow” and “The Thumb” are included. The “North Triangle” is employment focused, including a potential large lot industrial site.

Expansion Scenario 3.1

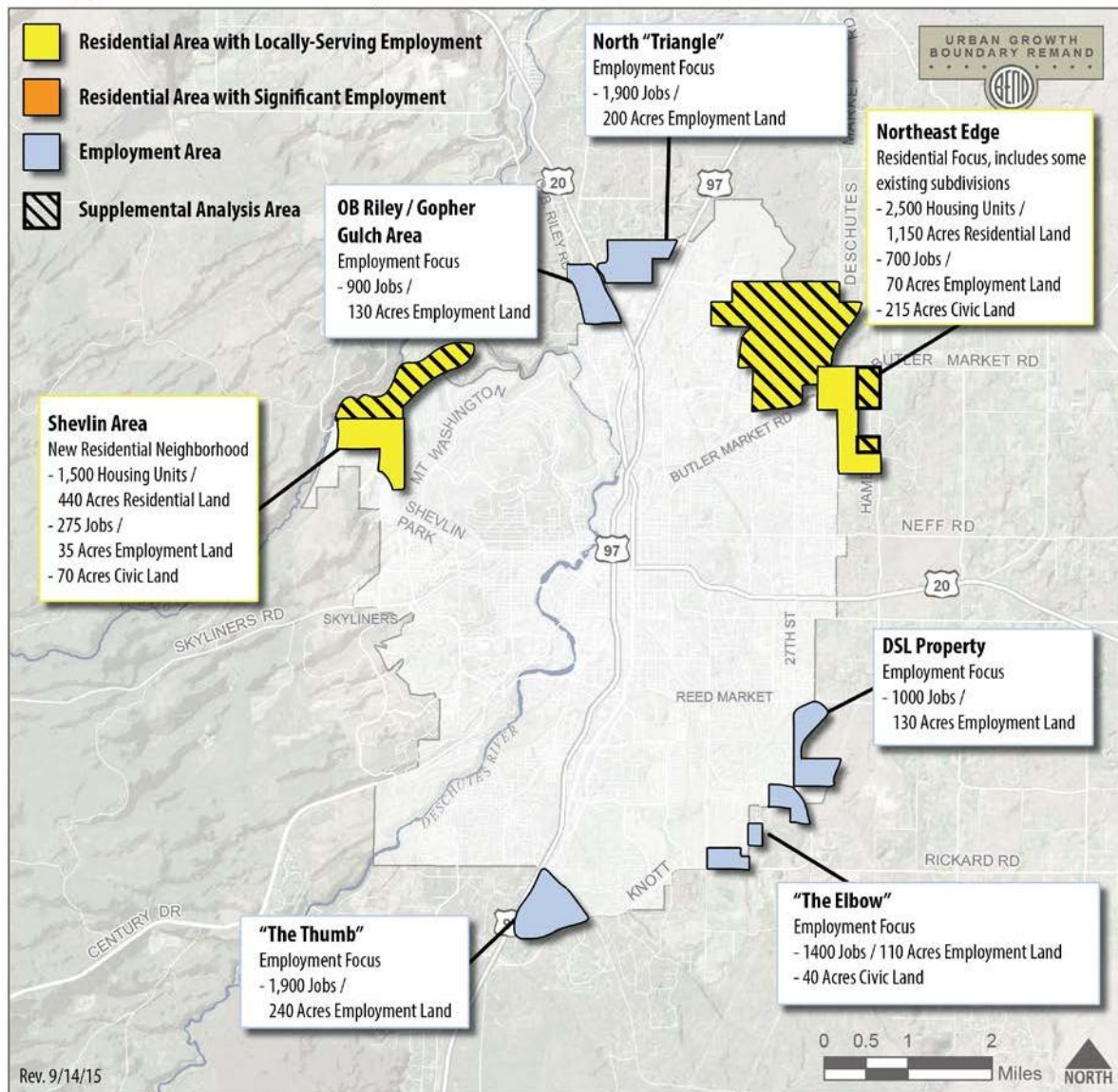


Supplemental Analysis Maps

Supplemental Analysis Area Map 1

SAAM-1 is designed to test the greatest residential growth in the Shevlin Area and in the Northeast Edge. Existing subdivisions in the Northeast Edge are included; these are expected to experience only a modest amount of infill after annexation. To meet the remaining growth needs, SAAM-1 retains employment growth in the north, south, and southeast.

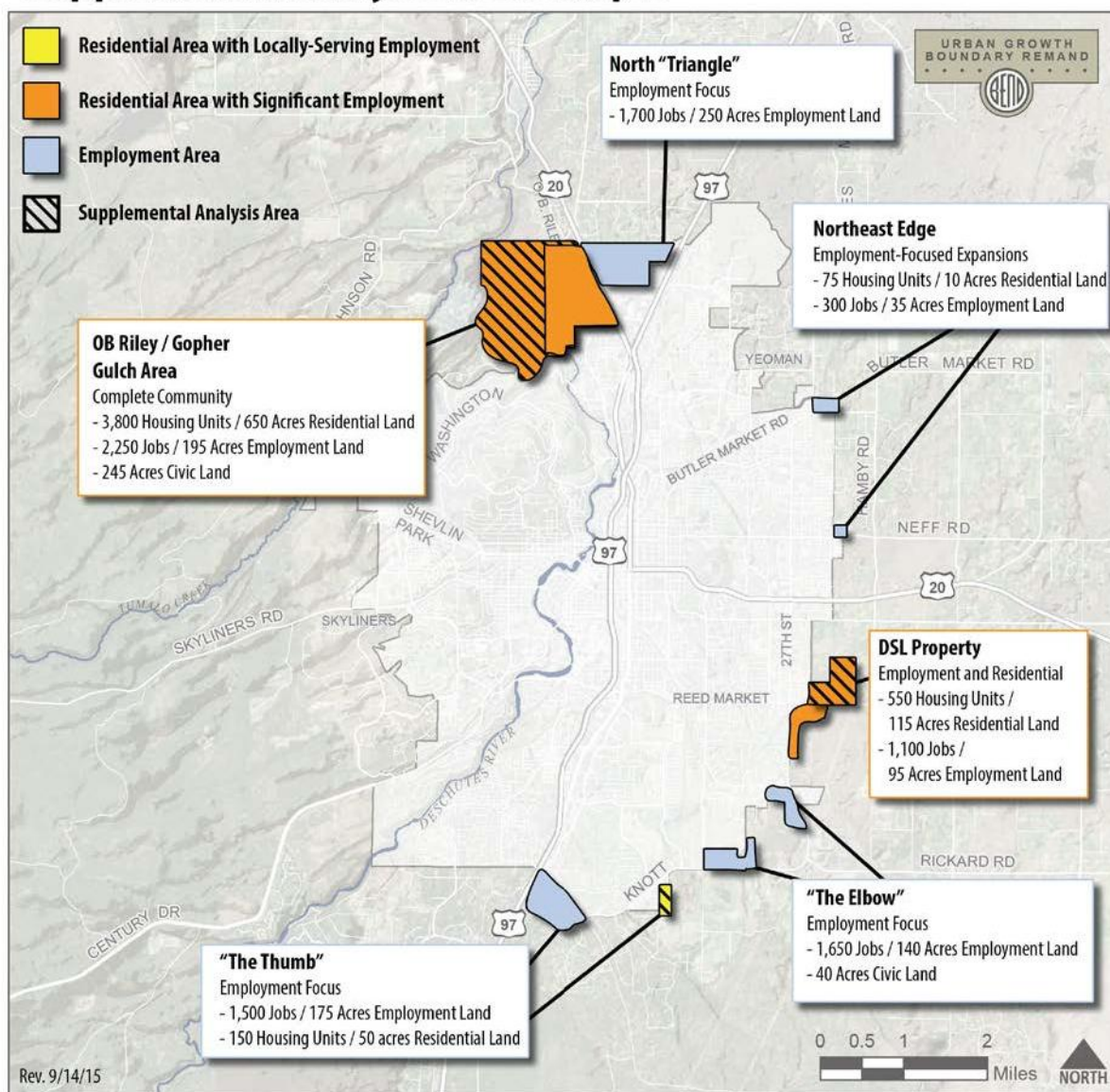
Supplemental Analysis Areas Map 1



Supplemental Analysis Area Map 2

SAAM-2 is designed to test a large new residential neighborhood in the Gopher Gulch area, which accommodates nearly all of Bend's housing growth through the planning horizon. Remaining housing growth is accommodated in pockets of land along Stevens Rd. in the Southeast and Woodside Rd. in the South. Employment growth is located along the highways and in the Southeast.

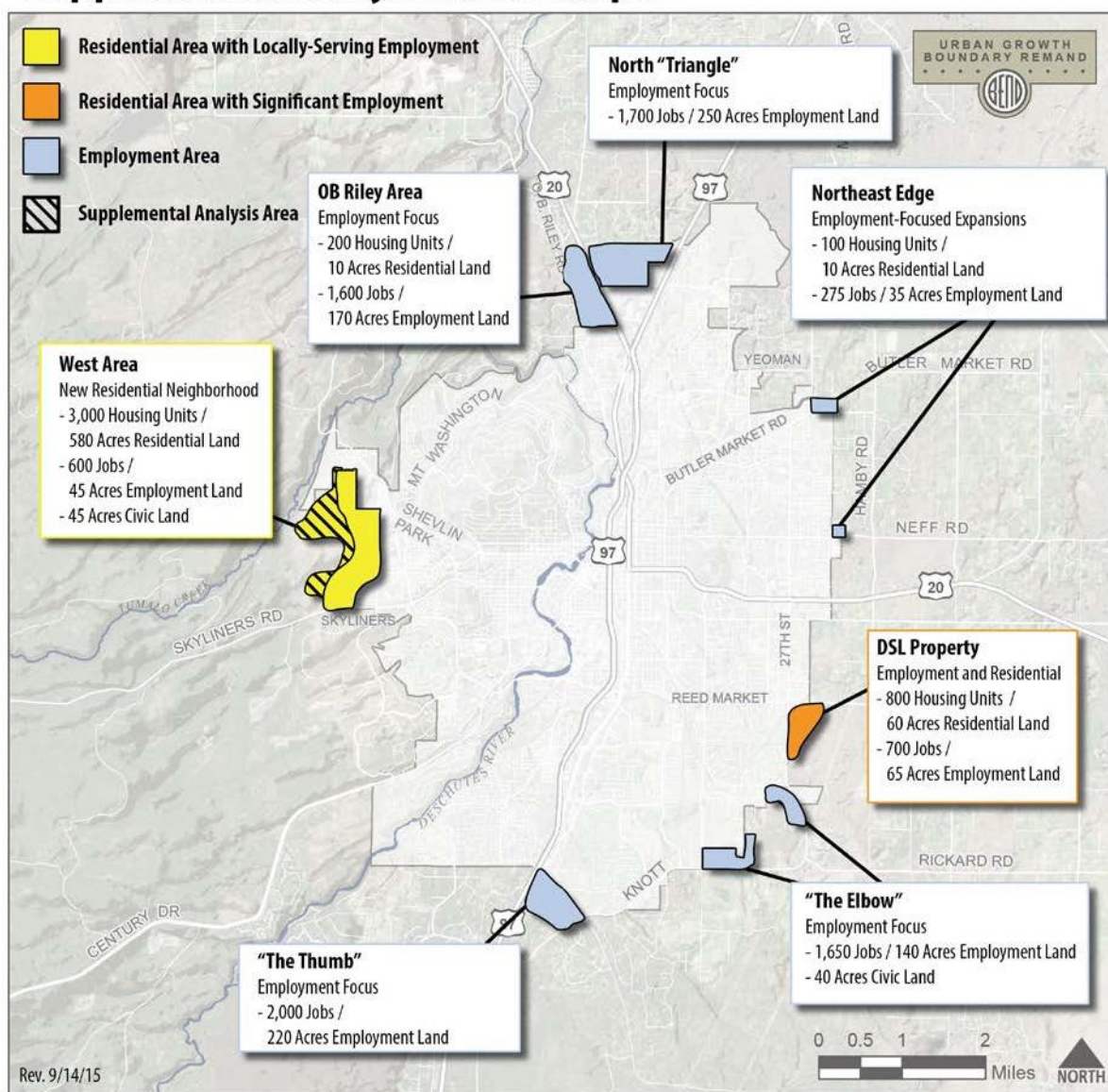
Supplemental Analysis Areas Map 2



Supplemental Analysis Area Map 3

SAAM-3 is designed to test full buildout of the West Area, which accommodates most of Bend's housing growth through the planning horizon. (Some additional residential growth is located in the DSL property to meet the remaining growth projections.) Employment growth occurs in the north, south, and southeast.

Supplemental Analysis Areas Map 3



LEGAL FOUNDATION AND CRITERIA FOR CREATING THE PREFERRED SCENARIO

State Statutes and Administrative Rules

The UGB is a key component of Oregon's land use planning program. Guidance and rules related to management of a UGB are provided in Statewide Planning Goal 14; Oregon Administrative Rule 660, Division 24; and in Oregon Revised Statutes (ORS) 197.298. The requirements that are most relevant to the task of evaluating UGB expansion alternatives are summarized in brief below.⁴

In considering locations for UGB expansions, local governments must determine which land to add by evaluating alternative boundary locations based on four priority categories of rural land (land outside UGBs) identified in ORS 197.298.⁵ The Bend UGB alternatives analysis is only considering land in the same priority category (exception lands)⁶. To choose among lands in the same priority category, local governments must consider and balance four factors listed in Goal 14:

1. Efficient accommodation of identified land needs;
2. Orderly and economic provision of public facilities and services;
3. Comparative environmental, energy, economic and social consequences; and
4. Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.⁷

The Goal 14 administrative rule clearly directs how the four factors should be applied: "The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and to determine the UGB location, a local government must show that all the factors were considered and balanced."⁸ The "relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services" must also be evaluated and compared.⁹

⁴ It is worth noting that the state requires local governments to demonstrate need and that needs cannot reasonably be accommodated on land already inside the urban growth boundary prior to expanding the UGB; complying with these requirements sets the amount and type of growth that the city must accommodate outside the UGB.

⁵ Goal 14: OAR 660-015-0000(14), effective April 28, 2006; and OAR 660-024-0060(1), effective April 16, 2009.

⁶ In Bend's situation, all urban area reserve lands on the Bend Area General Plan, and rural residential exception lands on the Deschutes County Comprehensive Plan, are Priority 2 lands under ORS 197.298.

⁷ ORS 197.298, effective 1999; and OAR 660-024-0060, effective April 16, 2009.

⁸ OAR 660-024-0060(3), effective April 16, 2009.

⁹ OAR 660-024-0060(8), effective April 16, 2009.

In general, the city has a great deal of flexibility in deciding *how* to consider and balance the location factors of Goal 14 in the evaluation of UGB alternatives within a given priority category. In other words, state law and the rules do not prescribe how and whether to weight specific factors (such as orderly and economic provision of public facilities and services); or what should be included in the consideration of comparative environmental, energy, economic and social consequences. The city has an opportunity to consider and balance the factors based on community goals and priorities. This analysis links the Project Goals to the Goal 14 Factors, as discussed under “Overview of Evaluation” on page 17.

Remand Considerations

The Remand¹⁰ includes numerous issues and directives relating to the methodology for identifying a proposed UGB expansion. In brief, the Remand requires the city to:

- analyze the relative costs of lands in the same priority category, rather than aggregating its analysis into subareas without regard to the priorities;
- evaluate the expansion area where Goal 5 resources are identified and evaluate them for significance and possible protection; the city may use the county’s Goal 5 inventory as a starting point, but it must also evaluate other information and make its own determination of significance;
- analyze the costs of providing transportation facilities to serve individual areas, including any extraordinary costs related to overcoming topographic barriers or rights of way; and
- comply with state rules on reducing reliance on the automobile and vehicle miles traveled (VMT).

The UGB Expansion Scenarios evaluated in this report are about one-quarter the size of the 8,462-acre expansion proposed in 2009. Unlike the 2009 proposal, only priority exception lands are being considered. Remand issues will be addressed in the findings, but the guidance in OAR 660-024-0060 (Boundary Location Alternatives Analysis) provides the more important legal foundation for the evaluation.

OVERVIEW OF EVALUATION

Linking the Evaluation to Criteria for Creating the Preferred Scenario

This evaluation report uses the following terms and hierarchy of considerations in the comparison, evaluation and balancing of Bend’s UGB expansion alternatives.

- **Performance Measures** – Detailed measures for each Goal 14 factor: the factual base for the evaluation. Some performance measures are quantitative and others are qualitative.
- **Community Outcomes** – Eight intended outcomes that provide a way to “roll up” performance measures and state what Bend is trying to achieve with this UGB update.

¹⁰ The November 2, 2010 order from the Land Conservation and Development Commission (LCDC) that partially acknowledged and partially remanded Bend’s 2008 proposed UGB expansion is referred to as “the Remand”.

They mirror the applicable Project Goals that were approved by the USC in September, 2014.

- **Goal 14 Factors** – Oregon’s requirements for what must be considered and balanced (see above description).

The performance measures and community outcomes are described in more detail below, along with their relationship to the Goal 14 Factors.

Performance Measures

In Phase 1 of the project, the Boundary TAC defined an approach to evaluate lands surrounding Bend for their relative strengths and weaknesses according to State laws pertaining to UGB expansions. A set of “performance measures” was identified for each of the Goal 14 factors for the “Stage 4” evaluation of UGB Expansion Scenarios by the Boundary TAC, and approved by the USC. The project team has operationalized these, incorporated thinking relative to SAAMs, and made refinements to enhance and efficiently conduct the evaluation. Changes to the list of performance measures include:

- Elimination of measures that do not vary among the scenarios and also do not provide useful information at a subarea level (e.g. amount of development inside vs. outside the UGB);
- Refinements to better reflect what the evaluation tools reveal; and
- New measures to reflect new ideas and interests from the TAC, USC, and public (e.g. site suitability of areas identified for commercial uses).

The full list of performance measures that have been analyzed is on page 21.

Community Outcomes

In organizing the evaluation of the UGB Expansion Scenarios and SAAMs, the project team sought a way to link the evaluation to the Project Goals and to capture why certain performance measures are important to the community. To this end, the project team has identified “community outcomes” that group related performance measures under a given Goal 14 Factor and that connect to the Project Goals. For example, one of the Project Goals is a Balanced Transportation System. There are a number of performance measures (e.g. VMT, walk trips, and congestion) that provide information to help evaluate whether that goal is being met. The goal of a Balanced Transportation System is one consideration under Goal 14 Factor 2: orderly and economic provision of public facilities and services. The community outcomes are described below. The performance measures used to evaluate each Community Outcome and Goal 14 Factor are listed in Table 1.

Factor 1: Efficient accommodation of identified land needs

Complete Communities and Great Neighborhoods

The city’s goal is that Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks, and that small neighborhood centers provide local shops, a mix of housing types, and community

gathering places. The UGB expansion areas have the potential to both offer new complete neighborhoods outside the existing UGB and to help complete existing communities inside the existing UGB by providing needed amenities, employment opportunities and access to goods and services adjacent to existing neighborhoods.

Efficient, Timely Growth

Compact development helps to limit sprawl and reduce the amount of land needed to accommodate the same amount of housing and employment growth. Timely growth refers to development “readiness,” i.e. the likelihood of development in the near term, and the degree of certainty that development will be feasible within the 2028 planning horizon. This has emerged as a frequent consideration in TAC discussions, especially because a portion of the 20-year planning horizon has already passed.

Factor 2: Orderly and economic provision of public facilities and services

Balanced Transportation System

The city’s goal is that Bend’s balanced transportation system incorporates an improved, well-connected system of facilities for walking, bicycling, and public transit, while also providing a reliable system for drivers, and that the transportation system emphasizes safety and convenience for users of all types and ages.

Cost-Effective Infrastructure

The city’s goal is to plan and build water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing and planned infrastructure is a top priority.

Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)

Quality Natural Environment (Environmental and Energy Consequences)

The city’s goal is that, as Bend grows, it preserves and enhances natural areas and wildlife habitat and also provides access to nature by enhancing its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city. Wildfire risk management is also a key consideration. The city will take a balanced approach to environmental protection and building a great city. Growth choices can also affect resource consumption (e.g. energy and water) and greenhouse gas emissions, all of which are local as well as global issues.

Housing Options and Affordability (Social Consequences)

The city’s goal is that Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing affordability has emerged as a key concern of the Residential TAC and one of the important reasons behind the need for additional housing and the need to shift the housing mix to provide more affordable options that better match the income profile of existing residents and the projected demographic trends affecting the local housing market.

Strong Diverse Economy (Economic Consequences)

Bend needs a good supply of serviced land planned for employment growth to support the City's economic development goals, provide a range of diverse jobs and industries, and support innovation. Employment areas, large and small, should have excellent transportation access. Areas identified for commercial and industrial development must be suitable for those uses and attractive to the types of businesses anticipated to locate there. In addition, areas for employment growth will need adequate infrastructure to support their development.

Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB

Compatibility with Farms and Forests

Protection of farms and forests from impacts of development is a key tenet of the Oregon land use system. As Bend expands, it is important to ensure that development in expansion areas will be compatible with nearby farm and forest practices so that those uses remain viable.

Combining Performance Measures

As would be expected, the evaluation results indicate different types of outcomes for the performance measures. Some of the performance measures showed little variation among the scenarios. Others capture advantages or disadvantages that are easily modified through implementation (e.g. location of a park or school). Others showed relatively wide differences between the scenarios. Table 1 identifies which performance measures the project team has identified as most and least important (relative to others within the same Community Outcome) and a rationale for why the team recommends they be given greater consideration in reaching a decision on the preferred UGB. The broad categories of reasons to give one performance measure more consideration than another include: (1) the significance of the differences among alternatives, (2) the magnitude of the advantage or disadvantage identified by the performance measure, and (3) how easily it could be improved through refinements to the arrangement of land uses within one or more expansion areas.

The Difference-Makers

Stepping back from the roll-up to the Community Outcome level, there are a handful of performance measures that identify truly significant differences between the alternatives – differences that will meaningfully affect the community in 2028 and/or that are critical to meeting the legal requirements for this UGB expansion. These “difference makers” include total cost of transportation improvements, efficiency of additional sanitary sewer improvements required, residential land efficiency, affordability, and VMT. They are identified as “Very High” relative importance in Table 1, indicating their importance beyond a single community outcome. Additional performance measures that are especially important at the subarea level include development in wildlife areas and adjacent to riparian areas, wildfire hazard, proximity to farms and forests, irrigation district impacts, suitability for commercial and industrial uses, and per acre costs for needed infrastructure extensions (framework roads and sewer lines).

Table 1: Goal 14 Factors, Community Outcomes, and Performance Measures

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
Factor 1: Efficient accommodation of identified land needs	Complete Communities and Great Neighborhoods	Housing units within walking distance of schools	Moderate	Some differentiation among scenarios, but relatively easy to refine potential future school locations to improve walk access to schools (and also better match the School District's input on where they hope to provide future schools).
		Housing units within walking distance of parks and trails	Low	Little differentiation among the alternatives. Most of the existing city and most of the expansion areas have excellent access to parks; there are few residential or mixed use areas that do not have at least one park or trail within walking distance.
		Housing units within walking distance of commercial services	High	The hardest performance measure of this group to improve through refinement of land uses. This measure showed meaningful variations among the scenarios.
		Jobs/housing balance (by subarea)	Moderate	No meaningful variation at the scenario / SAAM level because all alternatives have roughly the same total housing and jobs. When evaluated by subarea, a greater degree of jobs/housing balance may make it possible for people to live and work in the same neighborhood, potentially reducing VMT.
		Opportunities for master planning	Moderate	Large properties that will be required to undergo master planning offer the potential for greater input from the city in the ultimate design of the new development; however, the master planning process does add time and expense to development.

¹¹ Relative importance is relative to other performance measures within a given Community Outcome. Weighting of Community Outcomes against one another may be assigned at a later time based on community, TAC and/or USC input, but has not been applied at this time. However, performance measures identified as "Very High" importance are considered "difference makers" with importance beyond a single community outcome.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
	Efficient, Timely Growth	Total acres of expansion	Low	Some of the variation among alternatives is attributable to the efficiency of the land included (based on topography and existing development patterns) and is not easy to change for a given area, but some of the variability is a function of the number of schools or parks included or the need to include an entire area for testing and are not indicative of efficiency of the land.
		Gross density for new housing	Very High	Gross residential densities vary among the alternatives, and factor in land with existing development that is assumed not to redevelop, making this measure a good indicator of residential efficiency, a key issue for compliance with state law and a key indicator of Bend's degree of sprawl.
		Net density for new jobs	Low	Little to no variation among the alternatives. More a function of nuances in the type of employment uses assumed than the efficiency of the land itself.
		Parcels under 20 acres and contiguous to the existing UGB	Moderate	Some variation among alternatives. Not a perfect measure of development readiness, but the best available measure of this.
		Vacant vs. developed land included	Low	Development on vacant land may be more likely to occur in a shorter amount of time because there are no existing land uses generating income or providing value for the property owner, but this is not always the case.
Factor 2: Orderly and economic provision of	Balanced Transportation	Total VMT per capita	Very High	Used for determining compliance with a key provision of the Transportation Planning Rule (TPR). ¹² Shows meaningful variation among the alternatives.

¹² Oregon Administrative Rule 660, Division 12, Section 0065.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
public facilities and services	System	Average trip length	Moderate	Shows meaningful variation among the alternatives; highly correlated with VMT, but informative at the subarea level.
		Household VMT per capita	Moderate	Highly correlated with Total VMT per capita; captures only travel to and from home.
		Congestion	High	Some areas rely heavily on congested corridors where increases in capacity either costly or are difficult or inappropriate. Increasing congestion on state highways is a primary issue both because of the impacts it can cause those who rely on the highways and because of regulations that require mitigation (which may be expensive, unlikely to be funded, and/or complex) if a change in land use will worsen congestion on a road that already does not meet standards.
	System	Walk/bike safety and connectivity	Moderate	Certain subareas have connectivity issues for integrating with the surrounding system that are difficult to overcome.
		System connectivity & progression of system hierarchy	Moderate	Certain subareas have connectivity and/or access issues that are difficult to overcome.
		Mode split	Moderate	Little variation at the full Scenario / SAAM level, though small differences in percentages can have a relatively large impact on the transportation system. Also informative at the subarea level.
	System	Average weekly walk trips per capita	Low	Correlated with mode split. Little variation at the Scenario / SAAM level. More informative at a subarea level.
		Proximity to transit corridors	Low	Minimal variation at the Scenario / SAAM level; more informative at the subarea level.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
		Housing & jobs within ¼ mile of transit corridors	Low	Minimal variation at the Scenario / SAAM level, and since transit routing can and should be modified to respond to the final proposed UGB expansion, there is some ability to improve transit access for alternatives that scored lower.
		Intersection density	Moderate	Intersection density is an influential predictor of walking, and impacts VMT and bicycling as well. This performance measure is based on both existing intersection density and projected future intersection density (based on assumptions built into the development types), which makes it more hypothetical and somewhat less robust in the expansion areas.
Cost-Effective Infrastructure	Total cost of transportation improvements required		Very High	Transportation costs are generally the single biggest expense associated with new development. Funding sources to cover anything not eligible for System Development Charges (SDCs) are limited and uncertain unless born directly by developers.
	Cost per acre of transportation improvements		Moderate	Rewards larger, less efficient expansions at the full scenario / SAAM level; more useful at the subarea level.
	New linear miles of local streets		Low	Based on assumptions built into the development types; city regulations and topography will influence what is ultimately built beyond what is captured in the development type assumptions.
	Efficiency of additional sewer system improvements required		Very High	Captures how well each alternative makes use of infrastructure that will be needed to serve growth inside the UGB and/or that can serve multiple expansion areas and how many improvements are needed that are not aligned with the preferred long-range system identified through optimization.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
		Initial capital cost of sewer system improvements required	Moderate	A financing strategy for sewer has not been established yet; however, some or all of the capital costs identified may affect rate-payers. The city has recently increased rates to pay for upgrades needed to serve the existing UGB, so rate-payers will be sensitive to additional increases in rates, which makes keeping costs low important. Long-term improvement strategies typically are the most cost-effective, but this measure does not include life-cycle or operations and maintenance costs.
		Initial capital cost of sewer system improvements per acre of development	Moderate	Primarily relevant at the subarea level. Certain sub-areas have fixed costs to extend service, so when smaller areas are identified for development, the costs can become disproportionate to the area served.
		Water system improvements required in city water service area	Low	This measure addresses only areas within the city's water service area. Some areas are more challenging to upgrade capacity than others, but differences are fairly minor and no major issues were discovered.
		Capacity of Avion Water system	N/A	Comments have been sought but have not yet been received.
		Total impervious area for new development	Low	Little meaningful variation at the full Scenario / SAAM level. Stormwater costs are not significant relative to other types of infrastructure.
		Acres of new development within Drinking Water Protection Areas (DWPA)	Low	DWPA can be protected through regulations; the primary concern is industrial uses.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)	Quality Natural Environment (Environmental and Energy Consequences)	Acres of new development with welded tuff geology	Low	While geology is an important factor in the cost of building new infrastructure, the available spatial data is not at a detailed enough resolution to allow for accurate prediction of where excavation costs will be affected.
	Development in wildlife areas		Moderate	The ODFW mapped wildlife winter range is broad and includes the existing city. The areas where ODFW indicated that elk and deer are more likely to congregate are, by their nature, imprecise; however, they are important to consider.
	Linear distance of riparian areas adjacent to development		Moderate	Riparian areas will be protected with buffers / setbacks and other regulations (such as Waterway Overlay Zone) that will limit impacts from adjacent development.
	Wildfire hazard		High	Wildfire risk is an important issue for the Bend area. Vegetation management can reduce wildfire hazard, and construction mitigation measures are possible in most areas. However, there are limited areas where steep slopes make certain types of mitigation infeasible.
	Greenhouse gas emissions		Low	Highly correlated with VMT and housing mix. The majority of variation among scenarios / SAAMs is due to transportation emissions.
	Energy Use		Low	Little variation among Scenarios / SAAMs; highly correlated with housing mix and patterns match closely with greenhouse gas emissions. Some variation at the Scenario / SAAM level may be due to nuances in the type of land uses assumed rather than the characteristics of the area itself.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
		Average Water Consumption per Household	Low	Little variation among Scenarios / SAAMs; highly correlated with housing mix. Some variation at the Scenario / SAAM level may be due to nuances in the type of land uses assumed rather than the characteristics of the area itself.
	Housing Options and Affordability (Social Consequences)	Average cost of new single family housing	Very High	Affordability is a key issue for Bend and for this UGB expansion. Enough variation at the scenario level for meaningful distinctions.
		Housing mix of new housing (subarea balance)	Low	Having a balanced mix of housing in most or all subareas helps prevent income segregation at the neighborhood level, but can fairly easily be adjusted through adjustments to land use assumptions.
	Strong Diverse Economy (Economic Consequences)	Site suitability for large lot industrial use	Low	Identifying an appropriate site for a large lot industrial use is important; however, the large lot site can fairly easily be incorporated into any of the scenarios, so it is not a differentiating measure.
		Site suitability for areas identified for industrial uses	High	This is important at a subarea level and for the creation of the preferred scenario.
		Site suitability for areas identified for commercial uses	High	This is important at a subarea level and for the creation of the preferred scenario.
Factor 4: Compatibility of proposed urban uses with nearby agricultural and	Compatibility with Farms and Forests	Farm practices & high value farm land adjacent to expansion areas	High	Protection of farms from impacts of development is a key tenet of the Oregon land use system, and greater distances between urbanizing areas and farms and forests reduces legal risk due to fewer or no compatibility issues. Some variation at the Scenario / SAAM level; more relevant at the subarea level.

Goal 14 Factor	Community Outcome	Performance Measures	Relative Importance ¹¹	Rationale
forest activities occurring on farm and forest land outside the UGB		Impact to irrigation districts	Moderate	Meaningful variation among alternatives, particularly at the subarea level. Irrigation districts are important to the agricultural economy of Central Oregon. Loss of water rights due to development will have a financial impact on the Irrigation Districts and possibly impact the delivery of water to agricultural operations that are not directly affected by the boundary expansion.
		Designated forest land adjacent to expansion areas	Moderate	Greater distances between urbanizing landuses and forest operations helps reduce concerns about compatibility and associated legal rise. However, very little area is proximate to designated forest land (several subareas are located more than one mile from the closest forest lands). Adjacent forest land is generally managed for recreation rather than timber harvest, so there are fewer compatibility concerns with adjacent development.

SCENARIO EVALUATION SUMMARY

The following evaluation summary rolls up the results from each of the performance measures to conclusions at the community outcome level, answering the question: How well does this Scenario (or SAAM) achieve this Community Outcome? This section offers a summary and synthesis of the evaluation results; detailed data sheets are provided in Appendix B. A summary of the methodology and further description of the evaluation for each performance measure are provided in Appendix D.

To Weight, or not to Weight?

In Phase 1, the Boundary TAC and USC directed the team to use an “unweighted” (or, more precisely, an equally-weighted) approach to combining results from different indicators evaluated in Stage 2 to identify overall performance of different areas. For Stage 4 scenario evaluation, neither the Boundary TAC nor the USC provided specific guidance on how the performance measures should be weighed and balanced against one another.

To help test the sensitivity of individual performance measures on the ranking of the scenarios, the project team has analyzed the performance measures and has evaluated overall results using both an equally-weighted and an unequally-weighted approach, including several variations of weighting. These are shown in Appendix C. Using or not using weighting and the degree of weighting had minimal impact on the overall results. The top performing scenarios were found to rank in the same order regardless of whether and how the performance measures are weighted, given the degree of importance assigned to each (as captured in Table 1).

The discussion that follows takes a “blended” approach on weighting – where the use of weighting matters, that is noted in the discussion. The discussion was written after considering the results from both sides (both equally-weighted and unequally-weighted).

It is important to note that the update of Bend’s UGB is not intended to be a numerical exercise and points-based decision. Rather, it is intended to be a determination of which choices, on balance, best meet the Goal 14 factors and Project Goals (as expressed in the Community Outcomes). This requires both a quantitative and a qualitative evaluation and set of decisions.

Factor 1: Efficient accommodation of identified land needs

Complete Communities and Great Neighborhoods

Top Tier

Scenario 2.1 performed the best overall on this Community Outcome, particularly on access to schools and commercial services, because it was created with the intention of providing for complete communities (neighborhoods with a mix of housing, jobs, commercial services, parks, and schools) in all quadrants of the city.

Middle Tier

Scenario 3.1 and, to a lesser extent, **Scenario 1.2** and **SAAM-2**, also performed well. These alternatives all have some subareas that are fairly complete, and others that are less so. Scenario 3.1 performed well on walk access to both schools and commercial; nearly all new

residential expansion areas in each include at least a small commercial center and many include a school. Scenario 3.1 did the best at increasing the walk access of housing inside the existing UGB to commercial services. This appears to be due to the placement of commercial areas in a few key locations. For example, within “The Thumb”, placing commercial adjacent to China Hat Road provides walkable access to neighborhoods at the southern edge of the city that currently lack it. In the Shevlin Area, placing commercial along Shevlin Park Road provides walk access to portions of Awbrey Butte.

Bottom Tier

SAAM-1 and **SAAM-3** had mixed results on this Community Outcome, with performance below that of the other alternatives. In part, this is because they include one or two large, primarily residential expansion areas and fragmented employment areas elsewhere. SAAM-1 was the only alternative that did not perform well on park/trail access, because the northernmost extent of the Northeast Edge would not have walkable park/trail access. SAAM-3 performed poorly on school and commercial access, because of the large amount of new housing in the outer portion of the west area, away from existing and future commercial uses and schools. Because of the nature of the areas included in SAAM-1 and SAAM-3, it would be difficult to improve their performance on these measures – there are few or no suitable locations for additional schools, parks, or commercial areas in either one.

Efficient, Timely Growth

Top Tier

Scenario 1.2 performed the best overall on this Community Outcome, with high ratings across the board, because it provides a mix of large, vacant properties and smaller parcels contiguous to the existing UGB. **Scenarios 2.1** and **SAAM-3** also performed well on this Community Outcome. Both do well on measures of density and efficiency because of their reliance on larger, vacant parcels, but both have a lower percentage of land under 20 acres and contiguous to the existing UGB.

Middle Tier

SAAM-2 and **Scenario 3.1** performed moderately well, though not as well as the others mentioned above. This is in part because lower residential densities were assumed in parts of the West Area and the Shevlin Area due to topography and the possible need for cluster development in order to allow for natural resource/wildlife habitat protection. Both also include a number of developed parcels between OB Riley Road and Gopher Gulch, which are less efficient to develop than vacant parcels.

Bottom Tier

SAAM-1 performed the worst on this Community Outcome, because the outer Northeast Edge and the Shevlin area both had lower residential densities; the outer Northeast edge includes quite a few developed properties, particularly in the subdivisions south of Juniper Ridge; and, while the parcels are smaller in the Northeast Edge, the outer portion is not contiguous to the current UGB.

Factor 2: Orderly and economic provision of public facilities and services

Balanced Transportation System

Top Tier

Across the various performance measures included in this Community Outcome, **Scenario 2.1** performed the best overall, with the lowest VMT per capita, the best overall walk/bike safety and connectivity, and the best system connectivity and progression of system hierarchy.

Middle Tier

Scenario 1.2, Scenario 3.1, SAAM-1 and SAAM-3 all performed moderately well – the relative ranking among these depends on which measures are given most importance, although differences are subtle. Scenario 1.2, SAAM-1 and SAAM-3 do fairly well on congestion, with relatively low overall congestion; they also do fairly well on walk/bike safety and connectivity, with no major barriers identified. It is worth noting that SAAM-1 does poorly on VMT, but well on congestion (because there is relatively little existing congestion near the Shevlin area) and walk/bike safety and connectivity (because including the full extent of the Shevlin area provides for better connections to the existing road and trail system).

Bottom Tier

SAAM-2 does the worst on this Community Outcome overall, with poor performance on VMT, mode split, average trip length, and a number of other factors. It also performs less well on walk/bike safety and connectivity because the river forms a barrier with connections to the west.

Cost-Effective Infrastructure

Top Tier

Scenario 2.1 performed the best overall on this Community Outcome, in particular because of the low cost of transportation improvements required (low cost for connecting growth areas and low cost for projects to increase capacity). It also performed fair to well on measures of sewer system cost-effectiveness as well as new linear miles of local streets, water system improvements within the Bend water service area, and total impervious area for new development. It had only one negative rating, on new development within a Drinking Water Protection Area, because of the amount of development in The Thumb.

Middle Tier

SAAM-2 performed somewhat poorly on sewer, though it was not the worst performer; it takes advantage of major trunk infrastructure to the north but the DSL property and The Elbow are not cost-effective due to small area included and fixed costs to serve those areas. It had moderate transportation costs, with low costs for connecting growth areas but high costs for required capacity improvements (including the need to widen US 20 from Robal Rd to 3rd Street). It's only other drawback is having a relatively high proportion of development in areas with potentially challenging geology (welded tuff).

Bottom Tier

Scenarios 1.2 and 3.1, SAAM-1 and SAAM-3 all had at least one significant drawback on transportation and/or sewer infrastructure, though most had mixed results overall. **Scenario 3.1**

performed acceptably across most performance measures in this group, but performed poorly on transportation costs due to high cost for connecting growth areas and the need to widen US 20 from Robal Rd to 3rd Street. **Scenario 1.2** also performed poorly on transportation infrastructure, due to high cost for connecting expansion areas and high cost for capacity improvements, but performed the best on sewer infrastructure, because it focuses more growth on the Northeast edge, which is efficient for sewer service. **SAAM-3** had high costs for sewer improvements because of the need for a new regional pump station to serve the northwest portion of the West Area, but low costs for transportation improvements due to low cost for connecting growth areas and moderate cost for congestion mitigations (including the need to widen US 20 from Robal Rd to 3rd Street). SAAM-3 also has the greatest amount of development in areas with welded tuff geology, which can add to the cost of excavation. **SAAM-1** had high costs for sewer because of the need for a new regional pump station to serve the Shevlin Area (though it does take advantage of cost-effective sewer in the Northeast edge), and also had relatively high transportation costs due to high costs for connecting expansion areas as well as high costs for intersection improvements.

Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)

Quality Natural Environment (Environmental and Energy Consequences)

Top Tier

Scenario 1.2 and **Scenario 2.1** are rated fair to very good across all performance measures under this Community Outcome. Neither has development adjacent to riparian areas, and both have limited total expansion in elk and deer range, with no expansion into ODFW areas of potential concern. Neither has features that prevent mitigation of wildfire hazard in any expansion areas. Both had reasonably good performance on energy consumption, greenhouse gas, and water consumption measures as well.

Middle Tier

Scenario 3.1, **SAAM-2** and **SAAM-3** had mixed results. SAAM-2 performed fair to well on all measures except greenhouse gas emissions and energy use. Scenario 3.1 rated poorly on development in wildlife areas and wildfire hazard due to the inclusion of the Shevlin area, which is both an ODFW area of potential concern and has topographic features that make it difficult to fully mitigate wildfire risk. SAAM-3 rated poorly on development in wildlife areas because so much growth was focused in the West area, but performed fairly or well on other performance measures.

Bottom Tier

SAAM-1 performed poorly on many of the performance measures, and did not perform well on any. It rated very low on development in wildlife areas and lower also on wildfire hazard because it includes the full Shevlin area (see reasons noted above). It also rated lower than other scenarios on development adjacent to riparian areas because of the inclusion of the upper portion of the Shevlin Area.

Housing Options and Affordability (Social Consequences)

Top Tier

Scenario 2.1 and **SAAM-1** performed the best on this Community Outcome, though there were only two performance measures. Scenario 2.1 had good housing mix in nearly all subareas and good housing affordability with significant housing growth in the southeast. SAAM-1 had good housing mix in both primary residential expansion areas and had moderately affordable housing due to the heavy expansion in the Northeast Edge.

Middle Tier

Scenario 1.2 performed well on affordability, but less well on housing mix, with most subareas somewhat imbalanced (too much single family or too little). **SAAM-2** performed well on housing mix, but less well on affordability, with growth focused on the northwestern side of the city.

Bottom Tier

Scenario 3.1 and **SAAM-3** performed poorly on affordability due to the heavy focus on the west side of the city. SAAM-3 also did not perform well on housing mix because there were small residual areas of almost exclusively multifamily housing.

Strong Diverse Economy (Economic Consequences)

Top Tier

Nearly all alternatives – **Scenario 1.2**, **Scenario 3.1**, **SAAM-1**, **SAAM-2**, and **SAAM-3** -- performed well or very well across all performance measures in this Community Outcome.

Middle Tier

Scenario 2.1 rated somewhat lower, because it places employment and commercial uses in more of the expansion areas (e.g. the West Area) where they are somewhat less well suited.

Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB

Compatibility with Farms and Forests

Top Tier

Scenario 1.2 rated the highest on farm and forest compatibility because it affects the fewest irrigation district customers and has no forest land within a mile of any expansion area.

Middle Tier

Scenario 2.1, **SAAM-3**, and, to a lesser extent, **SAAM-1** also rated fair to good on this Community Outcome. SAAM-3 has less farm impacts but more forest adjacency than other alternatives. Scenario 2.1 and SAAM-1 both have moderate levels of farm impacts, moderate impacts to irrigation districts, and little to no forest land adjacency.

Bottom Tier

Scenario 3.1 and **SAAM-2** rated the lowest on farm and forest compatibility because they are proximate to the greatest number of working farms and also affect the greatest number of

irrigation district customers. Scenario 3.1 also has some forest land between a mile and a quarter-mile away from the expansion in the West Area.

Conclusions and Recommendation

Scenario 2.1 was in the “top tier” relative to other alternatives on nearly all community outcomes, and performs the best on balance of all the alternatives. Scenario 2.1 excels in Complete Communities and Great Neighborhoods and Housing Options and Affordability and does not have any significant weaknesses identified through the evaluation. Each of the other alternatives has at least one important weakness that was identified through the evaluation, as summarized in brief below.

- Scenario 1.2 performs poorly on cost-effective infrastructure, because heavy development in the Thumb triggers the need to widen Knott Road to three lanes.
- Scenario 3.1 performs poorly on cost-effective infrastructure, due to high transportation costs to connect growth areas and the need to widen US 20 from Robal Rd to 3rd Street. It also performs poorly on compatibility with farms and forests due to heavy impacts to Swalley Irrigation District in OB Riley / Gopher Gulch and forest proximity in the Shevlin Area and on Housing Options and Affordability because much of the residential development is focused on the west side of the city where land costs and housing prices are higher. It performs relatively poorly on Quality Natural Environment because including the Shevlin Area impacts wildlife areas, puts development in proximity to Tumalo Creek, and has topography that makes wildfire hazard difficult to mitigate.
- SAAM-1 performs poorly on multiple Community Outcomes. It performs poorly on Quality Natural Environment because including the full Shevlin Area impacts wildlife areas, puts development in proximity to Tumalo Creek has topography that makes wildfire hazard difficult to mitigate. It performs poorly on Cost-Effective Infrastructure because development of the full Shevlin Area requires a costly new regional pump station for sanitary sewer, and it also has fairly high cost for new roads connecting growth areas and high costs for intersection improvements. SAAM-1 also rated relatively poorly on Complete Communities and Great Neighborhoods and Efficient, Timely Growth because the outer extents of the Shevlin Area and Northeast Edge are not well-suited to higher-density housing and have less proximity to commercial services, schools, and/or parks.
- SAAM-2 performs poorly on Balanced Transportation System, due to the lack of connectivity to the existing UGB from the Gopher Gulch area and the distance to reach key destinations inside the current UGB. It also performs relatively poorly on Compatibility with Farms and Forests due to heavy impacts to Swalley Irrigation District and proximity to the greatest number of working farms.
- SAAM-3 performs relatively poorly on Housing Options and Affordability because all of the residential development is focused in the West Area, which is more expensive (as noted above), and on Cost-Effective Infrastructure because including the full West Area (particularly the northwest portion) requires a costly new regional pump station.

The project team recommends that the Boundary TAC consider Scenario 2.1 as the starting point for crafting the preferred UGB Expansion Scenario. As described in the next section, the subarea evaluation provides insights into potential modifications of Scenario 2.1 that will improve it and are recommended for inclusion in the hybrid.

SUBAREA ADVANTAGES, DISADVANTAGES AND TRADE-OFFS

This section provides a summary of findings from the evaluation on the advantages and disadvantages of each subarea (those that are either inherent to the geography or that do not vary appreciably between the alternatives) and the trade-offs associated with the various land use choices in each of the alternatives. Its purpose is to illuminate which options perform the best for each subarea in order to inform the creation of the hybrid and the refinement of the top-performing scenario.

North Triangle

General advantages and disadvantages

Advantages	Disadvantages
• cost-effective to serve with sewer because it requires only an incremental extension of the Northeast Interceptor, which is also required to serve the OB Riley / Gopher Gulch area • Relatively close to existing transit lines at the southern edge (but over a quarter mile) • no issues for water service • generally well-suited to commercial uses • not in Welded Tuff geologic area; • minimal overlap with Drinking Water Protection Areas (DWPAs) • not in Elk/Deer Range or Oregon Department of Fish and Wildlife (ODFW) Areas of Potential Concern • Wildfire hazard is somewhat lower than other potential expansion areas • no commercial farms nearby; no forest land within 1 mile	• more growth in this area contributes to congestion on US 97 and US 20 • High cost per acre for transportation connectivity improvements • some compatibility concerns for industrial uses with rural residential area to the north • potential for significant impacts to Swalley Irrigation District • large format retail south of Cooley road reduces attractiveness for residential use

Trade-offs of land use options

Three main choices were tested for this area:

1. Scenario 1.2 and SAAM-1: an all-employment expansion excluding the smaller parcels on the western edge
2. Scenario 2.1: a mixed-use expansion excluding the smaller parcels on the western edge
3. Scenario 3.1, SAAM-2, and SAAM-3: an all-employment expansion including the smaller parcels on the western edge, with a large-lot industrial site designation on the eastern side

The trade-offs associated with these choices are summarized below.

- Including the sliver on the west side (as in Scenario 3.1, SAAM 2 and SAAM 3) so that the future UGB reaches Old Bend-Redmond Highway allows for completing the collector framework, but brings in smaller, developed rural residential parcels that are less suitable for commercial and industrial uses. This choice also increases the impact on Swalley Irrigation District.
- Including residential development in this area (as in Scenario 2.1) improves access to commercial services, but creates a potential compatibility concern for the abutting industrial uses. Including residential also slightly reduces average trip lengths, but only slightly, and not as much as including more substantial residential in the OB Riley / Gopher Gulch area.
- The area has some strengths as a large lot industrial site, but also has potential compatibility issues and not ideal lot configuration.

Draft recommendations for the hybrid

- This area is important and suitable for employment uses; however, including residential and the sliver on the west side appear to have more disadvantages than advantages. Therefore, an employment-focused expansion that excludes the sliver on the west, like Scenario 1.2 and SAAM-1, would be a good starting point for this area.
- Refine the arrangement of land uses to minimize compatibility issues with residential areas to the north and west (e.g. Light Industrial or Industrial Park as a transition).
- Explore the possibility of extending the collector to connect to US-20 across the smaller parcels on the western edge if they are not brought into the UGB.

Northeast Edge

General advantages and disadvantages

Advantages	Disadvantages
• Mid-size (4- to 10-acre) parcels contiguous to the UGB offer potential for near-term development • Portions of the area have good proximity to existing/planned parks & trails • Majority of the area is cost-effective to serve with sewer because it relies on the Hamby alignment and eastern	• Connectivity to existing UGB limited except for major roads • Over a half mile from existing and planned transit • small parcel size and adjacent residential uses limit suitability for larger/heavier industrial uses • small parcel sizes limit opportunities for master planning

Advantages	Disadvantages
portion of the Northeast Interceptor, which are needed regardless of expansion scenario choice • locations adjacent to major roads are generally well-suited to commercial uses • locations adjacent to major roads are moderately suitable for small industrial uses • not in Welded Tuff geologic area; • minimal overlap with DWPAs • not in Elk/Deer Range or ODFW Areas of Potential Concern • Wildfire hazard is somewhat lower than most potential expansion areas • housing likely to be more affordable in this part of the city • no forest land within 1 mile	• Some proximity to commercial farms • South of Butler Market Road, the land use pattern precludes a continuous north-south street that would parallel Hamby Road

Trade-offs of land use options

The scenarios and SAAMs encompass four discrete land use choices for the Northeast Edge:

1. Scenario 1.2: Fairly large, mostly residential expansion including most of the exception land between Yeoman Road and Bear Creek Road with commercial nodes at major roads
2. Scenarios 2.1 and 3.1: Limited expansion in three locations near major roads, with commercial nodes and adjacent residential
3. SAAM-1: Very large, mostly residential expansion including most of the exception land between Juniper Ridge and Neff Road with commercial nodes at major roads
4. SAAM-2 and SAAM-3: Very limited expansion – just commercial nodes at major roads with a small multifamily component.

The trade-offs associated with these choices are summarized below.

- Including the large rural subdivision south of Juniper Ridge (as in SAAM-1) significantly increases the acreage required to accommodate the housing need, since there is limited capacity for growth in that area.
- Including the area north of Yeoman Road (the northeastern-most part of the subarea, as in SAAM-1) makes more use of the proposed Hamby interceptor, but adds housing in a location that does not have good access to schools, parks, trails, or commercial services; increases congestion on nearby arterial corridors; and impacts Swalley Irrigation District.

- Including more of the land between Butler Market Road and Neff Road (as in Scenario 1.2 and SAAM-1) makes more use of the proposed Hamby interceptor, but increases trip lengths and VMT because people must travel further to reach a main road and their destinations, and local connectivity is not conducive to direct and convenient routes for local trips.
- Including the land near Bear Creek road (as in all but SAAM-2 and SAAM-3) increases sewer costs because that area would require an interim lift station, and also includes a small area of the 500' buffer for Drinking Water Protection Areas.

Draft recommendations for the hybrid

- Amount of expansion that falls in between Scenarios 2.1 / 3.1 and Scenario 1.2, because most of this area is highly efficient for sewer, and performs well for transportation if largely focused where connectivity is good and around the major roads connecting towards the center of Bend (e.g., Butler Market Road). Include somewhat more of the area near Butler Market Road and/or Neff Road than in Scenarios 2.1 and 3.1, but less than in Scenario 1.2 to try to balance these trade-offs.
- Exclude the Bear Creek Road area, because it is not cost-effective for sewer, reallocating that housing to the Butler Market Village area or the area north of Neff Road.

DSL Property & Darnell Estates

General advantages and disadvantages

Advantages	Disadvantages
• Large, single ownership offers opportunities for master planning on DSL Property (not Darnell Estates) • Good grid & trail connections on DSL Property (not Darnell Estates) • Relatively close to existing transit lines at the northeastern corner (but over a quarter mile) • DSL property relies on Hamby sewer alignment & Northeast Interceptor (NEI) • not in Welded Tuff geologic area; • minimal overlap with DWPAs • not in Elk/Deer Range or ODFW Areas of Potential Concern • housing likely to be more affordable in this part of the city • Portions of DSL property adjacent to major roads are generally relatively well-suited to commercial and industrial uses (not Darnell Estates)	• Localized pipeline required to connect DSL Property to Southeast Interceptor (SEI) • Darnell Estates requires additional extension of Hamby sewer alignment • Extreme fire hazard; hazard could be reduced to high with proper vegetation management • Low impact commercial farm(s) within ¼ mile of northeastern edge • Potential impacts to bat caves from adjacent urbanization

Advantages	Disadvantages
• no forest land within 1 mile • no irrigation district impacts • good potential for local routes that parallel 27th the entire length of the property	

Trade-offs of land use options

The scenarios and SAAMs encompass five different land use options for this area:

1. Scenario 1.2: roughly half the exception land on the DSL property included with a mix of uses; Darnell Estates excluded.
2. Scenario 2.1: all exception land on the DSL property included with a mix of uses; Darnell Estates excluded.
3. Scenario 3.1 and SAAM-3: roughly a third of the exception land on the DSL property included with residential and commercial uses; Darnell Estates excluded.
4. SAAM-1: small portions of the DSL property along the roads included for commercial and industrial uses; Darnell Estates excluded.
5. SAAM-2: small portions of the DSL property along the roads included for commercial uses and multifamily; Darnell Estates included for housing and a small amount of employment.

The trade-offs associated with these choices are summarized below.

- Including the full exception area on the DSL property (as in Scenario 2.1) allows for construction of a collector road running north/south, which improves connectivity.
- Including Darnell Estates (as in SAAM-2) is not cost-effective for sewer service and increases trip lengths, and offers few advantages.
- A larger residential expansion (as in Scenario 2.1 and Scenario 1.2) provides the opportunity to include a school, which helps make the area more walkable.
- Emphasizing multifamily housing (as in Scenario 3.1 and SAAM-3) reduces VMT/capita.

Draft recommendations for the hybrid

- The hybrid should be most similar to Scenario 2.1, because this area offers advantages across a range of performance measures, and because inclusion of the full exception area offers additional advantages and relatively few disadvantages.
- Include large lot industrial site at the southern end (as in Scenario 1.2) – the location preferred by the Employment TAC.
- Refine land uses to address bat cave locations (may reduce the amount of park land), and consider whether park land may be able to be managed to provide a fire buffer on the eastern edge rather than internal to the developed area.

“The Elbow”

General advantages and disadvantages

Advantages	Disadvantages
- Includes possible future park site and existing school - not in Welded Tuff geologic area; - no overlap with DWPAs - does not overlap with ODFW Areas of Potential Concern - housing likely to be more affordable in this part of the city - Portions adjacent to 27th / Knott are generally fairly well-suited to commercial and industrial uses - no forest land within 1 mile	- Bike/ped and vehicle connectivity are both limited unless a connection can be built between Rickard and 15th (e.g. a new extension of Murphy south and east from 15th to a point where it would connect with Rickard). - Over a half mile from existing and planned transit - Requires interim pump station that does not contribute to long-term solution and sewer infrastructure is unique to Elbow area - partially in Elk/Deer Range - Extreme wildfire hazard west of 27th/north of Knott Road; hazard could be reduced with proper management of vegetation. (Remainder of area is lower wildfire hazard.) 2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd. - Some impacts to Arnold Irrigation District deliveries

Trade-offs of land use options

The scenarios and SAAMs encompass three distinct land use options for this area:

1. Scenario 1.2: limited mixed use expansion along edge of existing UGB
2. Scenario 2.1: large mixed use expansion encompassing the full subarea (out to 27th / Knott)
3. Scenario 3.1 / SAAM-1 / SAAM-2 / SAAM-3: limited commercial / industrial expansion along the edge of the existing UGB (note that there are subtle variations among the alternatives in this group, but they are minor)

The trade-offs associated with these choices are summarized below.

- The large mixed use expansion in Scenario 2.1 provides the lowest average trip length for the area, in large part because it creates the potential for the extension of a collector road from 15th Street to 27th Street near Rickard Road (i.e., an extension of the Murphy

Road corridor), which improves connectivity in the area, but also puts more land use adjacent to the commercial farm to the south, across Knott Road and increases impacts on the Arnold Irrigation District.

- A small expansion in this area (as in all alternatives except Scenario 2.1) makes the needed sewer improvements not cost-effective on a per acre basis.

Draft recommendations for the hybrid

- Because this area is relatively well-suited for employment uses and there is so much adjacent single family housing inside the existing UGB to the west, it makes sense to bring this in primarily as an employment area with either a small, mixed housing component or no residential component. It completes the southeast area by providing employment uses, and does not necessarily need to provide a full mix of uses internal to the subarea. Transportation access is good for employment uses via Knott Road and 27th Street..
- Full or nearly full use of this area (as in Scenario 2.1), in order to spread the cost of the needed pump station across more acres.
- Refine arrangement of land uses to provide a transition between employment and existing lower density residential and to minimize commercial and residential uses along Knott Road to reduce impacts to the feed lot south of Knott.

“The Thumb”

General advantages and disadvantages

Advantages	Disadvantages
• The Ward and Baney properties are both over 20 acres and provide opportunities for master planning. • One of the Woodside Road properties is under 20 acres and contiguous to the existing UGB. • South end of US 97 is relatively uncongested. • Possible community connector bus stop on west side of US 97 could provide limited transit access to the southern end of this area in the long term. • not in Welded Tuff geologic area; • no overlap with DWPAs • does not overlap with ODFW Areas of Potential Concern • Wildfire hazard has been reduced due to good vegetation management • housing likely to be more affordable in	• Bike/ped and vehicle connectivity are both limited unless a full collector system can be built from China Hat to Knott (due to highway and railroad barriers). • Heavily reliant on US 97 for connections to the rest of the city • Average trip lengths are long from this area (highest of all subareas) • Baney property has limited access to US 97, making it less suitable for commercial and employment uses • Some sewer capacity upsizing required from current design of the Southeast Interceptor • Baney property requires its own gravity sewer line extension • almost entirely within DWPAs, where certain industrial and commercial uses may be a concern

Advantages	Disadvantages
this part of the city Ward property is generally well-suited to a wide range of uses: residential, commercial and industrial uses (Baney or Woodside Road properties not well suited to commercial or industrial)	- entirely within in Elk/Deer Range 2 commercial farms within 1/4 mile of Woodside Road properties - Arnold Irrigation District water serves Ward property (but would likely continue to serve the golf course) - Southern extent of Ward property and Woodside Road properties are under a mile from designated forest land

Trade-offs of land use options

The scenarios and SAAMs provide five different land use options for this area:

1. Scenario 1.2: Full use of the Ward property with a mix of housing and employment
2. Scenario 2.1: Use of roughly 2/3rds of the Ward property plus the Bany property for a mix of housing and employment
3. Scenario 3.1 and SAAM-3: Use of roughly 1/3rd of the Ward property for commercial and industrial uses
4. SAAM-1: Use of roughly 2/3rds of the Ward property for commercial and industrial uses
5. SAAM-2: Use of roughly 1/3rd of the Ward property for commercial and industrial uses plus Woodside Road properties for housing

The trade-offs associated with these choices are summarized below.

- Bringing in the full extent of the Ward property (as in Scenario 1.2) provides the opportunity for a complete collector network on that property that improves bicycle, pedestrian, and vehicular connectivity but generates enough traffic volume that it requires expanding Knott Road to three lanes (at significant expense). It also means more growth in the DWPA and in the Elk/Deer Range.
- Including the Baney property (as in Scenario 2.1) requires an additional gravity sewer main and does not appear to provide substantial benefits in other performance measures.
- Incorporating residential on the Ward property (as in Scenarios 1.2 and 2.1) may create potential for compatibility issues between industrial and residential uses and appears to have only modest benefits for the transportation system.
- More growth in this area (as in Scenarios 1.2 and 2.1 and SAAM-1) hurts overall performance on VMT because of the long average trip lengths from this area.
- A relatively large expansion that extends from US 97 to Knott Road (as in Scenarios 1.2 and 2.1) provides more opportunity for internal site collector roads, even if they don't extend all the way through the property, and spreads cost of sewer improvements over more acres.

- Siting commercial uses adjacent to China Hat Road (as in Scenario 3.1, SAAM-1, SAAM-2 and SAAM-3) provides better access for existing neighborhoods to the north, though these are low density and may not provide much support for such commercial.

Draft recommendations for the hybrid

- Because this area is relatively well-suited for employment uses and there is so much adjacent single family housing inside the existing UGB to the north, and because growth in this area tends to increase VMT, it makes sense to bring this in primarily as an employment area with either a small housing component or no residential component.
- An amount of expansion between Scenario 2.1 (without the Baney property) and Scenario 3.1 / SAAM-1 may best balance the trade-offs for this property, especially if there remains enough area to provide a collector connection from China Hat to Knott.
- Refine arrangement of land uses to best utilize each area of the Ward property.
- Include a high school as identified by the School District and a community park.

West Area

General advantages and disadvantages

Advantages	Disadvantages
• Nearly all properties in the area are well over 20 acres and provide opportunities for master planning on a large scale • Some connections to existing/planned parks & trails • Relatively close to existing transit lines on the eastern edge (but over a quarter mile) • No issues identified for serving with City of Bend water • No overlap with ODFW Areas of Potential Concern • Reduced wildfire hazard due to good vegetation management; • No commercial farms within a quarter mile • No irrigation district water	• Few to no parcels under 20 acres and contiguous to the current UGB • Limited capacity in Awbrey Glen pump station and force main, which would serve the northwestern portion of this subarea • Limited trail system • Difficult to build connected local streets • Largely welded tuff geology • Entirely within Deer & Elk Winter Range • Housing is likely to be more expensive in this area • Topography, transportation access and residential proximity limit suitability for industrial uses • Relatively low visibility limits suitability for commercial uses • Under a mile from forest land • Some area adjacent to the current UGB is within a DWPA

Trade-offs of land use options

The scenarios and SAAMs provide four different land use options for this area:

1. Scenario 1.2: Modest, primarily residential expansion that extends along the eastern edge of the subarea
2. Scenario 2.1: Modest mixed use expansion focused in the southern portion of the subarea
3. Scenario 3.1: Relatively large, primarily residential expansion that runs along the eastern side of the subarea
4. SAAM-3: Full use of the subarea for a primarily residential expansion

(Note that SAAM-1 and SAAM-2 exclude the West Area altogether.) The trade-offs associated with these choices are summarized below.

- Scenario 3.1 requires an additional sewer extension to connect to the Awbrey Glen pump station and upsizing of the pumps to serve the northern portion of the Day property (as well as the Shevlin area), which increases costs (though the cost per acre is similar to Scenarios 1.2 and 2.1).
- The full use of the sub-area (as in SAAM-3) exceeds the capacity of the Awbrey Glen pump station and force main and requires a new regional pump station and force main to serve the northwestern portion of the Day property. The same area (the northwestern portion of the Day property) would also bring in housing that is not within walking distance of commercial and that is within a quarter mile of designated forest land.
- Bringing in a larger area (as in Scenario 3.1 and SAAM-3) increases average trip length somewhat and also slightly increases reliance on congested corridors, but spreads the cost of connectivity improvements over a larger area, reducing the cost per acre.
- The southern portion of the West Area has good proximity to existing schools; extending further north (as in Scenario 1.2, Scenario 3.1 and SAAM-3 to varying degrees) puts more housing out of walking distance of schools.
- Incorporating employment uses (as in Scenario 2.1) puts those uses in a location that has some suitability concerns.
- A greater residential expansion (as in Scenario 3.1 and SAAM-3) may make the commercial component shared by all alternatives more viable.

Draft recommendations for the hybrid

- Expand primarily in the southern portion (Miller property), as in Scenario 2.1, where connectivity is good, transit and trails are closer, and sewer infrastructure is cost-effective to provide.
- Because this area has limited suitability for commercial and industrial uses, it makes sense to focus on residential uses, though retaining a small commercial area is appropriate and a very small amount of light industrial use may be appropriate.

Shevlin Area

General advantages and disadvantages

Advantages	Disadvantages
• Includes planned school site (currently in School District ownership) • Good proximity to existing/planned parks & trails • Large block of land in common ownership creates potential for master planning • Minimal congestion on roads in and serving this area • Relatively close to existing transit lines at the southeastern corner (but over a quarter mile) • No commercial farms within a quarter mile • No irrigation district water	• Few or no parcels under 20 acres and contiguous to the existing UGB • Average trip lengths are long from this area relative to other areas • Difficult to build connected local streets in much of this area • Limited capacity in Awbrey Glen pump station and force main, which would serve this subarea • Drinking water supply is through smaller infrastructure, which is more problematic to expand • Partially in welded tuff geology • Includes small areas of 500' buffer for Drinking Water Protection Areas • Entirely within Deer & Elk Winter Range • Largely within ODFW Areas of Potential Concern • Northwestern edge is adjacent to Tumalo Creek (but the Bend Metropolitan Parks & Recreation District has ownership of the property within roughly 500ft of the river) • Mix of High and Extreme fire hazard; outer portions of the subarea have topography and unmanaged adjacent lands that could make it difficult to reduce fire hazard • Housing is likely to be more expensive in this area • Topography, transportation access and residential proximity limit suitability for industrial uses • Low visibility limits suitability for commercial uses • Western corner within a quarter mile of forest land

Trade-offs of land use options

There are two development options tested in the Scenarios and SAAMS:

1. Scenario 3.1: Development of the southern half of the subarea with primarily residential uses and some commercial
2. SAAM-1: Development of the full subarea with primarily residential and some commercial

(Note that Scenario 1.2, Scenario 2.1, SAAM-2 and SAAM-3 exclude the Shevlin Area altogether.) The trade-offs associated with these choices are summarized below.

- Bringing in the full area creates better connections to the existing city for bicycles and pedestrians and spreads the cost of transportation improvements over more acres, reducing the cost per acre (though not the total cost).
- However, the full build option exceeds capacity at the Awbrey Glen pump station and force main, requiring a new regional pump station (at significant expense).¹³ It also adds housing that is over a half-mile from the school and the commercial area in the southern part of this subarea; increases average trip length and per capita household VMT; puts development adjacent to Tumalo Creek; increases housing in an area where fire hazard may be difficult to mitigate; increases impacts on wildlife habitat areas; and puts more development within a quarter mile of designated forest land.

Draft recommendation for the hybrid

- Exclude this subarea, as in Scenarios 2.1 and 1.2, because of its relatively poor transportation performance, its impacts on wildlife habitat, its relatively higher fire hazard that may be difficult to mitigate, and lack of advantages over other subareas suitable for residential uses.

OB Riley / Gopher Gulch Area

General advantages and disadvantages

Advantages	Disadvantages
• Good proximity to planned parks on the west side of the subarea • Western portion (Gopher Gulch) provides large single ownership with potential for master planning on a large scale; one other large ownership east of OB Riley	• Eastern and southern edges include many parcels under 20 acres and contiguous to the existing UGB, though many have development on them. • Western portion does not have connectivity to surrounding networks for bikes, pedestrians, or vehicles.

¹³ The peak flow excess capacity of the Awbrey Glen pumps and downstream force main for UGB expansion are approximately 60 gpm (15 gpm average flow) and 300 gpm (75 gpm average flow) respectively. This equates to approximately 120 additional equivalent dwelling units (EDUs) for the pumps and 580 additional EDUs for the force main. Peak and average flow estimates at the Awbrey Glen pump station should be confirmed with flow metering and pump testing prior to serving future UGB customers.

Advantages	Disadvantages
• Local grid opportunity with OB Riley as a spine roadway for the area. • No issues identified for serving with City of Bend water • Not in welded tuff geology • not in Elk/Deer Range or ODFW Areas of Potential Concern • Eastern portion is generally well-suited to industrial and commercial uses • Most of the area is not near commercial farms (but 2 commercial farms within 1/4 mile across canyon from the western edge) • Over a mile from designated forest lands • Southeastern corner is within a quarter mile of existing transit (a primary transit corridor)	• Requires extension of Northeast Interceptor west of US 20, which doesn't benefit any other areas unless a regional pump station is built to serve the West Area and/or Shevlin Area • Includes small areas of 500' buffer for Drinking Water Protection Areas • Western edge of Gopher Gulch property abuts the Deschutes River – some is public ownership, some is private ownership • High and extreme wildfire hazard, which could be reduced with proper management of vegetation except along steep slopes adjacent to river • Housing may be more expensive in this area (particularly western portions) • Impacts Swalley Irrigation District deliveries

Trade-offs of land use options

There are four different development options tested in the Scenarios and SAAMs:

1. Scenario 1.2, Scenario 2.1 and SAAM-1: Modest expansion east of OB Riley for employment uses only (note that Scenario 2.1 includes the large lot industrial site in this area, and has a slightly different arrangement of land uses)
2. Scenario 3.1: Development both east and west of OB Riley (but not into the Gopher Gulch area to the west) with a mix of housing and employment
3. SAAM-2: Inclusion of the full subarea with a very large residential expansion in the Gopher Gulch area and a mix of housing and employment (like Scenario 3.1) around OB Riley Road
4. SAAM-3: Inclusion of the full length of the subarea between US 20 and OB Riley for primarily employment uses, with a small amount of multifamily housing.

The trade-offs associated with these choices are summarized below.

- Including the rural residential areas in the southern part of the subarea (as in Scenario 3.1 and SAAM-2) provides more parcels under 20 acres and contiguous to the UGB, but many of these are developed and may be less efficient to accommodate future growth.
- Larger expansions with more commercial and residential (as opposed to industrial) development (as in Scenario 3.1, SAAM-2, and, to a lesser extent, SAAM-3) increase congestion and reliance on congested corridors. Larger expansions also increase impacts on Swalley Irrigation District.

- Including the full Gopher Gulch property (as in SAAM-2) brings development adjacent to the Deschutes River and the steep slopes where fire hazard may be difficult to mitigate, puts development within a quarter mile of two commercial farms (though they are separated by the river) and significantly increases impacts on Swalley Irrigation District.
- Including the large lot industrial site in this subarea (as in Scenario 2.1) puts it on a difficult site that is oddly shaped and may not work for many users.

Draft recommendations for the hybrid

- An employment-focused expansion that is primarily or entirely east of OB Riley Road, like those shown in Scenarios 1.2 and 2.1 and SAAM-1, is concluded to be a good starting point for this area, because: (a) the eastern portion of this area is important and suitable for employment uses; (b) including the portion west of OB Riley appears to have more disadvantages than advantages (particularly congestion, impacts to Swalley Irrigation District, and expansion onto developed rural residential land); and (c) the Gopher Gulch area does not offer enough advantages relative to other potential residential expansion areas to focus all residential growth there.
- Because of the weaknesses of the potential site identified for large lot industrial use, that use should not be included in this subarea, consistent with the Employment TAC recommendation.

SYNTHESIS & RECOMMENDATIONS

Based on the body of work captured in this evaluation report, in considering and in balancing the four Goal 14 Factors, Scenario 2.1 performed the best of the alternatives overall, regardless of whether and to what degree weighting is applied to distinguish between the more and less important performance measures. However, the subarea analysis shows that there may be room for improvement through modifications to some of the subareas, as summarized in brief below.

- North Triangle: employment-focused rather than including residential
- Northeast Edge: drop the roughly 40-acre Bear Creek Road area, shifting that growth to create more complete neighborhoods around Butler Market Village and/or Neff Road, while retaining the focus on nodes along existing arterial corridors connecting to the city center
- DSL Property: include large lot industrial site at the southern end and refine land use assumptions
- The Elbow: refine arrangement of land uses along Knott Road to minimize impacts to feed lot
- The Thumb: refine land use assumptions and include a high school and a community park but reduce total expansion area somewhat
- West Area: reduce the amount of commercial and industrial use in this subarea
- Shevlin: none, follow Scenario 2.1 (area excluded)
- OB Riley / Gopher Gulch: remove large lot industrial use from this area (replace with other employment uses)

LIST OF APPENDICES

- Appendix A Goal 14 administrative rule (660-024-0060)
- Appendix B Scenario Evaluation Data Sheets
- Appendix C Performance Measure Weighting Examples and Results
- Appendix D Technical Documentation (*provided under separate cover*)

APPENDIX A: GOAL 14 ADMINISTRATIVE RULE (660-024-0060)

Boundary Location Alternatives Analysis

(1) When considering a UGB amendment, a local government must determine which land to add by evaluating alternative boundary locations. This determination must be consistent with the priority of land specified in ORS 197.298 and the boundary location factors of Goal 14, as follows:

(a) Beginning with the highest priority of land available, a local government must determine which land in that priority is suitable to accommodate the need deficiency determined under OAR 660-024-0050.

(b) If the amount of suitable land in the first priority category exceeds the amount necessary to satisfy the need deficiency, a local government must apply the location factors of Goal 14 to choose which land in that priority to include in the UGB.

(c) If the amount of suitable land in the first priority category is not adequate to satisfy the identified need deficiency, a local government must determine which land in the next priority is suitable to accommodate the remaining need, and proceed using the same method specified in subsections (a) and (b) of this section until the land need is accommodated.

(d) Notwithstanding subsection (a) to (c) of this section, a local government may consider land of lower priority as specified in ORS 197.298(3).

(e) For purposes of this rule, the determination of suitable land to accommodate land needs must include consideration of any suitability characteristics specified under section (5) of this rule, as well as other provisions of law applicable in determining whether land is buildable or suitable.

(2) Notwithstanding OAR 660-024-0050(4) and subsection (1)(c) of this rule, except during periodic review or other legislative review of the UGB, a local government may approve an application under ORS 197.610 to 197.625 for a UGB amendment proposing to add an amount of land less than necessary to satisfy the land need deficiency determined under OAR 660-024-0050(4), provided the amendment complies with all other applicable requirements.

(3) The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and to determine the UGB location, a local government must show that all the factors were considered and balanced.

(4) In determining alternative land for evaluation under ORS 197.298, "land adjacent to the UGB" is not limited to those lots or parcels that abut the UGB, but also includes land in the vicinity of the UGB that has a reasonable potential to satisfy the identified need deficiency.

(5) If a local government has specified characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need, the local government may limit its consideration to land that has the specified characteristics when it conducts the boundary location alternatives analysis and applies ORS 197.298.

(6) The adopted findings for UGB adoption or amendment must describe or map all of the alternative areas evaluated in the boundary location alternatives analysis. If the analysis involves more than one parcel or area within a particular priority category in ORS 197.298 for which circumstances are the same, these parcels or areas may be considered and evaluated as a single group.

(7) For purposes of Goal 14 Boundary Location Factor 2, "public facilities and services" means water, sanitary sewer, storm water management, and transportation facilities.

(8) The Goal 14 boundary location determination requires evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services needed to urbanize alternative boundary locations. This evaluation and comparison must be conducted in coordination with service providers, including the Oregon Department of Transportation with regard to impacts on the state transportation system. "Coordination" includes timely notice to service providers and the consideration of evaluation methodologies recommended by service providers. The evaluation and comparison must include:

(a) The impacts to existing water, sanitary sewer, storm water and transportation facilities that serve nearby areas already inside the UGB;

(b) The capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB; and

(c) The need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements on existing roadways and, for urban areas of 25,000 or more, the provision of public transit service.

Stat. Auth.: ORS 197.040, Statewide Planning Goal 14

Stats. Implemented: ORS 195.036, 197.015, 197.295 - 197.314, 197.610 - 197.650, 197.764

Hist.: LCDD 8-2006, f. 10-19-06, cert. ef. 4-5-07; LCDD 2-2009, f. 4-8-09, cert. ef. 4-16-09

APPENDIX B: SCENARIO EVALUATION DATA SHEETS

Index

Factor 1: Efficient accommodation of identified land needs

A. Complete Communities and Great Neighborhoods

- (1) Housing units within walking distance of existing & planned schools in 2028
- (2) Housing units within walking distance of existing & planned parks and trails in 2028
- (3) Housing units within walking distance of commercial services in 2028
- (4) Jobs/housing balance (subarea balance)
- (5) Potential for master planning

B. Efficient, Timely Growth

- (1) Total acres of expansion
- (2) Gross density for new housing in 2028
- (3) Net density for new jobs in 2028
- (4) Percent of urbanized acres on parcels under 20 acres and contiguous to the existing UGB
- (5) Vacant vs. developed land included

Factor 2: Orderly and economic provision of public facilities and services

A. Balanced Transportation System

- (1) Total VMT per capita
- (2) Average trip length
- (3) Household VMT per capita
- (4) Congestion
- (5) Walk/bike safety and connectivity
- (6) System connectivity & progression of system hierarchy
- (7) Mode split
- (8) Average Daily walk trips
- (9) Proximity to transit corridors
- (10) Housing & jobs within ¼ mile of transit corridors
- (11) Intersection density

B. Cost Effective Infrastructure

Transportation Infrastructure

- (1) Total cost of transportation improvements required
- (2) Cost per acre of transportation improvements
- (3) New linear miles of roadway

Sanitary Sewer Infrastructure

- (4) Efficiency of additional sewer system improvements required
- (5) Initial capital cost of sewer system improvements required

- (6) Initial capital cost of sewer system improvements per acre of development

Drinking Water Infrastructure

- (7) Water system improvements required in city water district
- (8) Capacity of Avion Water system

Storm Water Infrastructure

- (9) Total impervious area for new development
- (10) Acres of new development within Drinking Water Protection Areas (DWPA)
- (11) Acres of new development with welded tuff geology

Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)

A. Quality Natural Environment (Environmental and Energy Consequences)

- (1) Development in wildlife areas
- (2) Linear distance of riparian areas adjacent to development
- (3) Wildfire hazard
- (4) Greenhouse gas emissions
- (5) Energy Use
- (6) Average Water Consumption per Household

B. Housing Options and Affordability (Social Consequences)

- (1) Average cost of new single family housing
- (2) Housing mix of new housing (subarea balance)

C. Strong Diverse Economy (Economic Consequences)

- (1) Site suitability for large lot industrial use
- (2) Site suitability for areas identified for industrial uses
- (3) Site suitability for areas identified for commercial uses

Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB

A. Compatibility with Farms and Forests

- (7) Farm practices & high value farm land adjacent to expansion areas
- (8) Impact to irrigation districts
- (9) Designated forest land adjacent to expansion areas

Factor 1: Efficient Accommodation of Identified Land Needs

Community Outcome A Complete Communities and Great Neighborhoods

Author: Andrew Parish

APG

Date: 8/28/2015

Performance Measure 1 Housing Units within Walking Distance of Schools

Brief Description of Evaluation: This is an update to performance measure 1.A.1 using feedback from the Bend-La Pine School District about placement of schools within the scenario and SAAMs.

Data Sources Existing school locations from City of Bend, Deschutes County. Additional information provided at School District meeting, August 2015

Interpretation and Key Grey are areas that have no significant housing (minor amounts are projected even though employment designations are used, based on existing development in employment designations). Red areas have significant housing but few homes within walking distance of schools. Yellow areas have between 70 and 80% of housing units within walking distance of a school. Green areas have greater than 80% of their housing units within walking distance of a school.

	"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank	Scenario 1.2 Value Units	Scenario 2.1 Value Units	Scenario 3.1 Value Units	SAAM-1 Value Units	SAAM-2 Value Units	SAAM-3 Value Units
Evaluation Geography	Scenario 1.2 Value Units	Scenario 2.1 Value Units	Scenario 3.1 Value Units	SAAM-1 Value Units	SAAM-2 Value Units	SAAM-3 Value Units					
Total Future UGB (Including Current UGB)	60% Housing Units	62% Housing Units	61% Housing Units	60% Housing Units	59% Housing Units	58% Housing Units					
Total Expansion Area (excluding current UGB)	69% Housing Units	82% Housing Units	75% Housing Units	82% Housing Units	75% Housing Units	66% Housing Units					
Subareas											
North Triangle	0% Housing Units	100% Housing Units	18% Housing Units	0% Housing Units	18% Housing Units	0% Housing Units					
NE Edge	68% Housing Units	19% Housing Units	15% Housing Units	87% Housing Units	0% Housing Units	0% Housing Units					
DSL Property	0% Housing Units	100% Housing Units	100% Housing Units	27% Housing Units	0% Housing Units	0% Housing Units					
The "Elbow"	93% Housing Units	71% Housing Units	46% Housing Units	33% Housing Units	46% Housing Units	46% Housing Units					
The "Thumb"	100% Housing Units	100% Housing Units	100% Housing Units	100% Housing Units	24% Housing Units	100% Housing Units					
West Area	84% Housing Units	85% Housing Units	73% Housing Units	0% Housing Units	0% Housing Units	94% Housing Units					
Shevlin Area	0% Housing Units	0% Housing Units	92% Housing Units	84% Housing Units	0% Housing Units	0% Housing Units					
OB Riley / Gopher Gulch Area	0% Housing Units	46% Housing Units	98% Housing Units	0% Housing Units	90% Housing Units	0% Housing Units					
Existing UGB (if applicable)	59% Housing Units	60% Housing Units	60% Housing Units	58% Housing Units	58% Housing Units	57% Housing Units					
Overall Score	2	5	3	5	4	2					

	School district recommended a school in the Thumb area, increasing its score over the original scenario. The school in the DSL property was removed in this scenario, contributing to its low score.	This scenario performs very well due to the mixed and "complete neighborhood" character of expansion areas. The NE edge is the only residential expansion without a new school.	This scenario includes some expansion to the West that does not include a school. The District also removed a school from the NE Edge, compared to the original scenario.	This scenario performs very well due to the concentrated residential expansions around a planned school in the Shevlin Area and the addition of two schools in the Northeast Edge.	School district recommended an additional two elementary schools in the Gopher Gulch area, increasing its score over the original scenario.	This scenario includes modest residential expansion in the DSL property, which does not include a school. The West Area is adjacent to existing schools and one proposed school.
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For more information about this performance measure, see accompanying technical memorandum from Angelo Planning Group

Factor 1: Efficient Accommodation of Identified Land Needs
Community Outcome A
Complete Communities and Great Neighborhoods

Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Date: 9/10/2015

Performance Measure 2		Housing Units within Walking Distance of Parks & Trails															
Brief Description of Evaluation:		The share of the total (existing and future) housing units within one half mile of existing and proposed parks and existing trails.															
Data Sources		Existing parks, open space and trails locations from Deschutes County, City of Bend and US Forest Service. City Officials were consulted about the location of new parks.															
Interpretation and Key		Over 95% of housing units within walking distance of a park or trail was rated as "Good", 75-95% of housing units within walking distance of a park or trail was rated "Fair", less than 75% was rated "Poor". Grey cells with N/A indicate subareas that are not included in the alternative; grey cells with values are indicate subareas with trivial amounts of housing assumed in commercial areas.															
		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank	Scenario 3.1		SAAM-1		SAAM-2		SAAM-3				
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units		
Evaluation Geography																	
Total Future UGB (Including Current UGB)		100%	Housing Units	100%	Housing Units	100%	Housing Units	99%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
Total Expansion Area (excluding current UGB)		97%	Housing Units	98%	Housing Units	100%	Housing Units	91%	Housing Units	99%	Housing Units	99%	Housing Units	99%	Housing Units		
Subareas																	
North Triangle		39%	Housing Units	95%	Housing Units	76%	Housing Units	39%	Housing Units	76%	Housing Units	76%	Housing Units	76%	Housing Units		
		98%	Housing Units	99%	Housing Units	100%	Housing Units	88%	Housing Units	98%	Housing Units	98%	Housing Units	98%	Housing Units		
		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
The "Elbow"		89%	Housing Units	89%	Housing Units	99%	Housing Units	63%	Housing Units	90%	Housing Units	90%	Housing Units	78%	Housing Units		
		100%	Housing Units	100%	Housing Units	100%	Housing Units	N/A	Housing Units	N/A	Housing Units	100%	Housing Units	100%	Housing Units		
The "Thumb"		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
		89%	Housing Units	89%	Housing Units	99%	Housing Units	63%	Housing Units	90%	Housing Units	90%	Housing Units	78%	Housing Units		
West Area		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
Shevlin Area		N/A	Housing Units	N/A	Housing Units	100%	Housing Units	100%	Housing Units	N/A	Housing Units	N/A	Housing Units	N/A	Housing Units		
OB Riley / Gopher Gulch Area		62%	Housing Units	98%	Housing Units	100%	Housing Units	67%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
Existing UGB (if applicable)		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units		
Overall Score		5	5	5	5	5	5	4	5	5	5	5	5	5	5		
		The only subarea with a residential component that doesn't have nearly 100% of housing units within walking distance of a park or trail is The Thumb, where it would be easy to plan a future park.				The only subarea with a residential component that doesn't have nearly 100% of housing units within walking distance of a park or trail. The Thumb, where it would be easy to plan a future park.				The Northeast edge includes some areas that are not within walking distance of a park or trail; it would not be easy to provide a park to serve those areas.				The only subarea with a residential component that doesn't have nearly 100% of housing units within walking distance of a park or trail is The Thumb, where it would be easy to plan a future park.			
		The only subarea with a residential component that doesn't have nearly 100% of housing units within walking distance of a park or trail is The Thumb, where it would be easy to plan a future park.				All subareas with residential neighborhoods planned have nearly 100% of housing units within walking distance of a park or trail.				The Northeast edge includes some areas that are not within walking distance of a park or trail; it would not be easy to provide a park to serve those areas.				All subareas with residential neighborhoods planned have nearly 100% of housing units within walking distance of a park or trail.			

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 1: Efficient Accommodation of Identified Land Needs

Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Community Outcome A Complete Communities and Great Neighborhoods

Date: 9/10/2015

Performance Measure 3 Housing Units within Walking Distance of Commercial Services

Brief Description of Evaluation: The share of the total housing units within one half mile of existing and commercial areas.

Data Sources Existing commercial area was based existing on parcel (Field GENPLAN) data from the Deschutes County Assessor's office, via the City of Bend. Future commercial areas were determined as development types that contained commercial services.

Interpretation and Key Over 90% of housing units within walking distance of commercial was rated as "Good", 70-90% of housing units within walking distance of commercial was rated "Fair"; less than 70% was rated "Poor". Grey cells with N/A indicate subareas that are not included in the alternative; grey cells with values are indicate subareas with trivial amounts of housing assumed in commercial areas.

Interpretation and Key						Not appropriate to rank							
Evaluation	Geography	Scenario 1.2 Value	Units	Scenario 2.1 Value	Units	Scenario 3.1 Value	Units	SAAM-1 Value	Units	SAAM-2 Value	Units	SAAM-3 Value	Units
Total Future UGB (Including Current UGB) Total Expansion Area (excluding current UGB)		82%	Housing Units	84%	Housing Units	87%	Housing Units	83%	Housing Units	84%	Housing Units	82%	Housing Units
		92%	Housing Units	99%	Housing Units	96%	Housing Units	57%	Housing Units	90%	Housing Units	71%	Housing Units
Subareas													
North Triangle		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units
NE Edge		83%	Housing Units	96%	Housing Units	97%	Housing Units	65%	Housing Units	64%	Housing Units	64%	Housing Units
DSL Property		100%	Housing Units	100%	Housing Units	100%	Housing Units	89%	Housing Units	100%	Housing Units	99%	Housing Units
The "Elbow"		100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units	100%	Housing Units
The "Thumb"		100%	Housing Units	100%	Housing Units	100%	Housing Units	95%	Housing Units	16%	Housing Units	65%	Housing Units
West Area		97%	Housing Units	97%	Housing Units	93%	Housing Units	N/A	Housing Units	N/A	Housing Units	62%	Housing Units
Shevlin Area	N/A		Housing Units	N/A	Housing Units	99%	Housing Units	37%	Housing Units	N/A	Housing Units	N/A	Housing Units
OB Riley / Gopher Gulch Area		70%	Housing Units	64%	Housing Units	96%	Housing Units	60%	Housing Units	95%	Housing Units	93%	Housing Units
Existing UGB (if applicable)		81%	Housing Units	83%	Housing Units	86%	Housing Units	85%	Housing Units	83%	Housing Units	83%	Housing Units
Overall Score		4	🟢	5	🟢	5	🟢	1	🔴	3	○	2	🔴
The West Area, which is the focus of this SAAM, does not score well in this analysis. There are not other locations for commercial that would be appropriate within that area, so it would be hard to improve its score. The OB Riley / Gopher Gulch Area and the Damell Estates / DSL area both score well; but the small SAA near The Thumb does not perform well in this analysis. Neither of the two SAAs tested in SAAM 1 provide good access to commercial for many housing units. All expansion areas have over 90% of housing units within walking distance of commercial All expansion areas except for the Northeast Edge have over 90% of housing units within walking distance of commercial. The areas of the Northeast edge that are not proximate to commercial cannot easily be provided with walkable commercial services.													

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Job-Housing Balance																										
The ratio of total jobs to total housing units.																										
Envision Tomorrow Scenario Builder output.																										
Jobs/housing balance is fairly constant at the Scenario / SAAM level and variations are not meaningful at that level. Interpretation and rating is at the subarea level. Subareas are considered "balanced" if their ratio of jobs to housing units is between 1:6 and 6:1 (0.17 to 6). Subareas are considered moderately balanced if their ratio of jobs to housing units is between 1:12 and 12:1 (0.08 to 12). Subareas are considered imbalanced if their ratio of jobs to housing units is less than 1:12 or more than 12:1. Overall scores are based on how many of the subareas are balanced, moderately balanced, and imbalanced.																										
Performance Measure 4 Brief Description of Evaluation: Data Sources Interpretation and Key	Scenario 1.2			Scenario 2.1			Scenario 3.1			SAAM-1		SAAM-2		SAAM-3												
	Value	Units		Value	Units		Value	Units		Value	Units	Value	Units	Value	Units											
	1.10	Jobs:HU		1.10	Jobs:HU		1.10	Jobs:HU		1.10	Jobs:HU		1.09	Jobs:HU		1.10	Jobs:HU									
	1.96	Jobs:HU		1.94	Jobs:HU		1.97	Jobs:HU		1.79	Jobs:HU		1.69	Jobs:HU		1.89	Jobs:HU									
	Subareas																									
	North Triangle NE Edge DSL Property The "Elbow" The "Thumb" West Area Shevlin Area OB Riley / Gopher Gulch Area Existing UGB (if applicable)	37.08	Jobs:HU	1.64	Jobs:HU	32.63	Jobs:HU	37.08	Jobs:HU	32.63	Jobs:HU	32.63	Jobs:HU	32.63	Jobs:HU	32.63	Jobs:HU									
		0.31	Jobs:HU	0.62	Jobs:HU	0.55	Jobs:HU	0.27	Jobs:HU	0.90	Jobs:HU	0.90	Jobs:HU	0.90	Jobs:HU	0.90	Jobs:HU									
		2.28	Jobs:HU	1.63	Jobs:HU	1.68	Jobs:HU	17.87	Jobs:HU	2.09	Jobs:HU	2.09	Jobs:HU	0.89	Jobs:HU	0.89	Jobs:HU									
		2.89	Jobs:HU	3.04	Jobs:HU	32.11	Jobs:HU	24.22	Jobs:HU	32.11	Jobs:HU	32.11	Jobs:HU	32.11	Jobs:HU	32.11	Jobs:HU									
		4.33	Jobs:HU	2.76	Jobs:HU	52.20	Jobs:HU	25.08	Jobs:HU	8.54	Jobs:HU	8.54	Jobs:HU	45.85	Jobs:HU	45.85	Jobs:HU									
		0.24	Jobs:HU	0.90	Jobs:HU	0.13	Jobs:HU	N/A	Jobs:HU	N/A	Jobs:HU	N/A	Jobs:HU	0.20	Jobs:HU	0.20	Jobs:HU									
		N/A	Jobs:HU	N/A	Jobs:HU	0.94	Jobs:HU	0.19	Jobs:HU	N/A	Jobs:HU	N/A	Jobs:HU	N/A	Jobs:HU	N/A	Jobs:HU									
15.16		Jobs:HU	7.94	Jobs:HU	1.64	Jobs:HU	13.03	Jobs:HU	0.58	Jobs:HU	0.58	Jobs:HU	6.20	Jobs:HU	6.20	Jobs:HU										
1.12		Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU	1.12	Jobs:HU										
Overall Score														3	○	5	●	4	●	1	●	4	●	2	●	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 1: Efficient Accommodation of Identified Land Needs																
Community Outcome A					Author:		APG									
Complete Communities and Great Neighborhoods					CJ Daxsee, Andrew Parish		10/1/2015									
Performance Measure 5																
Opportunity for master planning																
Brief Description of Evaluation:					Percent of developed area (excluding Schools) on land that is greater than 20 acres in common ownership.											
Data Sources					Deschutes County assessors data.											
Interpretation and Key					This measure looks at how much of the expansion area will be subject to master planning requirements. Large properties that will be required to undergo master planning offer the potential for greater input from the city in the ultimate design of the new development (however, the master planning process does add time and expense to development). Subareas and Scenarios / SAAMs that have more than 70% of the developed area on sites over 20 acres in common ownership are rated "Good", 50-70% is rated "Fair", under 50% is rated "Poor".											
					"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank			
					Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
					Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
					SAAM-3	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value
Evaluation Geography	Total Future UGB (Including Current UGB)	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres	> 20 acres				
		< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres	< 20 acres				
Total Expansion Area (excluding current UGB)	Subareas	61% > 20 acres	76% > 20 acres	66% > 20 acres	38% > 20 acres	62% < 20 acres	41% < 20 acres	59% > 20 acres	79% > 20 acres	21% < 20 acres						
		39% < 20 acres	24% < 20 acres	34% < 20 acres												
North Triangle		74% > 20 acres	76% > 20 acres	61% > 20 acres	74% > 20 acres			61% > 20 acres		61% > 20 acres						
		26% < 20 acres	24% < 20 acres	38% < 20 acres	26% < 20 acres			39% < 20 acres		39% < 20 acres						
NE Edge		12% > 20 acres	0% > 20 acres	0% > 20 acres	0% > 20 acres	4% > 20 acres		0% > 20 acres		0% > 20 acres						
		88% < 20 acres	100% < 20 acres	100% < 20 acres	100% < 20 acres	96% < 20 acres		100% < 20 acres		100% < 20 acres						
DSL Property		100% > 20 acres	100% > 20 acres	100% > 20 acres	100% > 20 acres	100% > 20 acres		37% > 20 acres		100% > 20 acres						
		0% < 20 acres	0% < 20 acres	0% < 20 acres	0% < 20 acres	0% < 20 acres		63% < 20 acres		0% < 20 acres						
The "Elbow"		67% > 20 acres	69% > 20 acres	68% > 20 acres	69% > 20 acres			69% > 20 acres		76% > 20 acres						
		33% < 20 acres	31% < 20 acres	32% < 20 acres	31% < 20 acres			31% < 20 acres		24% < 20 acres						
The "Thumb"		100% > 20 acres	100% > 20 acres	100% > 20 acres	100% > 20 acres	100% > 20 acres		99% > 20 acres		100% > 20 acres						
		0% < 20 acres	0% < 20 acres	0% < 20 acres	0% < 20 acres	0% < 20 acres		1% < 20 acres		0% < 20 acres						
West Area		97% > 20 acres	100% > 20 acres	95% > 20 acres	-	> 20 acres	-	> 20 acres		92% > 20 acres						
		3% < 20 acres	0% < 20 acres	5% < 20 acres	-	< 20 acres	-	< 20 acres		8% < 20 acres						
Shewlin Area		> 20 acres	> 20 acres	100% > 20 acres	100% > 20 acres	63% > 20 acres		> 20 acres		-						
		< 20 acres	< 20 acres	0% < 20 acres	0% < 20 acres	37% < 20 acres		< 20 acres		-						
OB Riley / Gopher Gulch Area		40% > 20 acres	37% > 20 acres	24% > 20 acres	40% > 20 acres	57% > 20 acres		57% > 20 acres		30% > 20 acres						
		60% < 20 acres	63% < 20 acres	76% < 20 acres	60% < 20 acres	43% < 20 acres		43% < 20 acres		70% < 20 acres						
Existing UGB (if applicable)																
Overall Score		3 ○	5 ●	3 ○	1 ●	3 ○		3 ○		5 ●						
		An emphasis on growth in the Northeast Edge, which has smaller parcels, results less of the expansion that would be subject to master planning than most other alternatives.				The inclusion of the area between OB Riley Road and Gopher Gulch reduces the percent of expansion that would be subject to master planning relative to some other alternatives.		A significant expansion in the Northeast Edge, which has smaller parcels, makes this the lowest amount of expansion that would be subject to master planning, despite the inclusion of the large ownership in Gopher Gulch.		The inclusion of Darnall Estates with the DSL Property and the inclusion of the area between OB Riley Road and Gopher Gulch reduce the percent of expansion that would be subject to master planning, despite the inclusion of the large ownership in Gopher Gulch.						
		Relatively large developments in DSL West area and The Thumb make this scenario mostly (over 75%) large property owners.				A significant expansion in the Northeast Edge, which has smaller parcels, makes this the lowest amount of expansion that would be subject to master planning, despite the inclusion of the large ownership in Gopher Gulch.		The inclusion of Darnall Estates with the DSL Property and the inclusion of the area between OB Riley Road and Gopher Gulch reduce the percent of expansion that would be subject to master planning, despite the inclusion of the large ownership in Gopher Gulch.		A significant expansion in the West area and smaller expansions on other large sites make this scenario mostly (over 75%) large property owners.						

For more information about this performance measure, see accompanying technical memorandum from Angelo Planning Group

Factor 1: Efficient Accommodation of Identified Land Needs

Community Outcome

Efficient, Timely Growth

Author: Andrew Parish

APG

Date: 10/1/2015

Performance Measure 1

Urbanized Acres

Brief Description of Evaluation: Current urbanized land was based on plan designations inside the existing UGB (all of the existing UGB is considered "urbanized" for the purposes of this performance measure). Future urbanized land is the total acres of expansion, categorized based on the development type.

Data Sources: Envision Tomorrow Scenario Builder GIS inputs.

Interpretation and Key: The amount of land for civic uses (parks & schools) in each alternative is preliminary - further refinement of school land needs has already occurred with the school district and park land needs may also be refined further. This is provided for information, but does not contribute to the scoring. Minor variations in the amount of employment land are also not especially meaningful, and do not contribute to the scoring. The primary differentiation among the alternatives is the amount of residential land, which varies based on where it is accommodated. The total residential acres for the scenario is the measure that drives the overall score. Alternatives with under 700 acres of residential expansion are rated 'good', those with 700-900 acres are rated 'fair', and those with over 900 acres are rated 'poor'.

Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3		Not appropriate to rank
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
Total Future UGB (Including Current UGB)	31615	Total acres	31749	Total acres	31828	Total acres	32764	Total acres	31938	Total acres	31608	Total acres	
	8773	Res Acres	8803	Res Acres	8835	Res Acres	9687	Res Acres	8926	Res Acres	8761	Res Acres	
	16837	Emp Acres	16799	Emp Acres	16834	Emp Acres	16874	Emp Acres	16849	Emp Acres	16884	Emp Acres	
	6005	Civic Acres	6147	Civic Acres	6159	Civic Acres	6203	Civic Acres	6163	Civic Acres	5963	Civic Acres	
	1681	Total acres	1815	Total acres	1894	Total acres	2830	Total acres	2004	Total acres	1674	Total acres	
Total Expansion Area (excluding current UGB)	676	Res Acres	706	Res Acres	738	Res Acres	1590	Res Acres	829	Res Acres	664	Res Acres	
	878	Emp Acres	840	Emp Acres	875	Emp Acres	915	Emp Acres	890	Emp Acres	925	Emp Acres	
	127	Civic Acres	269	Civic Acres	281	Civic Acres	325	Civic Acres	285	Civic Acres	85	Civic Acres	
Subareas	193	Total acres	187	Total acres	231	Total acres	200	Total acres	250	Total acres	250	Total acres	
	0	Res Acres	78	Res Acres	0	Res Acres	0	Res Acres	0	Res Acres	0	Res Acres	
	193	Emp Acres	92	Emp Acres	231	Emp Acres	200	Emp Acres	250	Emp Acres	250	Emp Acres	
	0	Civic Acres	17	Civic Acres	0	Civic Acres	0	Civic Acres	0	Civic Acres	0	Civic Acres	
	455	Total acres	131	Total acres	161	Total acres	1435	Total acres	45	Total acres	45	Total acres	
NE Edge	383	Res Acres	102	Res Acres	117	Res Acres	1150	Res Acres	10	Res Acres	10	Res Acres	
	58	Emp Acres	29	Emp Acres	30	Emp Acres	70	Emp Acres	35	Emp Acres	35	Emp Acres	
	14	Civic Acres	0	Civic Acres	14	Civic Acres	215	Civic Acres	0	Civic Acres	0	Civic Acres	
	222	Total acres	363	Total acres	192	Total acres	130	Total acres	210	Total acres	125	Total acres	
	39	Res Acres	142	Res Acres	39	Res Acres	0	Res Acres	115	Res Acres	60	Res Acres	
DSL Property	128	Emp Acres	115	Emp Acres	65	Emp Acres	130	Emp Acres	95	Emp Acres	65	Emp Acres	
	55	Civic Acres	106	Civic Acres	88	Civic Acres	0	Civic Acres	0	Civic Acres	0	Civic Acres	
	202	Total acres	431	Total acres	178	Total acres	150	Total acres	184	Total acres	184	Total acres	
	48	Res Acres	89	Res Acres	3	Res Acres	4	Res Acres	4	Res Acres	4	Res Acres	
	114	Emp Acres	278	Emp Acres	135	Emp Acres	110	Emp Acres	140	Emp Acres	140	Emp Acres	
The "Elbow"	40	Civic Acres	64	Civic Acres	40	Civic Acres	40	Civic Acres	40	Civic Acres	40	Civic Acres	
	350	Total acres	395	Total acres	176	Total acres	240	Total acres	225	Total acres	220	Total acres	
	106	Res Acres	180	Res Acres	0	Res Acres	0	Res Acres	50	Res Acres	0	Res Acres	
	244	Emp Acres	172	Emp Acres	176	Emp Acres	240	Emp Acres	175	Emp Acres	220	Emp Acres	
	0	Civic Acres	43	Civic Acres	0	Civic Acres	0	Civic Acres	0	Civic Acres	0	Civic Acres	
The "Thumb"	132	Total acres	173	Total acres	329	Total acres	0	Total acres	0	Total acres	670	Total acres	
	100	Res Acres	115	Res Acres	313	Res Acres	0	Res Acres	0	Res Acres	580	Res Acres	
	14	Emp Acres	41	Emp Acres	14	Emp Acres	0	Emp Acres	45	Emp Acres	45	Emp Acres	
	18	Civic Acres	17	Civic Acres	2	Civic Acres	0	Civic Acres	0	Civic Acres	45	Civic Acres	
	0	Total acres	0	Total acres	176	Total acres	545	Total acres	0	Total acres	0	Total acres	
West Area	0	Res Acres	0	Res Acres	119	Res Acres	440	Res Acres	0	Res Acres	0	Res Acres	
	0	Emp Acres	0	Emp Acres	28	Emp Acres	35	Emp Acres	0	Emp Acres	0	Emp Acres	
	0	Civic Acres	0	Civic Acres	29	Civic Acres	70	Civic Acres	0	Civic Acres	0	Civic Acres	
	127	Total acres	135	Total acres	451	Total acres	130	Total acres	1090	Total acres	180	Total acres	
	0	Res Acres	0	Res Acres	147	Res Acres	0	Res Acres	650	Res Acres	10	Res Acres	
Shevlin Area	127	Emp Acres	113	Emp Acres	196	Emp Acres	130	Emp Acres	195	Emp Acres	170	Emp Acres	
	0	Civic Acres	22	Civic Acres	108	Civic Acres	0	Civic Acres	245	Civic Acres	0	Civic Acres	
	29934	Total acres	29934	Total acres	29934	Total acres	29934	Total acres	29934	Total acres	29934	Total acres	
	8097	Res Acres	8097	Res Acres	8097	Res Acres	8097	Res Acres	8097	Res Acres	8097	Res Acres	
	15959	Emp Acres	15959	Emp Acres	15959	Emp Acres	15959	Emp Acres	15959	Emp Acres	15959	Emp Acres	
OB Riley / Gopher Gulch Area	5878	Civic Acres	5878	Civic Acres	5878	Civic Acres	5878	Civic Acres	5878	Civic Acres	5878	Civic Acres	
Existing UGB (if applicable)													
Overall Score	5		4		4		3		4		5		

Despite including some developed portions of the Northeast edge, the inclusion of multifamily housing in parts of that subarea means that this scenario still performs quite well overall.

A focus on large, vacant parcels keeps this scenario fairly efficient.

Less efficient development in the northeast edge and Shevlin area increase the total residential expansion.

Inclusion of the large existing rural subdivision south of Juniper Ridge significantly increases the total residential acres.

This scenario fills up the OB Riley / Gopher Gulch Area, which pushes the acreage (and total housing units) up beyond what's truly needed; it is not penalized for that.

Focusing residential development in the West Area allows for efficient residential development.

For more information about this performance measure, see accompanying technical memorandum from Angelo Planning Group.

Factor 1: Efficient Accommodation of Identified Land Needs**Community Outcome B**
Efficient, Timely Growth**Author:** Andrew Parish**APG****Date:** 9/9/2015**Performance Measure 2**
Gross Residential Density*Brief Description of Evaluation:* The gross density (inclusive of roads, or other land reductions) of housing units on residential land only.*Data Sources* Envision Tomorrow Scenario Builder output. Based on building type, and unit size.*Interpretation and Key* Gross housing density is the number of residential units divided by the residential acreage for each evaluation geography. This does not include residential units in commercial areas (e.g. an apartment above a storefront). Gross densities equal to or greater than the overall gross density of new housing inside the UGB were rated "good"; densities below 3.0 units per gross acre were rated "Poor".

Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank			
	4.7	HU / Gross Residential Acre	4.7	HU / Gross Residential Acre	4.7	HU / Gross Residential Acre	3.8	HU / Gross Residential Acre	4.7	HU / Gross Residential Acre	4.8	HU / Gross Residential Acre
Total Expansion Area (excluding current UGB)	6.0	HU / Gross Residential Acre	5.8	HU / Gross Residential Acre	5.5	HU / Gross Residential Acre	2.6	HU / Gross Residential Acre	5.7	HU / Gross Residential Acre	6.2	HU / Gross Residential Acre
Subareas												
North Triangle	N/A	HU / Gross Resident	7.3	HU / Gross Residential Acre	N/A	HU / Gross Resident	N/A	HU / Gross Resident	N/A	HU / Gross Resident	N/A	HU / Gross Resident
NE Edge	4.4	HU / Gross Residential Acre	3.7	HU / Gross Residential Acre	3.9	HU / Gross Residential Acre	2.2	HU / Gross Residential Acre	8.3	HU / Gross Residential Acre	8.3	HU / Gross Residential Acre
DSL Property	11.7	HU / Gross Residential Acre	6.4	HU / Gross Residential Acre	10.9	HU / Gross Residential Acre	N/A	HU / Gross Residential Acre	4.8	HU / Gross Residential Acre	13.3	HU / Gross Residential Acre
The "Elbow"	10.6	HU / Gross Residential Acre	9.2	HU / Gross Residential Acre	9.7	HU / Gross Residential Acre	N/A	HU / Gross Resident	7.3	HU / Gross Resident	7.3	HU / Gross Residential Acre
The "Thumb"	4.6	HU / Gross Residential Acre	3.6	HU / Gross Residential Acre	N/A	HU / Gross Resident	N/A	HU / Gross Resident	3.2	HU / Gross Residential Acre	N/A	HU / Gross Residential Acre
West Area	8.9	HU / Gross Residential Acre	6.7	HU / Gross Residential Acre	5.4	HU / Gross Residential Acre	N/A	HU / Gross Resident	N/A	HU / Gross Resident	5.1	HU / Gross Residential Acre
Shevlin Area	N/A	HU / Gross Residential Acre	N/A	HU / Gross Residential Acre	2.3	HU / Gross Residential Acre	3.4	HU / Gross Residential Acre	N/A	HU / Gross Residential Acre	N/A	HU / Gross Residential Acre
OB Riley / Gopher Gulch Area	N/A	HU / Gross Resident	N/A	HU / Gross Resident	7.6	HU / Gross Residential Acre	N/A	HU / Gross Resident	5.9	HU / Gross Residential Acre	19.0	HU / Gross Residential Acre
Existing UGB (if applicable)	4.5	HU / Gross Resident	4.5	HU / Gross Resident	4.5	HU / Gross Residential Acre	4.5	HU / Gross Residential Acre	4.5	HU / Gross Resident	4.5	HU / Gross Resident

Overall Score	5	5	3	1	4	5
	5	5	3	1	4	5
	All expansion areas have high residential density, and the overall average density is among the highest.	While the northeast edge is somewhat less efficient than other areas, overall this alternative has the highest net residential density for expansion areas.	The Shevlin Area is somewhat less efficient than other areas in this scenario, but overall net residential density for expansion areas is still good.	Due to the inclusion of the large residential subdivision south of Juniper Ridge, which has limited redevelopment capacity, the gross residential density of this SAAM is low.	The OB Riley/Gopher Gulch area scores well in this SAAM, and the overall net housing density is good. The small piece near the Thumb property is a low density, but its size is small.	The West Area scores fairly well in this SAAM, and the overall net housing density is good. There is a small piece of exclusively multifamily designation in the OB Riley Area, which is the cause of its high density.

For more information about this performance measure, see accompanying technical memorandum from Angelo Planning Group.

Factor 1: Efficient Accommodation of Identified Land Needs**Author:**

Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Community Outcome B
Efficient, Timely Growth**Date:** 9/10/2015**Net Density for New Jobs in 2028****Performance Measure 3**

The net density (not inclusive of roads, or other land reductions) of new jobs on employment land only.

Brief Description of Evaluation:**Data Sources**

Envision Tomorrow Scenario Builder output. Based on building type, and employees per sqft.

Net density for new employment areas is higher for all new employment areas than for existing employment areas in Bend, indicating that all alternatives have significantly improved employment land use efficiency. Net employment densities rate as "Good" in all subareas and for all scenarios.

Interpretation and Key

Evaluation Geography		"Good"		"Fail"		"Poor"		No Data		Not appropriate to rank		
Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3		
Value		Units		Value		Units		Value		Units		
Total Future UGB (Including Current UGB)	22	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre
Total Expansion Area (excluding current UGB)	19	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre
Subareas												
North Triangle	18	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre
NE Edge	20	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre
DSL Property	21	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre
The "Elbow"	22	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	22	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre
The "Thumb"	18	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	17	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	19	Jobs per Net Employment Acre
West Area	25	Jobs per Net Employment Acre	26	Jobs per Net Employment Acre	25	Jobs per Net Employment Acre	N/A	Jobs per Net Employment Acre	N/A	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre
Shewlin Area	N/A	Jobs per Net Employment Acre	N/A	Jobs per Net Employment Acre	25	Jobs per Net Employment Acre	25	Jobs per Net Employment Acre	N/A	Jobs per Net Employment Acre	N/A	Jobs per Net Employment Acre
OB Riley / Gopher Gulch Area	18	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre	18	Jobs per Net Employment Acre	21	Jobs per Net Employment Acre	20	Jobs per Net Employment Acre
Existing UGB (if applicable)	23	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre	23	Jobs per Net Employment Acre
Overall Score	5	5	5	5	5	5	5	5	5	5	5	5
	Net employment densities rate as "Good" in all subareas and for all scenarios.		Net employment densities rate as "Good" in all subareas and for all scenarios.		Net employment densities rate as "Good" in all subareas and for all scenarios.		Net employment densities rate as "Good" in all subareas and for all scenarios.		Net employment densities rate as "Good" in all subareas and for all scenarios.		Net employment densities rate as "Good" in all subareas and for all scenarios.	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 1: Efficient Accommodation of Identified Land Needs**Community Outcome B**
Efficient, Timely Growth

Author: CJ Dorse

APG

Date: 8/20/2015

Performance Measure 4
Percent of urbanized acres on parcels under 20 acres and contiguous to the existing UGB

Percent of acres in each geography that have a lot size under 20 acres and are contiguous to the existing UGB. Note: Sewer capacity is an issue in all areas. 50' buffer was used for adjacency to UGB.

Data Sources

Deschutes County Assessor's Data, City of Bend data.

Smaller parcels that are adjacent to the UGB may face fewer barriers to development within the first few years after the UGB expansion is adopted. For this performance measure, more land that is on parcels under 20 acres and adjacent to the UGB is considered better. (Note: this performance measure captures roughly the inverse of measure 1.A.5 - potential for master planning. Master planning provides opportunities for complete, well-designed communities but also takes more time for planning and permitting.) At a subarea level, subareas with less than 25% of acreage in this category rated as "Poor", those with 25-50% rated as "Fair", and those with more than 50% rated as "Good". Overall ratings are relative to the other alternatives.

Interpretation and Key

"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank
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Evaluation Geography (Including Future UGB)	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Expansion Area (excluding current UGB)	18.9%	Acres/Total Scenario Acres	14.2%	Acres/Total Scenario Acres	13.4%	Acres/Total Scenario Acres	11.3%	Acres/Total Scenario Acres	10.4%	Acres/Total Scenario Acres	9.5%	Acres/Total Scenario Acres
Subareas												
North Triangle	14%	Acres/Total Subarea Acres Included in UGB	14%	Acres/Total Subarea Acres Included in UGB	14%	Acres/Total Subarea Acres Included in UGB	11%	Acres/Total Subarea Acres Included in UGB	13%	Acres/Total Subarea Acres Included in UGB	10%	Acres/Total Subarea Acres Included in UGB
NE Edge	42%	Acres/Total Subarea Acres Included in UGB	63%	Acres/Total Subarea Acres Included in UGB	57%	Acres/Total Subarea Acres Included in UGB	93%	Acres/Total Subarea Acres Included in UGB	2%	Acres/Total Subarea Acres Included in UGB	76%	Acres/Total Subarea Acres Included in UGB
DSL Property	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	7%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB
The "Elbow"	31%	Acres/Total Subarea Acres Included in UGB	19%	Acres/Total Subarea Acres Included in UGB	11%	Acres/Total Subarea Acres Included in UGB	25%	Acres/Total Subarea Acres Included in UGB	32%	Acres/Total Subarea Acres Included in UGB	26%	Acres/Total Subarea Acres Included in UGB
The "Thumb"	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	1%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB
West Area	2%	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	5%	Acres/Total Subarea Acres Included in UGB	N/A	Acres/Total Subarea Acres Included in UGB	N/A	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB
Shevlin Area	N/A	Acres/Total Subarea Acres Included in UGB	N/A	Acres/Total Subarea Acres Included in UGB	0%	Acres/Total Subarea Acres Included in UGB	21%	Acres/Total Subarea Acres Included in UGB	N/A	Acres/Total Subarea Acres Included in UGB	N/A	Acres/Total Subarea Acres Included in UGB
OB Riley / Gopher Gulch Area	27%	Acres/Total Subarea Acres Included in UGB	26%	Acres/Total Subarea Acres Included in UGB	53%	Acres/Total Subarea Acres Included in UGB	8%	Acres/Total Subarea Acres Included in UGB	56%	Acres/Total Subarea Acres Included in UGB	3%	Acres/Total Subarea Acres Included in UGB
Existing UGB (if applicable)	N/A		N/A		N/A		N/A		N/A		N/A	

Overall Score	5	3	3	3	2	2	1
	●	○	○	○	●	●	●
	Scenario 1.2 includes several parcels in the NE, North, OB Riley, and Elbow areas that are adjacent to the UGB and under 20 acres. Scenario 1.2 has the highest percentage of acreage that falls into this category, due to the inclusion of the highly parcelized NE Edge area	Scenario 2.1 performs slightly worse than Scenario 1.2 due to inclusion of significant acreage on large parcels in DSL, Elbow, and Thumb, and West.	Scenario 3.1 performs roughly the same as scenario 2.1, as it includes large parcels in the West, Shevlin area, and areas of OB Riley / Gopher Gulch that are nonadjacent to the UGB	SAAMs generally perform worse than the first three scenarios due to inclusion of large parcels and large expansions away from the UGB	SAAMs generally perform worse than the first three scenarios due to inclusion of large parcels and large expansions away from the UGB	SAAMs generally perform worse than the first three scenarios due to inclusion of large parcels and large expansions away from the UGB	SAAMs generally perform worse than the first three scenarios due to inclusion of large parcels and large expansions away from the UGB

For more information about this performance measure, see accompanying technical memorandum from APG

Growth on vacant versus developed land																											
Performance Measure 5		Percent of urbanized acres on land that is vacant versus areas that are already developed																									
Brief Description of Evaluation:		Envision Tomorrow Scenario builder output; Buildable Lands Inventory and developed area outside the UGB by Fregonese Associates																									
Data Sources		Development on vacant land may be more likely to occur in a shorter amount of time because there are no existing land uses generating income or providing value for the property owner. For the purposes of this performance measure, more of the expansion on vacant land rather than developed land is considered positive. (Note that data is not available at the subarea level at this time.)																									
Interpretation and Key		"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank																	
		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3															
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units														
		Value		Units		Value		Units		Value		Units															
Evaluation Geography		Total Future UGB (Including Current UGB)		Total Expansion Area (excluding current UGB)		Subareas		North Triangle		NE Edge		DSL Property		The "Elbow"		The "Thumb"		West Area		Shevlin Area		OB Riley / Gopher Gulch Area		Existing UGB (if applicable)		Overall Score	
		95%	Vacant	92%	Vacant	93%	Vacant	81%	Vacant	88%	Vacant																
		5%	Developed	8%	Developed	7%	Developed	19%	Developed	12%	Developed																

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Author: CSM DKS Associates

Date: 9/9/2015

Balanced Transportation System

Performance Measure 1		Vehicle Miles Traveled per Capita									
<i>Brief Description of Evaluation:</i>		Calculated from output from the travel demand model run by TPAU for trips internal to the City (both ends of the trip are within the proposed UGB boundary).									
<i>Data Sources</i>		ODOT/MPO 2028 Regional Travel Demand Model, Daily Trips									
<i>Interpretation and Key</i>		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank					
		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2	
Evaluation Geography		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	Daily Vehicle 10.11 Miles Traveled per capita			Daily Vehicle 9.92 Miles Traveled per capita		Daily Vehicle 9.99 Miles Traveled per capita		Daily Vehicle 10.13 Miles Traveled per capita		Daily Vehicle 10.11 Miles Traveled per capita	
	Percent Increase relative to 2010	4.9%		Percent Increase relative to 2010	2.9%	Percent Increase relative to 2010	3.6%	Percent Increase relative to 2010	5.1%	Percent Increase relative to 2010	4.7%
	Percent increase relative to 2003	10.1%		Percent increase relative to 2003	8.1%	Percent increase relative to 2003	8.8%	Percent increase relative to 2003	10.3%	Percent increase relative to 2003	9.9%
Total Expansion Area (excluding current UGB)											
Subareas											
North Triangle NE Edge DSL Property The "Elbow" The "Thumb" West Area Shevlin Area OB Riley / Gopher Gulch Area Existing UGB (if applicable)											
Overall Score		2	See Measure 2.A.2 for more detailed findings.	3	See Measure 2.A.2 for more detailed findings.	3	See Measure 2.A.2 for more detailed findings.	2	See Measure 2.A.2 for more detailed findings.	2	See Measure 2.A.2 for more detailed findings.

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

* The project team is working with DLCD to determine whether Bend may use the base 2010 model for the VMT analysis, given that the Remand specifies 2003 as the baseline year, but the 2010 model is a better reflection of 2008 and includes other important updates and improvements. The distinction is important because VMT increased by nearly 5% between 2003 and 2010 (VMT per capita in 2003 was estimated at 9.18, versus 9.64 in 2010). For purposes of analysis, the project team is evaluating both 2003 and 2010 as baseline years.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Community Outcome A

Balanced Transportation System

Author: CSM

DKS Associates

Date: 9/9/2015

Performance Measure 2

Average Trip Length

Brief Description of Evaluation: Calculated from output from the travel demand model run by TPAU for trips internal to the City (both ends of the trip are within the proposed UGB boundary, calculated per round-trip).

Data Sources

ODOT/MPO 2028 Regional Travel Demand Model, Daily Trips

Interpretation and Key: Average trip length results (a proxy for VMT/Capita for subareas) are expected to be higher in fringe growth areas of the City. Areas performing more closely to the existing UGB (i.e., average trip length below 9.0 miles), are colored as good.

Key	Not appropriate to rank				Scenario 2.1			Scenario 3.1			SAAM-1		SAAM-2		SAAM-3	
	"Good"	"Fair"	"Poor"	No Data	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Evaluation Geography	Scenario 1.2			Scenario 2.1			Scenario 3.1			SAAM-1		SAAM-2		SAAM-3		
Total Future UGB (Including Current UGB)	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
Total Expansion Area (excluding current UGB)	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
Subareas																
North Triangle	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
NE Edge	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
DSL Property	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
The "Elbow"	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
The "Thumb"	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
West Area	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
Shevlin Area	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
OB Riley / Gopher Gulch Area	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
Existing UGB (if applicable)	Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length			Average Daily Round-Trip Length		Average Daily Round-Trip Length		Average Daily Round-Trip Length		
Overall Score																

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

Factor 2: Orderly and Economic Growth

Community Outcome A
Balanced Transportation System

Author: Fregonese Associates

Date: 10/1/2015

Performance Measure 3	Household Vehicle Miles Traveled per Capita (7D Model)												
Brief Description of Evaluation:	The average number of vehicle miles travel (VMT) per person, per day. Output from 7D transportation model within Envision Tomorrow.												
Data Sources													
Interpretation and Key	The color coding was applied in two ways. At the Total Future UGB and the Expansion Area level, the colors are applied only across the same geography and help distinguish differences between scenarios at the same geography. The color coding does not compare the Total Future UGB against the Expansion Area, the value of the indicator itself does provide some insights into those differences, however. The subarea outputs, on the other hand, were coded relative to all subareas in all scenarios to highlight differences across subareas within one scenario but also across scenarios. In this way, we can identify which the best and worst performing subareas across all scenarios. Where the subarea cells are greyed out, the amount of housing within that subarea is not significant (less than 100 new units) and thus the result is not significant.												
		Good"	Fair"	Poor"	No Data	Not appropriate to rank							
		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
	Evaluation Geography												
	Total Future UGB (Including Current UGB)	9.40	VMT/capita	9.32	VMT/capita	9.42	VMT/capita	9.62	VMT/capita	9.62	VMT/capita	9.57	VMT/capita
	Total Expansion Area (excluding current UGB)	12.66	VMT/capita	12.56	VMT/capita	14.24	VMT/capita	14.57	VMT/capita	13.82	VMT/capita	13.79	VMT/capita
	Subareas												
	North Triangle	12.09	VMT/capita	12.25	VMT/capita	11.74	VMT/capita	12.11	VMT/capita	11.96	VMT/capita	12.03	VMT/capita
	NE Edge	12.43	VMT/capita	10.88	VMT/capita	10.97	VMT/capita	13.51	VMT/capita	11.48	VMT/capita	11.04	VMT/capita
DSL Property	9.17	VMT/capita	10.76	VMT/capita	12.98	VMT/capita	12.59	VMT/capita	9.52	VMT/capita	9.63	VMT/capita	
The "Elbow"	13.53	VMT/capita	13.67	VMT/capita	13.61	VMT/capita	13.21	VMT/capita	13.60	VMT/capita	13.60	VMT/capita	
The "Thumb"	11.16	VMT/capita	12.34	VMT/capita	12.37	VMT/capita	16.53	VMT/capita	16.44	VMT/capita	16.48	VMT/capita	
West Area	15.26	VMT/capita	14.93	VMT/capita	16.13	VMT/capita	11.98	VMT/capita	11.93	VMT/capita	15.22	VMT/capita	
Shevlin Area	15.46	VMT/capita	14.07	VMT/capita	14.97	VMT/capita	17.37	VMT/capita	18.75	VMT/capita	19.11	VMT/capita	
OB Riley / Gopher Gulch Area	11.83	VMT/capita	11.83	VMT/capita	14.08	VMT/capita	11.84	VMT/capita	14.37	VMT/capita	12.91	VMT/capita	
Existing UGB (if applicable)	8.13	VMT/capita	8.11	VMT/capita	8.12	VMT/capita	8.16	VMT/capita	8.20	VMT/capita	8.20	VMT/capita	
Overall Score	4	5	3	1	2	2	2	2	2	2	2	2	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

DKS Associates

CSM

Author:

9/9/2015

Date:

Balanced Transportation System

Performance Measure 4
Congestion: Miles of roadway that exceed mobility standards & relative contribution to congested roadways

Brief Description of Evaluation: The global measure indicates the overall congestion impact of each scenario. The subarea measures indicate the percentage of travel generated by each subarea (in VMT) contributes to congestion on over-capacity facilities

Data Sources ODOT/MPO 2028 Regional Travel Demand Model, Weekday Peak Hour Trip Assignments

Good scores represent less impact on congested roadway areas. Impact to highway corridors (US 97 or US 20) that do not have planned improvements are more significant than congested City corridors that can be mitigated if needed. For the overall proposed UGB Boundary, the values are not VMT and just total miles of congested roadways.

Interpretation and Key

"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank
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Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	14.12	Peak Hour miles of roadway with volume > capacity	14.30	Peak Hour miles of roadway with volume > capacity	14.66	Peak Hour miles of roadway with volume > capacity	13.43	Peak Hour miles of roadway with volume > capacity	14.24	Peak Hour miles of roadway with volume > capacity	14.12	Peak Hour miles of roadway with volume > capacity
Total Expansion Area (excluding current UGB)	11.5%	% of Total Peak Hour VMT on roadway with volume>capacity	11.4%	% of Total Peak Hour VMT on roadway with volume>capacity	18.3%	% of Total Peak Hour VMT on roadway with volume>capacity	11.3%	% of Total Peak Hour VMT on roadway with volume>capacity	14.8%	% of Total Peak Hour VMT on roadway with volume>capacity	13.2%	% of Total Peak Hour VMT on roadway with volume>capacity

Subareas

North Triangle	13.2%	% of Total Peak Hour VMT on roadway with volume>capacity	12.7%	% of Total Peak Hour VMT on roadway with volume>capacity	17.1%	% of Total Peak Hour VMT on roadway with volume>capacity	12.1%	% of Total Peak Hour VMT on roadway with volume>capacity	17.0%	% of Total Peak Hour VMT on roadway with volume>capacity	15.1%	% of Total Peak Hour VMT on roadway with volume>capacity
NE Edge	10.2%	% of Total Peak Hour VMT on roadway with volume>capacity	9.8%	% of Total Peak Hour VMT on roadway with volume>capacity	10.5%	% of Total Peak Hour VMT on roadway with volume>capacity	11.2%	% of Total Peak Hour VMT on roadway with volume>capacity	9.0%	% of Total Peak Hour VMT on roadway with volume>capacity	9.1%	% of Total Peak Hour VMT on roadway with volume>capacity
DSL Property	14.9%	% of Total Peak Hour VMT on roadway with volume>capacity	14.9%	% of Total Peak Hour VMT on roadway with volume>capacity	18.3%	% of Total Peak Hour VMT on roadway with volume>capacity	17.5%	% of Total Peak Hour VMT on roadway with volume>capacity	16.4%	% of Total Peak Hour VMT on roadway with volume>capacity	18.4%	% of Total Peak Hour VMT on roadway with volume>capacity
The "Elbow"	13.7%	% of Total Peak Hour VMT on roadway with volume>capacity	15.6%	% of Total Peak Hour VMT on roadway with volume>capacity	15.5%	% of Total Peak Hour VMT on roadway with volume>capacity	14.8%	% of Total Peak Hour VMT on roadway with volume>capacity	16.6%	% of Total Peak Hour VMT on roadway with volume>capacity	15.0%	% of Total Peak Hour VMT on roadway with volume>capacity
The "Thumb"	11.0%	% of Total Peak Hour VMT on roadway with volume>capacity	8.7%	% of Total Peak Hour VMT on roadway with volume>capacity	9.1%	% of Total Peak Hour VMT on roadway with volume>capacity	12.0%	% of Total Peak Hour VMT on roadway with volume>capacity	8.0%	% of Total Peak Hour VMT on roadway with volume>capacity	8.7%	% of Total Peak Hour VMT on roadway with volume>capacity
West Area	4.8%	% of Total Peak Hour VMT on roadway with volume>capacity	4.7%	% of Total Peak Hour VMT on roadway with volume>capacity	7.6%	% of Total Peak Hour VMT on roadway with volume>capacity	N/A	% of Total Peak Hour VMT on roadway with volume>capacity	N/A	% of Total Peak Hour VMT on roadway with volume>capacity	9.8%	% of Total Peak Hour VMT on roadway with volume>capacity
Shevlin Area	N/A	% of Total Peak Hour VMT on roadway with volume>capacity	N/A	% of Total Peak Hour VMT on roadway with volume>capacity	4.6%	% of Total Peak Hour VMT on roadway with volume>capacity	2.6%	% of Total Peak Hour VMT on roadway with volume>capacity	N/A	% of Total Peak Hour VMT on roadway with volume>capacity	N/A	% of Total Peak Hour VMT on roadway with volume>capacity
OB Riley / Gopher Gulch Area	12.6%	% of Total Peak Hour VMT on roadway with volume>capacity	11.6%	% of Total Peak Hour VMT on roadway with volume>capacity	15.3%	% of Total Peak Hour VMT on roadway with volume>capacity	11.2%	% of Total Peak Hour VMT on roadway with volume>capacity	16.1%	% of Total Peak Hour VMT on roadway with volume>capacity	16.9%	% of Total Peak Hour VMT on roadway with volume>capacity
Existing UGB (if applicable)	12.7%	% of Total Peak Hour VMT on roadway with volume>capacity	13.2%	% of Total Peak Hour VMT on roadway with volume>capacity	12.6%	% of Total Peak Hour VMT on roadway with volume>capacity	12.3%	% of Total Peak Hour VMT on roadway with volume>capacity	11.7%	% of Total Peak Hour VMT on roadway with volume>capacity	12.2%	% of Total Peak Hour VMT on roadway with volume>capacity

Overall Score	4	3	2	5	3	4
			This scenario has the most growth in the North Triangle and OB Riley/Gopher Gulch, causing significant impact on state highways.	Less growth in the North Triangle and OB Riley Area, combined with more growth in the Shevlin Area, reduces overall corridor congestion.		

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Author: CSM DKS Associates

Community Outcome A

Date: 9/9/2015

Balanced Transportation System

Performance Measure 5		Walk/Bike Safety and Connectivity					
Brief Description of Evaluation:		Qualitative evaluation of pedestrian/bicycle that included: connectivity to adjacent areas, connectivity within the subarea, and safety barriers within the subarea.					
Data Sources		Existing and planned multimodal roadway network and trail network based on the Bend MPO MTP Update compared to GoogleEarth imagery and City facility plans.					
Interpretation and Key		Good areas are locations with good connectivity to the adjacent transportation infrastructure and few barriers within the site. Fair areas have either worse connectivity or some site barriers. No internal roadways are planned to be larger than 3-lanes, so significant safety barriers within the sites were not a key differentiator.					
		Good"	Fail"	Poor"	No Data	Not appropriate to rank	
		Scenario 1.2 Qualitative Evaluation		Scenario 2.1 Qualitative Evaluation		Scenario 3.1 Qualitative Evaluation	
Evaluation Geography		SAAM-1 Qualitative Evaluation		SAAM-2 Qualitative Evaluation		SAAM-3 Qualitative Evaluation	
Total Future UGB (Including Current UGB)							
Total Expansion Area (excluding current UGB)							
Subareas							
North Triangle		No trails connecting to the area, but decent grid system for roadways.	No trails connecting to the area, but decent grid system for roadways.	No trails connecting to the area, but decent grid system for roadways.	No trails connecting to the area, but decent grid system for roadways.	No trails connecting to the area, but decent grid system for roadways.	No trails connecting to the area, but decent grid system for roadways.
NE Edge		Trail connections to a portion of the area.	Trail connections to the area.	Trail connections to a portion of the area.	Trail connections to the area.	Trail connections to the area.	Trail connections to the area.
DSL Property		Good grid and trail connections.	Good grid and trail connections.	Good grid and trail connections.	Good grid and trail connections.	Good grid and trail connections.	Good grid and trail connections.
The "Elbow"		Partial collector grid	Full collector grid in the subarea with extension of Murphy Road.	Partial collector grid	Partial collector grid	Partial collector grid	Partial collector grid
The "Thumb"		Full build allows connection south to Knott	Partial collector grid	Partial collector grid	Partial collector grid	Partial collector grid	Partial collector grid
West Area		Good collector grid, limited trail system.	Good collector grid, limited trail system.	Good collector grid, limited trail system.	N/A	N/A	Good collector grid, limited trail system.
Shevlin Area		N/A	N/A	Limited connections	Larger growth area creates better connections	N/A	N/A
OB Riley / Gopher Gulch Area		Connections via OB Riley	Connections via OB Riley	Growth further west does not have connectivity to surrounding networks	Connections via OB Riley	Growth further west does not have connectivity to surrounding networks	Connections via OB Riley
Existing UGB (if applicable)		N/A					
Overall Score		4	5	3	4	3	4

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services**Community Outcome A****Balanced Transportation System**

Author: DKS Associates

CSM

Date: 9/9/2015

System connectivity & progression of system hierarchy						
Ability to provide a well-spaced base roadway network of arterials and collectors						
Base roadway network for subareas						
Performance Measure 6	Good areas have the ability to provide access to development areas via a hierarchy of local, collector, and arterial roadways. Poor areas would likely provide access directly to higher class roadways. Overall results are for variations of sub-areas, not combined scenario results.					
Base roadway network for subareas						
Good areas have the ability to provide access to development areas via a hierarchy of local, collector, and arterial roadways. Poor areas would likely provide access directly to higher class roadways. Overall results are for variations of sub-areas, not combined scenario results.						
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For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

Factor 2: Orderly and Economic Growth Community Outcome													Analysis by Fregonese Associates; interpretation by Angelo Planning Group			
Balanced Transportation System													Author:		Date:	
Mode Split (% by Mode)																
Performance Measure 7																
Brief Description of Evaluation:																
Data Sources																
Interpretation and Key																
Evaluation	Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3				
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units			
Total Future UGB (Including Current UGB)	"Good"	90.9%	% Auto	90.9%	% Auto	90.9%	% Auto	90.9%	% Auto	91.0%	% Auto	90.9%	% Auto			
		6.9%	% Walk	6.9%	% Walk	6.9%	% Walk	6.8%	% Walk	6.7%	% Walk	6.9%	% Walk			
		0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike			
		1.6%	% Transit	1.6%	% Transit	1.6%	% Transit	1.6%	% Transit	1.6%	% Transit	1.6%	% Transit			
		95.1%	% Auto	95.3%	% Auto	95.3%	% Auto	95.9%	% Auto	96.4%	% Auto	95.0%	% Auto			
Total Expansion Area (excluding current UGB)		3.5%	% Walk	3.4%	% Walk	3.4%	% Walk	2.9%	% Walk	2.5%	% Walk	3.5%	% Walk			
		0.5%	% Bike	0.5%	% Bike	0.5%	% Bike	0.5%	% Bike	0.4%	% Bike	0.6%	% Bike			
		0.9%	% Transit	0.9%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit	0.9%	% Transit			
		96.4%	% Auto	96.4%	% Auto	96.9%	% Auto	96.3%	% Auto	96.2%	% Auto	96.2%	% Auto			
		2.5%	% Walk	2.6%	% Walk	2.2%	% Walk	2.6%	% Walk	2.6%	% Walk	2.6%	% Walk			
North Triangle		0.3%	% Bike	0.4%	% Bike	0.3%	% Bike	0.3%	% Bike	0.3%	% Bike	0.4%	% Bike			
		0.8%	% Transit	0.7%	% Transit	0.6%	% Transit	0.8%	% Transit	0.8%	% Transit	0.8%	% Transit			
		95.2%	% Auto	95.2%	% Auto	94.7%	% Auto	95.4%	% Auto	95.7%	% Auto	95.4%	% Auto			
		3.5%	% Walk	3.5%	% Walk	3.9%	% Walk	3.3%	% Walk	3.0%	% Walk	3.3%	% Walk			
		0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike			
NE Edge		0.7%	% Transit	0.7%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit	0.7%	% Transit			
		93.5%	% Auto	95.0%	% Auto	93.9%	% Auto	94.4%	% Auto	92.9%	% Auto	93.3%	% Auto			
		4.4%	% Walk	3.5%	% Walk	4.1%	% Walk	3.7%	% Walk	4.6%	% Walk	4.5%	% Walk			
		0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike			
		1.7%	% Transit	1.2%	% Transit	1.6%	% Transit	1.6%	% Transit	2.1%	% Transit	1.7%	% Transit			
DSL Property		95.9%	% Auto	95.6%	% Auto	95.7%	% Auto	96.3%	% Auto	96.2%	% Auto	96.2%	% Auto			
		2.8%	% Walk	3.1%	% Walk	3.0%	% Walk	2.5%	% Walk	2.6%	% Walk	2.6%	% Walk			
		0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike	0.4%	% Bike			
		0.9%	% Transit	0.9%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit	0.7%	% Transit			
		95.4%	% Auto	95.1%	% Auto	95.4%	% Auto	95.9%	% Auto	96.2%	% Auto	96.0%	% Auto			
The "Thumb"		3.2%	% Walk	3.4%	% Walk	3.2%	% Walk	2.8%	% Walk	2.6%	% Walk	2.7%	% Walk			
		0.5%	% Bike	0.5%	% Bike	0.5%	% Bike	0.5%	% Bike	0.5%	% Bike	0.5%	% Bike			
		0.9%	% Transit	0.9%	% Transit	0.9%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit			
		94.1%	% Auto	94.1%	% Auto	94.8%	% Auto	93.7%	% Auto	94.0%	% Auto	94.8%	% Auto			
		4.1%	% Walk	4.3%	% Walk	3.7%	% Walk	4.7%	% Walk	4.4%	% Walk	3.7%	% Walk			
West Area		0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike	0.6%	% Bike			
		1.1%	% Transit	1.1%	% Transit	0.8%	% Transit	1.0%	% Transit	0.9%	% Transit	0.8%	% Transit			
		97.6%	% Auto	97.7%	% Auto	96.7%	% Auto	96.6%	% Auto	97.6%	% Auto	97.6%	% Auto			
		1.6%	% Walk	1.6%	% Walk	2.3%	% Walk	2.3%	% Walk	1.7%	% Walk	1.6%	% Walk			
		0.3%	% Bike	0.3%	% Bike	0.5%	% Bike	0.5%	% Bike	0.3%	% Bike	0.3%	% Bike			
Shelvin Area		0.4%	% Transit	0.4%	% Transit	0.6%	% Transit	0.6%	% Transit	0.4%	% Transit	0.4%	% Transit			
		96.3%	% Auto	96.0%	% Auto	96.2%	% Auto	96.2%	% Auto	96.7%	% Auto	96.3%	% Auto			
		2.8%	% Walk	2.9%	% Walk	2.8%	% Walk	2.8%	% Walk	2.3%	% Walk	2.7%	% Walk			
		0.3%	% Bike	0.3%	% Bike	0.3%	% Bike	0.3%	% Bike	0.4%	% Bike	0.3%	% Bike			
		0.7%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit	0.6%	% Transit	0.8%	% Transit			
OB Riley / Gopher Gulch Area		89.9%	% Auto	89.9%	% Auto	89.8%	% Auto	89.7%	% Auto	89.8%	% Auto	89.8%	% Auto			
		7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk			
		0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike	0.7%	% Bike			
		1.8%	% Transit	1.8%	% Transit	1.8%	% Transit	1.8%	% Transit	1.8%	% Transit	1.8%	% Transit			
		96.2%	% Auto	96.2%	% Auto	96.2%	% Auto	96.2%	% Auto	96.2%	% Auto	96.2%	% Auto			
Existing UGB (If applicable)		2.8%	% Walk	2.8%	% Walk	2.8%	% Walk	2.8%	% Walk	2.3%	% Walk	2.7%	% Walk			
		0.3%	% Bike	0.3%	% Bike	0.3%	% Bike	0.3%	% Bike	0.4%	% Bike	0.3%	% Bike			
		0.7%	% Transit	0.8%	% Transit	0.7%	% Transit	0.7%	% Transit	0.6%	% Transit	0.8%	% Transit			
		89.9%	% Auto	89.9%	% Auto	89.8%	% Auto	89.7%	% Auto	89.8%	% Auto	89.8%	% Auto			
		7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk	7.7%	% Walk			
Overall Score		3	○	3	○	3	○	2	●	2	●	3	○			
		Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.					
		Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.					
		Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.					
		Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.			Most expansion areas have typical suburban transportation behaviours, with a higher proportion vehicle trips, relative to the existing city.					

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Growth

Community Outcome
Balanced Transportation System

Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Date: 9/10/2015

Performance Measure 8		Average Weekly Walk Trips									
Brief Description of Evaluation:		The total number of household based walk trips per week.									
Data Sources		Output from 7D transportation model.									
Interpretation and Key		Over 2 = Good (more similar to existing UGB); 1-2 = Fair; under 1 = Poor. (Subareas with trivial amounts of housing generated by commercial areas are shown in grey.) Overall distinctions are subtle; however, there are meaningful differences at a subarea level.									
		"Good"	"Fair"	"Poor"	No Data / Minimal housing	Not appropriate to rank	Scenario 3.1	SAAM-1	SAAM-2	SAAM-3	
Evaluation	Geography	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	Total Future UGB (Including Current UGB)	1.98	Average weekly walk trips per capita	1.99	Average weekly walk trips per capita	2.00	Average weekly walk trips per capita	1.98	Average weekly walk trips per capita	1.96	Average weekly walk trips per capita
		0.48	Average weekly walk trips per capita	0.47	Average weekly walk trips per capita	0.51	Average weekly walk trips per capita	0.44	Average weekly walk trips per capita	0.39	Average weekly walk trips per capita
Subareas											
North Triangle	NE Edge	0.70	Average weekly walk trips per capita	0.75	Average weekly walk trips per capita	0.60	Average weekly walk trips per capita	0.72	Average weekly walk trips per capita	0.73	Average weekly walk trips per capita
		1.27	Average weekly walk trips per capita	1.85	Average weekly walk trips per capita	1.89	Average weekly walk trips per capita	0.97	Average weekly walk trips per capita	0.83	Average weekly walk trips per capita
		1.24	Average weekly walk trips per capita	0.97	Average weekly walk trips per capita	1.47	Average weekly walk trips per capita	1.20	Average weekly walk trips per capita	1.37	Average weekly walk trips per capita
The "Elbow"	DSL Property	0.76	Average weekly walk trips per capita	0.89	Average weekly walk trips per capita	0.85	Average weekly walk trips per capita	0.68	Average weekly walk trips per capita	0.73	Average weekly walk trips per capita
		1.06	Average weekly walk trips per capita	1.22	Average weekly walk trips per capita	2.81	Average weekly walk trips per capita	0.81	Average weekly walk trips per capita	0.75	Average weekly walk trips per capita
		1.29	Average weekly walk trips per capita	1.31	Average weekly walk trips per capita	1.23	Average weekly walk trips per capita	1.29	Average weekly walk trips per capita	1.22	Average weekly walk trips per capita
West Area	The "Thumb"	5.98	Average weekly walk trips per capita	7.61	Average weekly walk trips per capita	0.82	Average weekly walk trips per capita	0.73	Average weekly walk trips per capita	1.40	Average weekly walk trips per capita
		0.75	Average weekly walk trips per capita	0.80	Average weekly walk trips per capita	0.89	Average weekly walk trips per capita	0.74	Average weekly walk trips per capita	0.68	Average weekly walk trips per capita
		2.23	Average weekly walk trips per capita	2.24	Average weekly walk trips per capita	2.24	Average weekly walk trips per capita	2.26	Average weekly walk trips per capita	2.25	Average weekly walk trips per capita
Existing UGB (if applicable)	OB Riley / Gopher Gulch Area	3		3		3		3		2	
		Overall Score									
		Adding more housing in the NE Edge that is not immediately adjacent to commercial appears to degrade that area's walk trip rates somewhat.		Filling the exception land portion of the DSL property appears to degrade its walk trip rates, presumably because it puts housing further from services. Other subareas perform better than under most other alternatives.		The NE Edge, DSL, Shevlin, and OB Riley / Gopher Gulch all perform somewhat better than under other alternatives.		Focusing growth in the outer portions of the NE Edge and Shevlin area, neither of which has very good walk trip rates, makes SAAM-1 somewhat worse than most of the others.		The Gopher Gulch area did not fair well by this performance measure. Focusing growth there makes SAAM-2 have somewhat worse performance than others.	
		Focusing growth in the West Area & DSL, both of which have somewhat better walk trip rates, makes SAAM-3 slightly better than the others.									

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Growth

Community Outcome A

Balanced Transportation System

Author: Becky Hewitt

APG

Date: 9/18/2015

Performance Measure 9

Proximity to Transit

Brief Description of Evaluation:

Approximate distance to future transit corridors.

Data Sources

Bend MPO Public Transit Plan, March 2013; 2015 proposed system map.

Interpretation and Key

Subareas that include some development within a quarter mile of an existing or planned transit corridor = "Good" because people are likely to walk up to about a quarter mile to access transit; those including some development over 1/4 mile but under 1/2 mile from an existing or planned transit corridor = "Fair" because some people will walk up to a half mile to access transit; all development over 1/2 mile from an existing or planned transit corridor = "Poor" because few people will walk over a half mile to access transit.

Evaluation Geography	Scenario 1.2				Scenario 3.1				SAAM-1		SAAM-2		SAAM-3	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)														
Total Expansion Area (excluding current Subareas)														
North Triangle	>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)		>1/4 mile to >1/2 mile from primary transit corridor (mostly over 1/2 mile)	
NE Edge	>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor	
DSL Property	1/4-mile to over 1/2 mile from primary transit corridor (roughly half of development within 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly over 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly within 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly within 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly within 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly within 1/2 mile)		1/4-mile to over 1/2 mile from primary transit corridor (mostly within 1/2 mile)	
The "Elbow"	>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor	
The "Thumb"	>1/2 mile from primary transit corridor; possible community connector stop on west side of US 97 could provide limited transit access to the southern end of this area in the long-term		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor		>1/2 mile from primary transit corridor	
West Area	1/4-mile to over 1/2 mile from existing transit corridor (mostly within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)		1/4-mile to over 1/2 mile from existing transit corridor (roughly a third of development within 1/2 mile)	
Shelvin Area	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
OB Riley / Gopher Gulch Area	<1/4-mile to >1/2 mile from primary transit corridor (roughly half within 1/4 mile; mostly within 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (roughly half within 1/4 mile; mostly within 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (small percentage within 1/4 mile; roughly a third of development within 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (small percentage within 1/4 mile; mostly within 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (small percentage within 1/4 mile; mostly over 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (small percentage within 1/4 mile; mostly over 1/2 mile)		<1/4-mile to >1/2 mile from primary transit corridor (small percentage within 1/4 mile; mostly over 1/2 mile)	
Existing UGB (if applicable)	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Overall Score	3 ○		3 ○		3 ○		3 ○		3 ○		3 ○		3 ○	
	Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 4 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.		Includes 1 subarea with good transit adjacency and 3 with fair transit adjacency; remainder with poor transit adjacency.	

For more information about this performance measure, see accompanying technical memorandum from Angelo Planning Group.

Factor 2: Orderly and Economic Growth															
Community Outcome A					Balanced Transportation System										
Performance Measure 10					Housing & Jobs within 1/4 Mile of Future Transit Corridors										
Brief Description of Evaluation.					The share of the total housing units, and total jobs within one quarter mile of future transit corridors.										
Data Sources					Current transit lines, and future planned transit lines from Cascade East Transit.										
Interpretation and Key	Over 20% of housing or jobs adjacent to transit was rated "Good", 1-20% was rated "Fair", and 0% was rated "Poor". Subareas with trivial amounts of housing or jobs are shown in grey. Note that transit access could be improved through routing adjustments for all scenarios and SAAMs.														
	Evaluation	Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3		
			Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
	Total Future UGB (Including Current UGB)		38%	Housing Units	38%	Housing Units	38%	Housing Units	38%	Housing Units	37%	Housing Units	38%	Housing Units	
			55%	Jobs	54%	Jobs	55%	Jobs	55%	Jobs	55%	Jobs	55%	Jobs	
Total Expansion Area (excluding current UGB)		0%	Housing Units	0%	Housing Units	0%	Housing Units	0%	Housing Units	0%	Housing Units	0%	Housing Units		
		5%	Jobs	0%	Jobs	6%	Jobs	5%	Jobs	6%	Jobs	6%	Jobs		
Subareas															
North Triangle	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs
NE Edge	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs
DSL Property	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs
The "Elbow"	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs
The "Thumb"	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs	0%		Jobs
West Area	0%		Housing Units	0%		Housing Units	0%		Housing Units	N/A		Housing Units	0%		Housing Units
	0%		Jobs	0%		Jobs	0%		Jobs	N/A		Jobs	0%		Jobs
Shelvin Area	N/A		Housing Units	N/A		Housing Units	0%		Housing Units	0%		Housing Units	N/A		Housing Units
	N/A		Jobs	N/A		Jobs	0%		Jobs	0%		Jobs	N/A		Jobs
OB Riley / Gopher Gulch Area	3%		Housing Units	3%		Housing Units	0%		Housing Units	3%		Housing Units	0%		Housing Units
	40%		Jobs	0%		Jobs	28%		Jobs	39%		Jobs	24%		Jobs
Existing UGB (if applicable)	41%		Housing Units	41%		Housing Units	41%		Housing Units	41%		Housing Units	41%		Housing Units
	62%		Jobs	62%		Jobs	62%		Jobs	62%		Jobs	62%		Jobs
Overall Score	3		○	3		○	3		○	3		○	3		○
	Notes about Overall Score			The difference here is that the OB Riley / Gopher Gulch area includes the "Large lot Industrial" designation, which does not have a certain number of jobs associated with it, but still makes sense to be included for these purposes.											

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Growth

Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Community Outcome Balanced Transportation System

Date: 9/18/2015

Performance Measure 11		Total Intersection Density per Sq Mi															
Brief Description of Evaluation:		The density (intersections per square mile) of intersections.															
Data Sources		Current intersections were derived from centerline files from Deschutes County. New intersections are an output of Envision Tomorrow, based off of road network assumptions for each development type. Generally, higher density residential and more urban commercial types have higher intersection densities, while lower density residential and industrial types have lower intersection densities.															
Interpretation and Key		A higher intersection density makes an area more walkable and reduces out of direction travel. Ratings are relative to the existing UGB: similar to the existing UGB (within 5 intersections / sq mi) = Fair; better/higher than the existing UGB (by more than 5 intersections / sq mi) = Good; worse/lower than the existing UGB (by more than 5 intersections / sq mi) = Poor.															
Evaluation Geography	Total Future UGB (Including Current UGB) Total Expansion Area (excluding current UGB)	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3					
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units				
		Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM	Intersections/SqM				
		77	Intersections/SqM	69	Intersections/SqM	73	Intersections/SqM	83	Intersections/SqM	76	Intersections/SqM	78	Intersections/SqM				
		77	Intersections/SqM	79	Intersections/SqM	62	Intersections/SqM	77	Intersections/SqM	62	Intersections/SqM	62	Intersections/SqM				
		80	Intersections/SqM	85	Intersections/SqM	84	Intersections/SqM	86	Intersections/SqM	107	Intersections/SqM	107	Intersections/SqM				
		61	Intersections/SqM	62	Intersections/SqM	60	Intersections/SqM	70	Intersections/SqM	93	Intersections/SqM	105	Intersections/SqM				
		90	Intersections/SqM	68	Intersections/SqM	78	Intersections/SqM	91	Intersections/SqM	78	Intersections/SqM	78	Intersections/SqM				
		81	Intersections/SqM	77	Intersections/SqM	78	Intersections/SqM	92	Intersections/SqM	77	Intersections/SqM	74	Intersections/SqM				
		88	Intersections/SqM	82	Intersections/SqM	79	Intersections/SqM	-	Intersections/SqM	-	Intersections/SqM	76	Intersections/SqM				
Shevlin Area OB Riley / Gopher Gulch Area Existing UGB (if applicable)	-	Intersections/SqM	-	Intersections/SqM	79	Intersections/SqM	79	Intersections/SqM	-	Intersections/SqM	-	Intersections/SqM					
	63	Intersections/SqM	33	Intersections/SqM	27	Intersections/SqM	63	Intersections/SqM	75	Intersections/SqM	85	Intersections/SqM					
	80	Intersections/SqM	80	Intersections/SqM	80	Intersections/SqM	80	Intersections/SqM	80	Intersections/SqM	80	Intersections/SqM					
	3	○	2	🔴	2	🔴	3	○	3	○	3	○					
Overall Score															3		○

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

DKS Associates

CSM

Author:

Cost Effective Infrastructure

Date: 10/1/2015

Performance Measure 2		Transportation Infrastructure Improvements													
Brief Description of Evaluation:		Cost of Transportation Improvements for serving the expansion area and mitigating impacts in the City system. Cost for expansion areas include new roadway network only (not congestion mitigation)													
Data Sources		Bend SDC Unit Costs, Travel Demand Model link congestion plots													
Interpretation and Key		Lower overall costs perform better. The overall scenario cost includes new arterials and collectors to serve expansion areas and capacity improvements in the system to mitigate congestion impacts. The Expansion area total excludes improvements identified as needed to serve growth inside the existing UGB. Costs at the subarea level (excluding the existing UGB) include the new arterial and collector grid system only.													
		"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank					
		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3			
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units		
Evaluation Geography		\$212.6 Million		\$165.2 Million		\$210.0 Million		\$199.1 Million		\$175.4 Million		\$169.4 Million			
Total Future UGB (Including Current UGB)															
Total Expansion Area (excluding current UGB)		\$206.1 Million		\$158.6 Million		\$203.5 Million		\$192.6 Million		\$168.9 Million		\$162.8 Million			
Subareas															
North Triangle		27.8 Millions \$		27.8 Millions \$		27.8 Millions \$		27.8 Millions \$		27.8 Millions \$		27.8 Millions \$			
NE Edge		49.1 Millions \$		20.2 Millions \$		26.9 Millions \$		33.3 Millions \$		0.0 Millions \$		0.0 Millions \$			
DSL Property		17.6 Millions \$		18.5 Millions \$		16.5 Millions \$		9.1 Millions \$		12.1 Millions \$		19.6 Millions \$			
The "Elbow" *		48.2 Millions \$		58.3 Millions \$		41.8 Millions \$		39.4 Millions \$		39.4 Millions \$		39.4 Millions \$			
The "Thumb"		19.7 Millions \$		10.5 Millions \$		10.5 Millions \$		4.3 Millions \$		4.3 Millions \$		4.3 Millions \$			
West Area		5.8 Millions \$		9.7 Millions \$		24.9 Millions \$		0 Millions \$		0 Millions \$		39.3 Millions \$			
Shevlin Area		0 Millions \$		0 Millions \$		16.3 Millions \$		20.9 Millions \$		0 Millions \$		0 Millions \$			
OB Riley / Gopher Gulch Area		2.7 Millions \$		2.7 Millions \$		26.9 Millions \$		2.7 Millions \$		52.4 Millions \$		2.7 Millions \$			
Existing UGB (if applicable)		\$6.5 Millions \$		\$6.5 Millions \$		\$6.5 Millions \$		\$6.5 Millions \$		\$6.5 Millions \$		\$6.5 Millions \$			
Overall Score		1 ●		5 ●		1 ●		2 ●		3 ○		4 ●			
		High cost for connecting The Elbow and NE Edge, costly corridor improvement required to Knott Road, and a high number of required intersection capacity improvements.		High cost for connecting The Elbow but low connectivity costs elsewhere; lowest cost for congestion mitigations.		Highest cost for connecting growth areas due to distributed growth; requires widening of US 20 from Robal Rd to 3rd Street.		High cost for connecting growth areas, low cost for roadway widening, high cost for intersection improvements.		Low cost for connecting growth areas, high cost for required intersection capacity improvements; requires widening of US 20 from Robal Rd to 3rd Street.		Low cost for connecting growth areas and moderate cost for congestion mitigations; requires widening of US 20 from Robal Rd to 3rd Street.			

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

* Note: Costs for The Elbow include new roads needed to connect through vacant land inside the existing UGB as well as extensions outside the current UGB in The Elbow subarea. Roughly \$32 million of this cost would likely be needed even without UGB expansion.

Factor 2: Orderly and Economic Provision of Public Facilities and Services
Community Outcome
B. Cost Effective Infrastructure

Author: CSM
Date: 10/1/2015

DKS Associates

Transportation Infrastructure Improvements														
Cost of Transportation Improvements for serving the expansion area (collector and arterial grid).														
Bend SDC Unit Costs, Travel Demand Model link congestion plots														
Growth areas and scenarios that have the lowest cost/acre rank the best, with "good" rating given where costs are \$50K/acre or less, "fair" for \$50-\$100K/acre, and "poor" for >\$100K/acre														
Performance Measure 1 Brief Description of Evaluation: Data Sources Interpretation and Key	"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank	SAAM-1				SAAM-2		SAAM-3		
						Value	Units	Value	Units	Value	Units	Value	Units	
	Evaluation Geography						Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
	Total Future UGB (Including Current UGB)													
	Total Expansion Area (excluding current UGB)						101 \$1,000/Acre		62 \$1,000/Acre		75 \$1,000/Acre		88 \$1,000/Acre	
	Subareas													
	North Triangle						120.2 \$1,000/Acre		138.8 \$1,000/Acre		111.1 \$1,000/Acre		111.1 \$1,000/Acre	
	NE Edge						166.8 \$1,000/Acre		18.7 \$1,000/Acre		0.0 \$1,000/Acre		0.0 \$1,000/Acre	
	DSL Property						86.2 \$1,000/Acre		69.7 \$1,000/Acre		57.6 \$1,000/Acre		156.6 \$1,000/Acre	
	The "Elbow"						234.8 \$1,000/Acre		262.9 \$1,000/Acre		214.3 \$1,000/Acre		214.3 \$1,000/Acre	
The "Thumb"						59.4 \$1,000/Acre		17.8 \$1,000/Acre		19.0 \$1,000/Acre		19.4 \$1,000/Acre		
West Area						75.8 \$1,000/Acre		-		-		58.7 \$1,000/Acre		
Shevlin Area						92.6 \$1,000/Acre		38.3 \$1,000/Acre		-		-		
OB Riley / Gopher Gulch Area						59.7 \$1,000/Acre		20.4 \$1,000/Acre		48.1 \$1,000/Acre		14.7 \$1,000/Acre		
Existing UGB (if applicable)						\$1,000/Acre		\$1,000/Acre		\$1,000/Acre		\$1,000/Acre		
Overall Score						2		3		4		3		

For more information about this performance measure, see accompanying technical memorandum from DKS Associates.

* Note: Costs for The Elbow include new roads needed to connect through vacant land inside the existing UGB as well as extensions outside the current UGB in The Elbow subarea. Roughly \$32 million of this cost would likely be needed even without UGB expansion.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Author: Fregonese Associates

B. Cost Effective Infrastructure

Date: 9/10/2015

Performance Measure 3 New Linear Miles of Local Roadway**Brief Description of Evaluation:**

The number of new road miles required to service the expansion areas. This is internal roadways only, not roadways aridly in the TPR.

Data Sources

New lineal roadways miles are an output of Envision Tomorrow, based on road network assumptions for each development type.

Interpretation and Key

"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank
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Evaluation	Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	Total Expansion Area (excluding current UGB)	266	Road Lane Miles	260	Road Lane Miles	270	Road Lane Miles	301	Road Lane Miles	274	Road Lane Miles	269	Road Lane Miles
		83	Road Lane Miles	76	Road Lane Miles	86	Road Lane Miles	117	Road Lane Miles	90	Road Lane Miles	85	Road Lane Miles
		Subareas											
North Triangle	NE Edge	13	Road Lane Miles	10	Road Lane Miles	12	Road Lane Miles	13	Road Lane Miles	12	Road Lane Miles	12	Road Lane Miles
		18	Road Lane Miles	6	Road Lane Miles	7	Road Lane Miles	48	Road Lane Miles	3	Road Lane Miles	3	Road Lane Miles
		8	Road Lane Miles	15	Road Lane Miles	7	Road Lane Miles	6	Road Lane Miles	11	Road Lane Miles	8	Road Lane Miles
DSL Property	The "Elbow"	10	Road Lane Miles	18	Road Lane Miles	9	Road Lane Miles	7	Road Lane Miles	9	Road Lane Miles	9	Road Lane Miles
		20	Road Lane Miles	16	Road Lane Miles	11	Road Lane Miles	17	Road Lane Miles	13	Road Lane Miles	13	Road Lane Miles
		6	Road Lane Miles	8	Road Lane Miles	16	Road Lane Miles	N/A	Road Lane Miles	N/A	Road Lane Miles	30	Road Lane Miles
West Area	Shevlin Area	N/A	Road Lane Miles	N/A	Road Lane Miles	7	Road Lane Miles	19	Road Lane Miles	N/A	Road Lane Miles	N/A	Road Lane Miles
		7	Road Lane Miles	3	Road Lane Miles	18	Road Lane Miles	7	Road Lane Miles	42	Road Lane Miles	10	Road Lane Miles
		183	Road Lane Miles	183	Road Lane Miles	183	Road Lane Miles	183	Road Lane Miles	183	Road Lane Miles	183	Road Lane Miles
Overall Score		3		4		3		2		3		3	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Community Outcome B.

Cost Effective Infrastructure

Author: Murray Smith Associates

Date: 10/1/2015

Efficiency of Additional Sanitary Sewer Infrastructure Improvements											
Efficiency of sanitary sewer infrastructure improvements required to serve new growth, beyond what is included in the existing CSMP.											
Ratings for subareas are assigned based on the following considerations: "Good" means the subarea takes advantage of improvements needed to serve the existing UGB (e.g. Northeast Interceptor and Hamby alignment); "Fair" means there is somewhat costly localized infrastructure needed and/or that the amount of growth in the subarea doesn't take advantage of the improvements needed to serve the existing UGB; "Poor" means that costly new regional infrastructure (not a gravity system) is required that would not otherwise be needed.											
Performance Measure 4 Brief Description of Evaluation: Data Sources Interpretation and Key	Good"	Fair"	Poor"	No Data	Not appropriate to rank	Scenario 1.2 Qualitative Evaluation	Scenario 2.1 Qualitative Evaluation	Scenario 3.1 Qualitative Evaluation	SAAM-1 Qualitative Evaluation	SAAM-2 Qualitative Evaluation	SAAM-3 Qualitative Evaluation
	Subareas										
	North Triangle										
	NE Edge										
	DSL Property										
	The "Elbow"										
	The "Thumb"										
	West Area										
	Shewlin Area										
	OB Riley / Gopher Gulch Area										
Existing UGB (if applicable)											
Overall Score											
Scenario takes advantage of Hamby and NEI											
Scenario takes advantage of NEI, but does not take full advantage of Hamby by developing NE Edge											
Scenario takes advantage of NEI, but does not take full advantage of Hamby by developing NE Edge											
Scenario takes advantage of Hamby and NEI; however requires regional pump station for Shewlin											
Scenario takes advantage of NEI; does not take full advantage of Hamby by developing NE Edge. requires regional pump station for West											

For more information about this performance measure, see accompanying technical memorandum from Murray Smith Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services
B. Cost Effective Infrastructure

Author: Murray Smith Associates

Date: 10/1/2015

Performance Measure 5 Initial Capital Cost of Sanitary Sewer Infrastructure Improvements

Brief Description of Evaluation: Initial capital cost (millions of dollars) of sanitary sewer infrastructure improvements required to serve new growth, beyond what is included in the existing CSMP. Note that operational and maintenance costs and lifecycle costs for pump stations are not included.

Data Sources

Interpretation and Key Better ranking fields have lower total cost of improvements needed. At the subarea level, costs under \$6 million are rated "Good", \$6-12 million is "Fair", over \$12 million is "Poor". For Scenario / SAAM totals, under \$46 million is rated "Good", \$46-52 million is rated "Fair" and over \$52 million is rated "Poor".

"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank
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Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1	SAAM-1		SAAM-2		SAAM-3	
	Value	Units	Value	Units	Value	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)											
Total Expansion Area (excluding current UGB)	38.0	\$M	39.5	\$M	45.4	\$M	\$M	41.0	\$M	54.3	\$M

Subareas

North Triangle	2.6	\$M	2.5	\$M	1.9	\$M	0.8	\$M	1.4	\$M	1.8	\$M
NE Edge	5.2	\$M	2.6	\$M	3.5	\$M	8.2	\$M	0.5	\$M	0.6	\$M
DSL Property	6.4	\$M	7.8	\$M	6.5	\$M	5.5	\$M	11.7	\$M	5.5	\$M
The "Elbow"	7.7	\$M	10.0	\$M	8.6	\$M	7.9	\$M	9.4	\$M	9.5	\$M
The "Thumb"	6.8	\$M	7.1	\$M	5.4	\$M	6.1	\$M	7.4	\$M	6.9	\$M
West Area	2.8	\$M	2.8	\$M	7.0	\$M	N/A	\$M	N/A	\$M	27.2	\$M
Shevlin Area	N/A		N/A		4.0	\$M	24.1	\$M	N/A		N/A	
OB Riley / Gopher Gulch Area	6.5	\$M	6.6	\$M	8.5	\$M	1.6	\$M	10.5	\$M	2.7	\$M
Existing UGB (if applicable)	N/A		N/A		N/A		N/A		N/A		N/A	

Overall Score	4		3		3		1		3		1	
	Initial capital costs are low to moderate in all subareas, and the lowest overall.	Initial capital costs are low to moderate in all subareas, and relatively low overall.	Initial capital costs are low to moderate in all subareas, and relatively low overall.	Initial capital costs are low to moderate in all subareas, and relatively low overall.	Initial capital costs are low to moderate in all subareas, and relatively low overall.	Initial capital costs are low to moderate in all subareas, and relatively low overall.	Need for new regional pump station significantly increases costs for the Shevlin Area and overall.	Need for new regional pump station significantly increases costs for the West Area and overall.				

For more information about this performance measure, see accompanying technical memorandum from Murray Smith Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services													
Community Outcome				Author:		Murray Smith Associates							
B. Cost Effective Infrastructure				Date:		10/1/2015							
Performance Measure 6				Initial capital cost of Sanitary Sewer Infrastructure Improvements per developed acre									
Brief Description of Evaluation:				Cost of infrastructure improvements required to serve new growth, beyond what is included in the existing CSMP, divided by the urbanized acres									
Data Sources													
Interpretation and Key				Ratings are assigned based primarily on the performance of the subareas and less on the overall average cost per acre at the Scenario / SAAM level; under \$25,000 per acre is rated as "Good", \$25,000-40,000 is rated as Fair, over \$40,000 is rated as "Poor."									
				"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank	
Evaluation Geography		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)													
Total Expansion Area (excluding current UGB)		22,646	\$/Acre	23,253	\$/Acre	22,593	\$/Acre	22,864	\$/Acre	24,731	\$/Acre	33,520	\$/Acre
Subareas													
North Triangle		13,473	\$/Acre	13,258	\$/Acre	8,116	\$/Acre	4,268	\$/Acre	5,853	\$/Acre	7,742	\$/Acre
NE Edge		11,534	\$/Acre	20,000	\$/Acre	22,062	\$/Acre	7,338	\$/Acre	12,944	\$/Acre	14,831	\$/Acre
DSL Property		29,140	\$/Acre	21,846	\$/Acre	33,816	\$/Acre	44,343	\$/Acre	61,882	\$/Acre	43,233	\$/Acre
The "Elbow"		37,671	\$/Acre	24,779	\$/Acre	48,338	\$/Acre	52,029	\$/Acre	53,094	\$/Acre	53,692	\$/Acre
The "Thumb"		19,432	\$/Acre	22,834	\$/Acre	30,655	\$/Acre	26,217	\$/Acre	34,714	\$/Acre	32,918	\$/Acre
West Area		21,361	\$/Acre	16,422	\$/Acre	18,812	\$/Acre	N/A		N/A		41,327	\$/Acre
Shevlin Area		N/A		N/A		12,556	\$/Acre	56,235	\$/Acre	N/A		N/A	
OB Riley / Gopher Gulch Area		51,293	\$/Acre	49,176	\$/Acre	18,840	\$/Acre	12,501	\$/Acre	13,102	\$/Acre	15,448	\$/Acre
Existing UGB (if applicable)		N/A		N/A		N/A		N/A		N/A		N/A	
Overall Score		3	○	4	🟢	3	○	2	🔴	2	🔴	1	🔴
		DSL property and The Elbow are moderately cost-effective due to moderate area included and fixed costs to serve the area; OB Riley has cost per acre, but needed infrastructure to serve that area may in the very long term serve additional growth				The Elbow is not cost-effective due to small area included and fixed costs to serve the area, DSL property and The Thumb has cost per acre, but needed infrastructure to serve that area may in the very long term serve additional growth and fixed costs to serve the area				DSL property and The Elbow are not cost-effective due to small area included and fixed costs to serve the area; also requires regional pump station for West, which increases cost in that area significantly; also has high overall cost per acre			

For more information about this performance measure, see accompanying technical memorandum from Murray Smith Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Author: Murray Smith Associates

Community Outcome B. Cost Effective Infrastructure

Date: 9/8/2015

Drinking Water Infrastructure Improvements						
Drinking water infrastructure improvements within city water service area required to serve new growth, beyond what is already planned						
Data Sources						
Better ranking fields are easier to expand / upgrade infrastructure.						
Interpretation and Key	"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank	
	Scenario 1.2 <i>Qualitative Evaluation</i>	Scenario 2.1 <i>Qualitative Evaluation</i>	Scenario 3.1 <i>Qualitative Evaluation</i>	SAAM-1 <i>Qualitative Evaluation</i>	SAAM-2 <i>Qualitative Evaluation</i>	SAAM-3 <i>Qualitative Evaluation</i>
Evaluation Geography						
Total Future UGB (Including Current UGB)						
Total Expansion Area (excluding current UGB)						
Subareas						
North Triangle	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion
NE Edge						
DSL Property						
The "Elbow"						
The "Thumb"						
West Area	Zone 3 expansion	Zone 3 expansion	Zone 3 expansion	N/A	N/A	Zone 3 expansion
Shevlin Area	N/A	N/A	Zone 4E, 5B, 6B expansion: supply through smaller zones and PRVs	Zone 4E, 5B, 6B expansion: supply through smaller zones and PRVs	N/A	N/A
OB Riley / Gopher Gulch Area	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion	Zone 6 expansion
Existing UGB (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A
Overall Score	5	5	4	4	5	5
	Favors expansion in Zones 3 and 6	Favors expansion in Zones 3 and 6	More problematic to expand into Zones 4E, 5B, 6B	More problematic to expand into Zones 4E, 5B, 6B	Favors expansion in Zones 3 and 6	Favors expansion in Zones 3 and 6

For more information about this performance measure, see accompanying technical memorandum from Murray Smith Associates.

Factor 2: Orderly and Economic Growth**Author:** Name**Fregonese Associates****Community Outcome B Cost Effective Infrastructure****Date:** 9/10/2015**Performance Measure 9****Total Impervious Area from New Development****Brief Description of Evaluation:** The amount of impervious area for each scenario. Includes impervious amounts of buildings, surface parking lots, and roadways.

Impervious area is an Envision Tomorrow output, based off building/prototype assumptions. Note that certain land uses, including the large lot industrial site and schools, do not have specific impervious surface assumptions built in, and do not contribute to the totals.

Variations are subtle at the full scenario level and for the expansion areas total.

Evaluation Geography	Scenario 1.2			Scenario 2.1			Scenario 3.1			SAAM-1		SAAM-2		SAAM-3	
	Value	Units	"Good"	Value	Units	"Poor"	Value	Units	Value	Units	Value	Units	Value	Units	Value
Total Future UGB (Including Current UGB)	3,315	Acres		3,291	Acres		3,393	Acres	3,526	Acres	3,405	Acres	3,311	Acres	
Total Expansion Area (excluding current UGB)	1,047	Acres		1,022	Acres		1,122	Acres	1,251	Acres	1,130	Acres	1,043	Acres	
Subareas															
North Triangle	153	Acres		130	Acres		138	Acres	153	Acres	138	Acres	138	Acres	
NE Edge	237	Acres		72	Acres		91	Acres	452	Acres	29	Acres	29	Acres	
DSL Property	115	Acres		210	Acres		93	Acres	72	Acres	127	Acres	102	Acres	
The "Elbow"	126	Acres		233	Acres		113	Acres	92	Acres	113	Acres	113	Acres	
The "Thumb"	239	Acres		219	Acres		130	Acres	180	Acres	151	Acres	158	Acres	
West Area	92	Acres		118	Acres		181	Acres	N/A	Acres	N/A	Acres	377	Acres	
Shevlin Area	N/A	Acres		N/A	Acres		98	Acres	216	Acres	N/A	Acres	N/A	Acres	
OB Riley / Gopher Gulch Area	85	Acres		41	Acres		279	Acres	85	Acres	573	Acres	126	Acres	
Existing UGB (if applicable)	2,268	Acres		2,268	Acres		2,268	Acres	2,268	Acres	2,268	Acres	2,268	Acres	
Overall Score	4			4			3		3		3		4		
	Model overestimates impervious surface area for NE Edge														

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 2: Orderly and Economic Provision of Public Facilities and Services**Community Outcome B Cost Effective Infrastructure**

Author: Laura Krull,
Andrew Parish

APG

Date: 8/25/2015

Performance Measure 10	Acres of new development with welded tuff geology											
Brief Description of Evaluation:	Acres of new development in areas with geology of "Welded Tuff", which is more difficult to build stormwater infrastructure upon.											
Data Sources	Welded Tuff Geology, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Service Geographic (SSURGO) data set											
Interpretation and Key	Areas with < 100 acres of development in welded tuff ranked green, areas with 100 - 200 acres ranked yellow, areas with > 200 acres ranked red.											
	"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank			
Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
Total Future UGB (Including Current UGB)	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
	1269 acres		1310 acres		1478 acres		1409 acres		1143 acres		1666 acres	
Total Expansion Area (excluding current UGB)	133 acres		173 acres		341 acres		272 acres		6 acres		529 acres	
Subareas												
North Triangle	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres	
NE Edge	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres	
DSL Property	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres	
The "Elbow"	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres	
The "Thumb"	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres	
West Area	132 acres		171 acres		309 acres		0 acres		0 acres		529 acres	
Shevlin Area	0 acres		0 acres		26 acres		272 acres		0 acres		0 acres	
OB Riley / Gopher Gulch Area	0 acres		0 acres		0 acres		0 acres		6 acres		0 acres	
Existing UGB (if applicable)	1137 acres		1137 acres		1137 acres		1137 acres		1137 acres		1137 acres	
Overall Score	3 ○		3 ○		2 🍷		2 🍷		5 🟢		1 🟢	
	Moderate development in West area, which has Welded Tuff geology		Moderate development in West area, which has Welded Tuff geology		Significant development in West and Shevlin areas, which have Welded Tuff geology		Significant development in West and Shevlin areas, which have Welded Tuff geology		Little to no development in areas with Welded Tuff geology		Significant development in West area, which has Welded Tuff geology	

For more information about this performance measure, see accompanying technical memorandum from APG

Factor 2: Orderly and Economic Provision of Public Facilities and Services

Author: Laura Krull,
Andrew Parish

APG**Community Outcome B Cost Effective Infrastructure**

Date: 8/25/2015

Performance Measure 6		Acres of new development within DWPA											
Brief Description of Evaluation:		Acres of development within identified Drinking Water Protection Areas											
Data Sources		Scenario and SAAM GIS layers, Bend UGB Remand Project; Drinking Water Protection Areas, City of Bend.											
Interpretation and Key	All scenarios develop on land within DWPA. Most drinking water protection areas are in the South of the city. Scenarios with greater than 300 acres ranked "Poor" and scenarios with less than 300 ranked "Fail".												
		"Good"	"Fail"	"Poor"	No Data	Not appropriate to rank							
	Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
	Total Future UGB (Including Current UGB)	Units		Value		Units		Value		Units		Value	
	Total Expansion Area (excluding current UGB)	Units		Value		Units		Value		Units		Value	
Subareas													
North Triangle	2 acres		2 acres		2 acres		2 acres		2 acres		2 acres		
	6 acres		6 acres		6 acres		6 acres		0 acres		0 acres		
	3 acres		3 acres		3 acres		3 acres		2 acres		3 acres		
	0 acres		0 acres		0 acres		0 acres		0 acres		0 acres		
	335 acres		296 acres		161 acres		231 acres		182 acres		196 acres		
West Area	56 acres		44 acres		64 acres		0 acres		0 acres		65 acres		
	0 acres		0 acres		6 acres		16 acres		0 acres		0 acres		
	0 acres		0 acres		8 acres		0 acres		8 acres		0 acres		
	871 acres		871 acres		871 acres		871 acres		871 acres		871 acres		
	1		2		3		3		5		3		
Overall Score		1		2		3		3		5		3	

For more information about this performance measure, see accompanying technical memorandum from APG

Factor 3: ESEE**Community
Outcome A****Quality Natural Environment****Author:** Andrew Parish**APG****Date:** 9/2/2015

Performance Measure 2	Linear feet of property along Deschutes River and Tumalo Creek											
Brief Description of Evaluation:	Linear feet (not in parks ownership) along identified Goal 5 areas of the Deschutes River and Tumalo Creek, in the Shevlin Area and the Gopher Gulch Area.											
Data Sources	Deschutes County Assessor's Data, City of Bend data.											
Interpretation and Key	"Good"		"Fair"	"Poor"	No Data	Not appropriate to rank						
	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
Evaluation Geography	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Expansion Area (excluding current UGB)	- Feet		- Feet		- Feet		1,100 Feet		6,000 Feet		8,100 Feet	- Feet
Subareas												
North Triangle	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	
NE Edge	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	
DSL Property	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	
The "Elbow"	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	
The "Thumb"	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	
West Area	- Feet		- Feet		- Feet		0 Feet		- Feet		- Feet	
Shevlin Area	0 Feet		0 Feet		0 Feet		6,000 Feet		0 Feet		0 Feet	
OB Riley / Gopher Gulch Area	- Feet		- Feet		- Feet		1,100 Feet		- Feet		8,100 Feet	- Feet
Existing UGB (if applicable)	- Feet		- Feet		- Feet		- Feet		- Feet		- Feet	

Overall Score	5	4	3	3	5
No expansion areas about Tumalo Creek or the Deschutes River.	No expansion areas about Tumalo Creek or the Deschutes River.	The southern portion of the OB Riley / Gopher Gulch area abuts the Deschutes River for roughly 1100 feet.	Shevlin Area abuts Tumalo Creek, but the Bend Metropolitan Parks & Recreation District has ownership of the property within roughly 500ft of the river.	Gopher Gulch property abuts the Deschutes River - though the State of Oregon Parks and Recreation owns much of the riverfront from about 50ft to 200ft from the river and roughly 7,000 feet of riverfront is owned by the Bend Parks & Recreation District. Open space buffers will likely be required in a few areas that are privately owned and within 100' of the river. Roughly 1300 feet of property is in private ownership and abuts the river.	West area does not abut Tumalo Creek.

Factor 3: ESEE Community Outcome A Quality Natural Environment						
Performance Measure 3		Wildfire Hazard				
Brief Description of Evaluation:		Based on wildfire hazard as determined by vegetation, slope, and levels of existing management.				
Data Sources		Greater Bend Community Wildfire Protection Plan, Deschutes Co Fire Risk Index Map, Fire Risk Assessment for Bend UGB, Fire Behavior Analysis for Bend UGB Investigation (draft).				
Interpretation and Key		By sub-area, "Good" means that fire hazard was determined to be low (1). "Fair" means that the fire hazard was determined to be "High (2)." "Poor" means that the fire hazard was determined to be "Extreme (3)." Areas with a mix of "High" and "Extreme" hazard were classified as "Poor." NOTE: These rankings are based on the hazard evaluation only. Employment land is protected by existing building code. Mitigation measures are being developed which will reduce hazard to residential areas if adopted into code.				
		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank
Evaluation Geography		Scenario 1,2	Scenario 2,1	Scenario 3,1	SAAM-1	SAAM-2
Total Future UGB (Including Current UGB)						
Total Expansion Area (excluding current UGB)						
Subareas		Mosaic high fire hazard: there is hazard of fire due to vegetation type, but it would be relatively easy to control because of the patchy nature of the High fire hazard areas				
North Triangle		No residential development. Current building codes require fire protection for commercial buildings	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings
		Mosaic high fire hazard: there is hazard of fire due to vegetation type, but it would be relatively easy to control because of the patchy nature of the High fire hazard areas				
NE Edge		Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings
		Extreme fire hazard: unmanaged and unirrigated. Hazard could be reduced to high with proper management of vegetation.				
DSL Property		Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas
		Extreme fire hazard west of 27th/north of Knott Road; hazard could be reduced to high with proper management of vegetation. Remainder of area is mosaic High fire hazard				
The "Elbow"		Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings
		well-managed High fire hazard				
The "Thumb"		Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings
		Miller property : well-managed High hazard; Day property: managed High hazard				
West Area		Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	N/A	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas
		mosaic of managed High and Extreme fire hazard; portions of the subarea have topography and unmanaged adjacent lands that could make it difficult to reduce fire hazard				
Shevlin Area		N/A	N/A	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas	N/A
		managed High fire hazard, with pockets of Extreme (hazard could be reduced to high with proper management of vegetation except along steep slopes adjacent to river)				
OB Riley / Gopher Gulch Area		No residential development. Current building codes require fire protection for commercial buildings	No residential development. Current building codes require fire protection for commercial buildings	Residential development in high fire hazard area. New regulations / mitigation strategies needed for residential areas	No residential development. Current building codes require fire protection for commercial buildings	Residential development in extreme fire hazard area. New regulations / mitigation strategies needed for residential areas
Existing UGB (if applicable)		N/A	N/A	N/A	N/A	N/A
Overall Score		3 ○	3 ○	2 ☹	2 ☹	3 ○
		Includes four subareas with a High hazard rating and three with an Extreme hazard rating. The three subareas rated Extreme in this scenario could be reduced to High with proper management of vegetation.	Includes four subareas with a High hazard rating and three with an Extreme hazard rating. The three subareas rated Extreme in this scenario could be reduced to High with proper management of vegetation.	includes four subareas with a High hazard rating and four with an Extreme hazard rating. Most of the subareas rated Extreme in this scenario would likely to be reduced to High with proper management of vegetation; however, portions of the Shevlin subarea have topography and unmanaged adjacent lands that could make it more difficult to reduce fire hazard.	includes three subareas with a High hazard rating and four with an Extreme hazard rating. Most of the subareas rated Extreme in this scenario would likely to be reduced to High with proper management of vegetation; however, portions of the Shevlin subarea have topography and unmanaged adjacent lands that could make it more difficult to reduce fire hazard.	includes three subareas with a High hazard rating and three with an Extreme hazard rating. Most of the subareas rated Extreme in this scenario would likely to be reduced to High with proper management of vegetation (area adjacent to river with steep slopes would make it harder to reduce fire hazard on the western edge, but this is largely park land).

For more information about this performance measure, see accompanying technical memorandum from City of Bend.

Footnotes: (1) No areas were determined to be low hazard in the onsite assessment. Areas are shown as low hazard because existing building codes require fire protection measures (i.e. materials and (2) High hazard means that there is brush, healthy conifers, and open sage and juniper on terrain of less than 25% slope. Variability in the Bend area was addressed by modifying "high" as (3) Extreme hazard means that the areas have grasses, heavy brush, and mature timber with slash. With proper management, all Extreme areas can be modified to High.

Factor 3: ESEE**Author:** Analysis by Fregonese Associates; interpretation by Angelo Planning Group**Community Outcome A Quality Natural Environment****Date:** 9/10/2015

Performance Measure 4		Carbon Dioxide Emissions											
Brief Description of Evaluation:		The average number of tons of CO2 emitted per household, per year, for household based, and transportation based emissions.											
Data Sources		Household CO2 is an output of the Envision Tomorrow Scenario Builder, based on regional averages for different housing types, and seasonality. Transportation CO2 is the output from 7D transportation model, based on national averages for vehicle emissions.											
Interpretation and Key		Smaller, and more compact homes are more energy efficient, and have lower emissions. Larger homes emit more carbon than smaller units, and contain additional people, both of which result in increased emissions per household. As a result, this performance measure is highly correlated with housing mix. This also means that distinctions at the total expansion area and total future UGB level are very subtle, and that there is more variability at the subarea level, depending on the type of housing assumed in each. Transportation emissions reflect the amount and distance of auto trips (see 2.A.1). Color coding relative to average for existing UGB: better than existing UGB (by more than 0.2 tons/yr)= "Good"; within 0.2 tons/yr of existing UGB = "Fair"; worse than existing UGB (by more than 0.2 tons/yr) = "Poor". Subareas with trivial amounts of housing shown in grey since emissions are normalized per household. Overall ratings are based more on the transportation carbon emissions, because these have more meaningful variations at the scenario level, though they are highly correlated with VMT.											
		Good	Fair	Poor	No Data	Not appropriate to rank							
Evaluation Geography		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Units	Value	Units	
Total Future UGB (Including Current UGB)		4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.3	Housing Carbon Emissions Per HH (Ton/Yr)	4.3	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	3.5	Housing Carbon Emissions Per HH (Ton/Yr)
		3.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)
Total Expansion Area (excluding current UGB)		4.7	Housing Carbon Emissions Per HH (Ton/Yr)	4.6	Housing Carbon Emissions Per HH (Ton/Yr)	4.7	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)
		6.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	6.4	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.4	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.9	Trasnportation Carbon Emissions Per HH (Ton/Yr)	8.1	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.5	Trasnportation Carbon Emissions Per HH (Ton/Yr)
Subareas		3.7											
North Traingle		3.5	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.5	Housing Carbon Emissions Per HH (Ton/Yr)	3.5	Housing Carbon Emissions Per HH (Ton/Yr)	3.5	Housing Carbon Emissions Per HH (Ton/Yr)	3.1	Housing Carbon Emissions Per HH (Ton/Yr)
		7.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	4.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)
NE Edge		5.4	Housing Carbon Emissions Per HH (Ton/Yr)	6.0	Housing Carbon Emissions Per HH (Ton/Yr)	5.7	Housing Carbon Emissions Per HH (Ton/Yr)	5.1	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	54.6	Housing Carbon Emissions Per HH (Ton/Yr)
		6.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	9.1	Trasnportation Carbon Emissions Per HH (Ton/Yr)	8.5	Trasnportation Carbon Emissions Per HH (Ton/Yr)	5.9	Trasnportation Carbon Emissions Per HH (Ton/Yr)	12.1	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.4	Trasnportation Carbon Emissions Per HH (Ton/Yr)
DSL Property		3.5	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.8	Housing Carbon Emissions Per HH (Ton/Yr)	3.4	Housing Carbon Emissions Per HH (Ton/Yr)	5.1	Housing Carbon Emissions Per HH (Ton/Yr)	45.3	Housing Carbon Emissions Per HH (Ton/Yr)
		3.1	Trasnportation Carbon Emissions Per HH (Ton/Yr)	4.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	4.4	Trasnportation Carbon Emissions Per HH (Ton/Yr)	2.0	Trasnportation Carbon Emissions Per HH (Ton/Yr)	1.1	Trasnportation Carbon Emissions Per HH (Ton/Yr)	5.3	Trasnportation Carbon Emissions Per HH (Ton/Yr)
The "Elbow"		3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.6	Housing Carbon Emissions Per HH (Ton/Yr)	3.4	Housing Carbon Emissions Per HH (Ton/Yr)	3.6	Housing Carbon Emissions Per HH (Ton/Yr)	6.0	Housing Carbon Emissions Per HH (Ton/Yr)
		9.0	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	55.9	Trasnportation Carbon Emissions Per HH (Ton/Yr)	47.8	Trasnportation Carbon Emissions Per HH (Ton/Yr)	54.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	4.0	Trasnportation Carbon Emissions Per HH (Ton/Yr)
The "Thumb"		6.5	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.0	Housing Carbon Emissions Per HH (Ton/Yr)	3.2	Housing Carbon Emissions Per HH (Ton/Yr)	6.0	Housing Carbon Emissions Per HH (Ton/Yr)	249.8	Housing Carbon Emissions Per HH (Ton/Yr)
		8.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	66.9	Trasnportation Carbon Emissions Per HH (Ton/Yr)	27.0	Trasnportation Carbon Emissions Per HH (Ton/Yr)	16.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.3	Trasnportation Carbon Emissions Per HH (Ton/Yr)
West Area		3.8	Housing Carbon Emissions Per HH (Ton/Yr)	4.2	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	N/A	Housing Carbon Emissions Per HH (Ton/Yr)	N/A	Housing Carbon Emissions Per HH (Ton/Yr)	5.6	Housing Carbon Emissions Per HH (Ton/Yr)
		5.3	Trasnportation Carbon Emissions Per HH (Ton/Yr)	5.5	Trasnportation Carbon Emissions Per HH (Ton/Yr)	6.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)	N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)	4.4	Trasnportation Carbon Emissions Per HH (Ton/Yr)
Shevlin Area		N/A	Housing Carbon Emissions Per HH (Ton/Yr)	N/A	Housing Carbon Emissions Per HH (Ton/Yr)	6.8	Housing Carbon Emissions Per HH (Ton/Yr)	4.8	Housing Carbon Emissions Per HH (Ton/Yr)	N/A	Housing Carbon Emissions Per HH (Ton/Yr)	N/A	Housing Carbon Emissions Per HH (Ton/Yr)
		N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)	N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)	9.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	7.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)	N/A	Trasnportation Carbon Emissions Per HH (Ton/Yr)
OB Riley / Gopher Gulch Area		3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.9	Housing Carbon Emissions Per HH (Ton/Yr)	4.9	Housing Carbon Emissions Per HH (Ton/Yr)	3.3	Housing Carbon Emissions Per HH (Ton/Yr)
		10.6	Trasnportation Carbon Emissions Per HH (Ton/Yr)	10.5	Trasnportation Carbon Emissions Per HH (Ton/Yr)	5.3	Trasnportation Carbon Emissions Per HH (Ton/Yr)	9.0	Trasnportation Carbon Emissions Per HH (Ton/Yr)	5.7	Trasnportation Carbon Emissions Per HH (Ton/Yr)		Trasnportation Carbon Emissions Per HH (Ton/Yr)
Existing UGB (if applicable)		4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)	4.4	Housing Carbon Emissions Per HH (Ton/Yr)
		3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)	3.2	Trasnportation Carbon Emissions Per HH (Ton/Yr)
Overall Score		3	○	4	●	3	○	2	●	2	●	3	○

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 3: ESEE**Author:** Analysis by Fregonese Associates; interpretation by Angelo Planning Group**Community Outcome A Quality Natural Environment****Date:** 9/10/2015

Performance Measure 5		Energy Use											
Brief Description of Evaluation:		The average number of BTUs used per household, per year.											
Data Sources		Household energy usage is an output of the Envision Tomorrow Scenario Builder, based on regional averages for energy efficiency of different housing types.											
Interpretation and Key		Smaller, and more compact homes are more efficient, and require less energy. Larger homes simply occupy more area, and require more energy to operate. As a result, this performance measure is highly correlated with housing mix. This also means that distinctions at the total expansion area and total future UGB level are very subtle, and that there is more variability at the subarea level, depending on the type of housing assumed in each. Color coding is assigned relative to the performance of growth in the existing UGB. "Good" means does better than the existing UGB by 0.5 Million BTU/yr. "Poor" means does worse than the existing UGB by more than 0.5 Million BTU/yr; Fair is within 0.5 Million BTU/yr of the existing UGB.											
		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank							
Evaluation Geography		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Units	Units	Value	Units
Total Future UGB (Including Current UGB)		68.1	Energy Use per HH (Million BTU/yr)	67.9	Energy Use per HH (Million BTU/yr)	68.0	Energy Use per HH (Million BTU/yr)	68.3	Energy Use per HH (Million BTU/yr)	68.4	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)
		21.2	Energy Use per Employee (Million BTU/yr)	21.0	Energy Use per Employee (Million BTU/yr)	21.3	Energy Use per Employee (Million BTU/yr)	20.9	Energy Use per Employee (Million BTU/yr)	20.9	Energy Use per Employee (Million BTU/yr)	21.0	Energy Use per Employee (Million BTU/yr)
Total Expansion Area (excluding current UGB)		74.2	Energy Use per HH (Million BTU/yr)	71.2	Energy Use per HH (Million BTU/yr)	73.0	Energy Use per HH (Million BTU/yr)	76.0	Energy Use per HH (Million BTU/yr)	76.2	Energy Use per HH (Million BTU/yr)	73.4	Energy Use per HH (Million BTU/yr)
		17.6	Energy Use per Employee (Million BTU/yr)	15.9	Energy Use per Employee (Million BTU/yr)	17.9	Energy Use per Employee (Million BTU/yr)	17.7	Energy Use per Employee (Million BTU/yr)	18.0	Energy Use per Employee (Million BTU/yr)	18.3	Energy Use per Employee (Million BTU/yr)
Subareas													
North Triangle		54.2	Energy Use per HH (Million BTU/yr)	60.7	Energy Use per HH (Million BTU/yr)	54.2	Energy Use per HH (Million BTU/yr)	54.2	Energy Use per HH (Million BTU/yr)	54.2	Energy Use per HH (Million BTU/yr)	54.2	Energy Use per HH (Million BTU/yr)
		14.2	Energy Use per Employee (Million BTU/yr)	14.1	Energy Use per Employee (Million BTU/yr)	14.8	Energy Use per Employee (Million BTU/yr)	14.2	Energy Use per Employee (Million BTU/yr)	14.8	Energy Use per Employee (Million BTU/yr)	14.8	Energy Use per Employee (Million BTU/yr)
NE Edge		84.4	Energy Use per HH (Million BTU/yr)	93.7	Energy Use per HH (Million BTU/yr)	89.3	Energy Use per HH (Million BTU/yr)	79.0	Energy Use per HH (Million BTU/yr)	60.9	Energy Use per HH (Million BTU/yr)	60.9	Energy Use per HH (Million BTU/yr)
		23.5	Energy Use per Employee (Million BTU/yr)	22.9	Energy Use per Employee (Million BTU/yr)	23.0	Energy Use per Employee (Million BTU/yr)	22.9	Energy Use per Employee (Million BTU/yr)	22.8	Energy Use per Employee (Million BTU/yr)	22.8	Energy Use per Employee (Million BTU/yr)
DSL Property		55.0	Energy Use per HH (Million BTU/yr)	77.1	Energy Use per HH (Million BTU/yr)	59.4	Energy Use per HH (Million BTU/yr)	52.4	Energy Use per HH (Million BTU/yr)	79.4	Energy Use per HH (Million BTU/yr)	57.7	Energy Use per HH (Million BTU/yr)
		18.5	Energy Use per Employee (Million BTU/yr)	14.9	Energy Use per Employee (Million BTU/yr)	25.0	Energy Use per Employee (Million BTU/yr)	18.4	Energy Use per Employee (Million BTU/yr)	22.3	Energy Use per Employee (Million BTU/yr)	25.0	Energy Use per Employee (Million BTU/yr)
The "Elbow"		60.8	Energy Use per HH (Million BTU/yr)	61.6	Energy Use per HH (Million BTU/yr)	57.0	Energy Use per HH (Million BTU/yr)	52.7	Energy Use per HH (Million BTU/yr)	57.0	Energy Use per HH (Million BTU/yr)	57.0	Energy Use per HH (Million BTU/yr)
		16.3	Energy Use per Employee (Million BTU/yr)	16.1	Energy Use per Employee (Million BTU/yr)	14.7	Energy Use per Employee (Million BTU/yr)	16.4	Energy Use per Employee (Million BTU/yr)	14.7	Energy Use per Employee (Million BTU/yr)	14.7	Energy Use per Employee (Million BTU/yr)
The "Thumb"		101.4	Energy Use per HH (Million BTU/yr)	76.0	Energy Use per HH (Million BTU/yr)	46.9	Energy Use per HH (Million BTU/yr)	49.3	Energy Use per HH (Million BTU/yr)	93.6	Energy Use per HH (Million BTU/yr)	52.5	Energy Use per HH (Million BTU/yr)
		19.6	Energy Use per Employee (Million BTU/yr)	16.5	Energy Use per Employee (Million BTU/yr)	17.6	Energy Use per Employee (Million BTU/yr)	19.6	Energy Use per Employee (Million BTU/yr)	17.6	Energy Use per Employee (Million BTU/yr)	19.0	Energy Use per Employee (Million BTU/yr)
West Area		59.0	Energy Use per HH (Million BTU/yr)	65.8	Energy Use per HH (Million BTU/yr)	75.9	Energy Use per HH (Million BTU/yr)	62.4	Energy Use per HH (Million BTU/yr)	62.6	Energy Use per HH (Million BTU/yr)	82.4	Energy Use per HH (Million BTU/yr)
		21.3	Energy Use per Employee (Million BTU/yr)	16.1	Energy Use per Employee (Million BTU/yr)	21.4	Energy Use per Employee (Million BTU/yr)	21.0	Energy Use per Employee (Million BTU/yr)	21.4	Energy Use per Employee (Million BTU/yr)	19.7	Energy Use per Employee (Million BTU/yr)
Shevlin Area			Energy Use per HH (Million BTU/yr)		Energy Use per HH (Million BTU/yr)	106.0	Energy Use per HH (Million BTU/yr)	74.9	Energy Use per HH (Million BTU/yr)	62.6	Energy Use per HH (Million BTU/yr)	62.6	Energy Use per HH (Million BTU/yr)
			Energy Use per Employee (Million BTU/yr)		Energy Use per Employee (Million BTU/yr)	20.8	Energy Use per Employee (Million BTU/yr)	21.4	Energy Use per Employee (Million BTU/yr)		Energy Use per Employee (Million BTU/yr)		Energy Use per Employee (Million BTU/yr)
OB Riley / Gopher Gulch Area		61.4	Energy Use per HH (Million BTU/yr)	61.0	Energy Use per HH (Million BTU/yr)	60.7	Energy Use per HH (Million BTU/yr)	61.6	Energy Use per HH (Million BTU/yr)	77.2	Energy Use per HH (Million BTU/yr)	51.8	Energy Use per HH (Million BTU/yr)
		15.3	Energy Use per Employee (Million BTU/yr)	14.6	Energy Use per Employee (Million BTU/yr)	18.7	Energy Use per Employee (Million BTU/yr)	15.3	Energy Use per Employee (Million BTU/yr)	19.6	Energy Use per Employee (Million BTU/yr)	19.6	Energy Use per Employee (Million BTU/yr)
Existing UGB (if applicable)		68.1	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)	68.1	Energy Use per HH (Million BTU/yr)
		21.5	Energy Use per Employee (Million BTU/yr)	21.5	Energy Use per Employee (Million BTU/yr)	21.5	Energy Use per Employee (Million BTU/yr)	21.5	Energy Use per Employee (Million BTU/yr)	21.5	Energy Use per Employee (Million BTU/yr)	21.5	Energy Use per Employee (Million BTU/yr)
Overall Score		3 ○		3 ○		3 ○		3 ○		3 ○		3 ○	
		Differences are not significant when comparing full expansion areas against one another.		Differences are not significant when comparing full expansion areas against one another.		Differences are not significant when comparing full expansion areas against one another.		Differences are not significant when comparing full expansion areas against one another.		Differences are not significant when comparing full expansion areas against one another.		Differences are not significant when comparing full expansion areas against one another.	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 3: ESEE										Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group			
Community Outcome										Quality Natural Environment			
Performance Measure 6										Household Water Usage			
Brief Description of Evaluation:										The average number of gallons of water used per household, per day, for both internal consumption, and landscaping.			
Data Sources										Household water usage is an output of the Envision Tomorrow Scenario Builder, based off the number of people per household, and the amount of landscaped area per household, and regional averages for water consumption rates.			
Interpretation and Key										More compact homes have less users, and lower consumption rates. Smaller homes and apartment also have less external landscaped area, requiring less water. Large homes have more users, and higher consumption rates. Larger properties with larger yards also require additional water for lawn maintenance. Color coding relative to average for existing UGB: better than existing UGB (by more than 5 G/Day)= "Good", within 5 G/Day of existing UGB = "Fair", worse than existing UGB (by more than 5 G/Day) = "Poor". Subareas with trivial amounts of housing shown in grey since emissions are normalized per household.			
										Not appropriate to rank.			
Evaluation		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
Total Future UGB (Including Current UGB)		113	Landscaping Water Use (G/Day)	111	Landscaping Water Use (G/Day)	113	Landscaping Water Use (G/Day)	117	Landscaping Water Use (G/Day)	112	Landscaping Water Use (G/Day)	112	Landscaping Water Use (G/Day)
		144	Internal Water Consumption (G/Day)	143	Internal Water Consumption (G/Day)	143	Internal Water Consumption (G/Day)	145	Internal Water Consumption (G/Day)	145	Internal Water Consumption (G/Day)	143	Internal Water Consumption (G/Day)
		83	Landscaping Water Use (G/Day)	74	Landscaping Water Use (G/Day)	84	Landscaping Water Use (G/Day)	101	Landscaping Water Use (G/Day)	83	Landscaping Water Use (G/Day)	79	Landscaping Water Use (G/Day)
		129	Internal Water Consumption (G/Day)	123	Internal Water Consumption (G/Day)	123	Internal Water Consumption (G/Day)	134	Internal Water Consumption (G/Day)	134	Internal Water Consumption (G/Day)	126	Internal Water Consumption (G/Day)
Subareas													
North Triangle		6	Landscaping Water Use (G/Day)	68	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)
		53	Internal Water Consumption (G/Day)	102	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)
NE Edge		115	Landscaping Water Use (G/Day)	139	Landscaping Water Use (G/Day)	128	Landscaping Water Use (G/Day)	118	Landscaping Water Use (G/Day)	56	Landscaping Water Use (G/Day)	56	Landscaping Water Use (G/Day)
		149	Internal Water Consumption (G/Day)	174	Internal Water Consumption (G/Day)	165	Internal Water Consumption (G/Day)	140	Internal Water Consumption (G/Day)	103	Internal Water Consumption (G/Day)	103	Internal Water Consumption (G/Day)
DSL Property		39	Landscaping Water Use (G/Day)	81	Landscaping Water Use (G/Day)	45	Landscaping Water Use (G/Day)	7	Landscaping Water Use (G/Day)	93	Landscaping Water Use (G/Day)	34	Landscaping Water Use (G/Day)
		93	Internal Water Consumption (G/Day)	132	Internal Water Consumption (G/Day)	97	Internal Water Consumption (G/Day)	55	Internal Water Consumption (G/Day)	130	Internal Water Consumption (G/Day)	86	Internal Water Consumption (G/Day)
The "Elbow"		47	Landscaping Water Use (G/Day)	56	Landscaping Water Use (G/Day)	45	Landscaping Water Use (G/Day)	8	Landscaping Water Use (G/Day)	45	Landscaping Water Use (G/Day)	45	Landscaping Water Use (G/Day)
		103	Internal Water Consumption (G/Day)	107	Internal Water Consumption (G/Day)	71	Internal Water Consumption (G/Day)	56	Internal Water Consumption (G/Day)	71	Internal Water Consumption (G/Day)	71	Internal Water Consumption (G/Day)
The "Thumb"		115	Landscaping Water Use (G/Day)	65	Landscaping Water Use (G/Day)	9	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	105	Landscaping Water Use (G/Day)	9	Landscaping Water Use (G/Day)
		174	Internal Water Consumption (G/Day)	130	Internal Water Consumption (G/Day)	57	Internal Water Consumption (G/Day)	54	Internal Water Consumption (G/Day)	164	Internal Water Consumption (G/Day)	57	Internal Water Consumption (G/Day)
West Area		49	Landscaping Water Use (G/Day)	64	Landscaping Water Use (G/Day)	87	Landscaping Water Use (G/Day)	36	Landscaping Water Use (G/Day)		Landscaping Water Use (G/Day)	97	Landscaping Water Use (G/Day)
		102	Internal Water Consumption (G/Day)	115	Internal Water Consumption (G/Day)	130	Internal Water Consumption (G/Day)	87	Internal Water Consumption (G/Day)		Internal Water Consumption (G/Day)	143	Internal Water Consumption (G/Day)
Shelvin Area			Landscaping Water Use (G/Day)		Landscaping Water Use (G/Day)	165	Landscaping Water Use (G/Day)	81	Landscaping Water Use (G/Day)		Landscaping Water Use (G/Day)		Landscaping Water Use (G/Day)
			Internal Water Consumption (G/Day)		Internal Water Consumption (G/Day)	171	Internal Water Consumption (G/Day)	132	Internal Water Consumption (G/Day)		Internal Water Consumption (G/Day)		Internal Water Consumption (G/Day)
OB Riley / Gopher Gulch Area		6	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	60	Landscaping Water Use (G/Day)	6	Landscaping Water Use (G/Day)	82	Landscaping Water Use (G/Day)	25	Landscaping Water Use (G/Day)
		53	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)	100	Internal Water Consumption (G/Day)	53	Internal Water Consumption (G/Day)	135	Internal Water Consumption (G/Day)	65	Internal Water Consumption (G/Day)
Existing UGB (if applicable)		122	Landscaping Water Use (G/Day)	122	Landscaping Water Use (G/Day)	122	Landscaping Water Use (G/Day)	122	Landscaping Water Use (G/Day)	122	Landscaping Water Use (G/Day)	122	Landscaping Water Use (G/Day)
		149	Internal Water Consumption (G/Day)	149	Internal Water Consumption (G/Day)	149	Internal Water Consumption (G/Day)	149	Internal Water Consumption (G/Day)	149	Internal Water Consumption (G/Day)	149	Internal Water Consumption (G/Day)
Overall Score		3		4		3		2		3		3	
		Better performance due to higher housing densities.								Worse performance due to more low-density housing.			

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Author: Analysis by Fregonese Associates; interpretation by Angelo Planning Group

Date: 9/10/2015

Factor 3: ESEE
Community Outcome B
Housing Options, Affordability, and Equity

Average Cost of New Single Family Housing																																																																																																																																																																																				
The average cost a new, single family detached house. Does not include townhomes, condominiums, or rental products.																																																																																																																																																																																				
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Color coding is relative to the existing UGB: similar to existing UGB average (\$425-475k) = "Fair"; less than existing UGB average (<\$425k) = "Good"; more than existing UGB average (>\$475k) = "Poor"																																																																																																																																																																																				
Performance Measure 1	Brief Description of Evaluation:	Data Sources	Interpretation and Key																																																																																																																																																																																	
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Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3																																																																																																																																																																										
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Significant housing growth in the northeast and south (where home prices are anticipated to be lower) drives lower overall costs.

Significant housing growth in the southeast (where home prices are anticipated to be lower) drives lower overall costs.

More development in the West Area and the Shevlin Area, where home prices are anticipated to be higher, drives the higher overall cost.

More development in the Shevlin Area (anticipated to have higher home prices) is balanced out somewhat by development in the Northeast Edge (anticipated to have somewhat lower home prices).

More development in Gopher Gulch, where home prices are anticipated to be somewhat higher, drives the overall cost up a bit relative to other alternatives.

More development in the West Area, where home prices are anticipated to be higher, drives the higher overall cost.

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 3: ESEE		Analysis by Fregonese Associates; interpretation by Angelo Planning Group													
Community Outcome B		Housing Options, Affordability, and Equity													
Performance Measure 2		Housing Mix of New Housing													
Brief Description of Evaluation:		The % of new housing, by type of house.													
Data Sources		Housing mix is an output of Envision Tomorrow, based on the types of buildings that go into each development type, and the amount of each development type applied. If less than 30% of new housing is single family detached in a given subarea, or if single family attached and multifamily together represent less than 30% of the new housing in a subarea, this is considered a moderately unbalanced mix for that area; if those percentages are below 15%, that is considered a highly unbalanced mix. Ratings for the overall scenario are based on how many subareas are internally balanced, rather than on the overall housing mix, which is constant across scenarios. For SAAMs, more consideration was given to the mix in the SAAs that were being tested, with less consideration to the mix in the areas used to accommodate the residual growth.													
Interpretation and Key															
Evaluation	Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3			
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units		
Total Future UGB (Including Current UGB)		55%	Detached SF	54%	Detached SF	54%	Detached SF	55%	Detached SF	55%	Detached SF	54%	Detached SF		
		9%	Attached SF	9%	Attached SF	9%	Attached SF	9%	Attached SF	9%	Attached SF	10%	Attached SF		
		36%	Multifamily	37%	Multifamily	37%	Multifamily	36%	Multifamily	35%	Multifamily	36%	Multifamily		
		45%	Detached SF	40%	Detached SF	40%	Detached SF	46%	Detached SF	48%	Detached SF	40%	Detached SF		
Total Expansion Area (excluding current UGB)		12%	Attached SF	14%	Attached SF	13%	Attached SF	12%	Attached SF	13%	Attached SF	16%	Attached SF		
		43%	Multifamily	46%	Multifamily	47%	Multifamily	42%	Multifamily	39%	Multifamily	45%	Multifamily		
Subareas															
			Detached SF		Detached SF		Detached SF		Detached SF		Detached SF		Detached SF		
			Attached SF		Attached SF		Attached SF		Attached SF		Attached SF		Attached SF		
North Triangle		100%	Multifamily	61%	Multifamily	100%	Multifamily	100%	Multifamily	100%	Multifamily	100%	Multifamily		
		60%	Detached SF	74%	Detached SF	70%	Detached SF	51%	Detached SF	42%	Detached SF	42%	Detached SF		
		8%	Attached SF	8%	Attached SF	8%	Attached SF	8%	Attached SF	6%	Attached SF	6%	Attached SF		
		32%	Multifamily	19%	Multifamily	22%	Multifamily	41%	Multifamily	52%	Multifamily	52%	Multifamily		
DSL Property		19%	Detached SF	45%	Detached SF	22%	Detached SF	2%	Detached SF	44%	Detached SF	12%	Detached SF		
		16%	Attached SF	15%	Attached SF	14%	Attached SF	98%	Attached SF	9%	Attached SF	20%	Attached SF		
		64%	Multifamily	40%	Multifamily	65%	Multifamily	98%	Multifamily	47%	Multifamily	68%	Multifamily		
		27%	Detached SF	32%	Detached SF	9%	Detached SF	2%	Detached SF	9%	Detached SF	9%	Detached SF		
The "Elbow"		15%	Attached SF	13%	Attached SF		Attached SF		Attached SF		Attached SF		Attached SF		
		58%	Multifamily	55%	Multifamily	91%	Multifamily	98%	Multifamily	91%	Multifamily	91%	Multifamily		
		75%	Detached SF	44%	Detached SF	3%	Detached SF	1%	Detached SF	69%	Detached SF	3%	Detached SF		
		10%	Attached SF	13%	Attached SF	0%	Attached SF	0%	Attached SF	9%	Attached SF	0%	Attached SF		
The "Thumb"		15%	Multifamily	43%	Multifamily	97%	Multifamily	99%	Multifamily	22%	Multifamily	97%	Multifamily		
		24%	Detached SF	32%	Detached SF	41%	Detached SF	N/A	Detached SF	N/A	Detached SF	50%	Detached SF		
		18%	Attached SF	19%	Attached SF	16%	Attached SF	N/A	Attached SF	N/A	Attached SF	16%	Attached SF		
		58%	Multifamily	49%	Multifamily	42%	Multifamily	N/A	Multifamily	N/A	Multifamily	34%	Multifamily		
West Area		N/A	Detached SF	N/A	Detached SF	60%	Detached SF	43%	Detached SF	N/A	Detached SF	N/A	Detached SF		
		N/A	Attached SF	N/A	Attached SF	23%	Attached SF	20%	Attached SF	N/A	Attached SF	N/A	Attached SF		
		N/A	Multifamily	N/A	Multifamily	17%	Multifamily	37%	Multifamily	N/A	Multifamily	N/A	Multifamily		
Shewlin Area		0%	Detached SF		Detached SF	28%	Detached SF	0%	Detached SF	48%	Detached SF	1%	Detached SF		
			Attached SF		Attached SF	10%	Attached SF		Attached SF	14%	Attached SF	10%	Attached SF		
			Multifamily		Multifamily	62%	Multifamily	100%	Multifamily		Multifamily	89%	Multifamily		
		58%	Detached SF	58%	Detached SF	58%	Detached SF	56%	Detached SF	56%	Detached SF	56%	Detached SF		
OB Riley / Gopher Gulch Area		8%	Attached SF	8%	Attached SF	8%	Attached SF	8%	Attached SF	8%	Attached SF	8%	Attached SF		
		34%	Multifamily	34%	Multifamily	34%	Multifamily	34%	Multifamily	34%	Multifamily	34%	Multifamily		
Existing UGB (if applicable)															
Overall Score		3	○	4	🟢	4	🟢	5	🟢	5	🟢	3	○		
		Most subareas are rated fair, but not well-balanced.			Most subareas well-balanced, one rated fair.			Most subareas well-balanced, two rated fair.			All subareas and the main SAA well-balanced.			The main SAA is well-balanced, though the residual areas are not (which is less important).	

For more information about this performance measure, see accompanying technical memorandum from Fregonese Associates.

Factor 3: ESEE Community Outcome C Strong Diverse Economy												Author: Andrew Parish	APG
Performance Measure 1												Date: 8/20/2015	
Site suitability for large lot industrial use													
Qualitative evaluation of the Large Lot Industrial Site location proposed in each scenario/supplemental map.													
Deschutes County Tax Lot Data, Rough slope data from Google Earth.													
All sites have positive and negative attributes.													
Interpretation and Key	Scenario 1.2		"Poor"	Scenario 2.1		Scenario 3.1		SAAM-1	SAAM-2	SAAM-3			
	"Good"	"Fair"		No Data		Not appropriate to rank							
Evaluation Geography	Subareas												
North Triangle													
NE Edge													
DSL Property													
The "Elbow"													
The "Thumb"													
West Area													
Shevlin Area													
OB Riley / Gopher Gulch Area													
Existing UGB (if applicable)	One large lot site assumed inside UGB at Juniper Ridge												
Overall Score	4	3	3	3	3	3	4	3	3	3	3		
	Each location has its pros and cons, detailed in the accompanying memorandum. The Employment TAC selected the DSL property as its preferred location.	Each location has its pros and cons, detailed in the accompanying memorandum.		Each location has its pros and cons, detailed in the accompanying memorandum.		Each location has its pros and cons, detailed in the accompanying memorandum. The Employment TAC selected the DSL property as its preferred location.		Each location has its pros and cons, detailed in the accompanying memorandum.		Each location has its pros and cons, detailed in the accompanying memorandum.		Each location has its pros and cons, detailed in the accompanying memorandum.	

For more information about this performance measure, see accompanying technical memorandum from APG.

Factor 3: ESEE Community Outcome C			Strong Diverse Economy			Author: Andrew Parish		APG						
Performance Measure 2			Site suitability for other industrial and mixed employment			Date: 8/25/2015								
Brief Description of Evaluation:			Comparison of site characteristics of the subarea with Table 15 and Table 16 in the Draft Economic Opportunity Analysis (EOA), which describe site characteristics needed by various industries.											
Data Sources			Deschutes County Assessor's Data, Draft EOA											
Interpretation and Key			Areas that meet the requirements of Tables 15 and 16 in the draft EOA are coded green. Areas that are somewhat outside of the recommendations of Tables 15 and 16 are coded yellow.											
			Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
Evaluation Geography			"Good"		"Fair"		"Poor"		No Data		Not appropriate to rank			
Subareas														
North Triangle	Parcel Size	10 ac - 40 ac	Parcel Size	10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	Parcel Size	10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac
	Site Size	1.100 ac site, 1.35 ac site	Site Size	1.50 ac site, 1.25 ac site	Site Size	2.50 ac sites, 1.80 ac site	Site Size	1.100 ac site, 1.35 ac site	Site Size	2.50 ac sites, 1.80 ac site	Site Size	2.50 ac sites, 1.80 ac site	Site Size	2.50 ac sites, 1.80 ac site
	Topography	Slopes below 5% overall	Topography	Residential within Expansion Area, rural residential uses to North, existing employment to South	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall
	Compatibility	Rural residential uses to North, existing employment to South	Compatibility		Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South
	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access		Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East
NE Edge	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac
	Site Size	1.10-ac site	Site Size	1.10-ac site	Site Size	1.10-ac site	Site Size	1.10-ac site	Site Size	1.10-ac site	Site Size	1.10-ac site	Site Size	1.10-ac site
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes
	Compatibility	Adjacent to planned residential areas	Compatibility		Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas
	Transportation Access	Code Rd, near Butler Market Rd	Transportation Access		Transportation Access	Code Rd, near Butler Market Rd	Transportation Access	Code Rd, near Butler Market Rd	Transportation Access	Code Rd, near Butler Market Rd	Transportation Access	Code Rd, near Butler Market Rd	Transportation Access	Code Rd, near Butler Market Rd
DSL Property	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel
	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site	Site Size	1.25-ac site, 1.50-ac site	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site	Site Size	1.18 ac site, 1.7-ac site, 1.50-ac site
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes
	Compatibility	Adjacent to employment/open space/public uses.	Compatibility	Adjacent to employment/open space/public uses. Also adjacent to planned residential to North.	Compatibility		Compatibility	Adjacent to employment/open space/public uses.	Compatibility	Adjacent to employment/open space/public uses.	Compatibility	Adjacent to employment/open space/public uses.	Compatibility	Adjacent to employment/open space/public uses.
	Transportation Access	Access to 27th / Knott	Transportation Access		Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott
The "Elbow"	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites
	Site Size	2.25-acre sites, 1.8-ac site	Site Size	4.40-plus acre sites, 1.8-ac site	Site Size	2.25-acre sites, 1.8-ac site	Site Size	2.25-acre sites, 1.8-ac site	Site Size	2.25-acre sites, 1.8-ac site	Site Size	2.25-acre sites, 1.8-ac site	Site Size	2.25-acre sites, 1.8-ac site
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes
	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas
	Transportation Access	Access to 27th / Knott	Transportation Access		Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott
The "Thumb"	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel
	Site Size	1.25-acre site, 1.75-acre site	Site Size	1.100-acre site and 1.20-acre site	Site Size	1.100-acre site	Site Size	1.25-acre site, 1.75-acre site	Site Size	1.100-acre site	Site Size	1.100-acre site	Site Size	1.100-acre site
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes
	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential	Compatibility	Adjacent to planned residential area	Compatibility	Adjacent to planned residential area	Compatibility	Adjacent to planned residential area	Compatibility	Adjacent to planned residential area	Compatibility	Adjacent to planned residential area
	Transportation Access	Access to Knott and Highway 97	Transportation Access		Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97
West Area	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel
	Site Size	20 acres	Site Size	20 acres	Site Size	20 acres	Site Size	20 acres	Site Size	20 acres	Site Size	20 acres	Site Size	20 acres
	Topography	Some topography	Topography	Adjacent to planned residential and school	Topography		Topography		Topography		Topography		Topography	
	Compatibility	Adjacent to planned residential and school	Compatibility		Compatibility		Compatibility		Compatibility		Compatibility		Compatibility	
	Transportation Access	Limited access to major roads	Transportation Access		Transportation Access	Limited access to major roads	Transportation Access		Transportation Access		Transportation Access		Transportation Access	
Shewin Area	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels
	Site Size	1.70-ac site, 1.40-ac site	Site Size	1.50-ac site, 2.20-ac sites	Site Size	2.40-ac sites, 1.30-ac site	Site Size	1.70-ac site, 1.40-ac site	Site Size	2.40-ac sites, 1.30-ac site	Site Size	2.40-ac sites, 1.30-ac site	Site Size	2.40-ac sites, 1.30-ac site
	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes
	Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to some planned residential, rural residential	Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to some planned residential, rural residential	Compatibility	Adjacent to some planned residential, rural residential	Compatibility	Adjacent to some planned residential, rural residential
	Transportation Access	Access to US 20	Transportation Access		Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20
Existing UGB (if applicable)			4		3		5		5		5		4	
Overall Score														
			Scenario 1.2 locates industrial and mixed employment uses in the North Triangle, along OB Riley, on the DSL Property, in the Elbow, in the Thumb, and a small portion in the NE Edge. These are all fairly good areas for this use under these criteria - the main reason it didn't receive a score of green is adjacency to residential areas in the North and in the NE Edge						Scenario 2.1 locates industrial and mixed employment uses in the North Triangle, along OB Riley, in the Elbow, and in the Thumb. These are all fairly good areas for this use under these criteria - the main reason this scenario received a green is that there are fewer areas of residential/industrial adjacency (and potential conflict) in the North and in the West Area					
			SAAM2 has similar arrangement of industrial land as Scenario 3.1, with similar amounts of residential adjacency.						SAAM1 has a similar arrangement of industrial land as Scenario 1.2, with somewhat less adjacency to residential areas.					
			SAAM3 has similar arrangement of industrial land as Scenario 3.1, with similar amounts of residential adjacency.						SAAM3 has similar arrangement of industrial land as Scenario 3.1, with similar amounts of residential adjacency.					

Factor 3: ESEE							Author: Andrew Parish		APG				
Community Outcome C		Strong Diverse Economy										Date: 8/25/2015	
Performance Measure 3		Site suitability of commercial uses											
Brief Description of Evaluation:		Comparison of site characteristics of the subarea with Table 15 and Table 16 in the Draft Economic Opportunity Analysis (EOA), which describe site characteristics needed by various industries.											
Data Sources		Deschutes County Assessor's Data, Draft EOA											
Interpretation and Key		Areas that meet the requirements of Tables 15 and 16 in the draft EOA are coded green. Areas that are somewhat outside of the recommendations of Tables 15 and 16 are coded yellow.											
		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank							
Evaluation Geography		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3	
Subareas													
North Triangle	Parcel Size	10 ac - 40 ac	Parcel Size	10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	Parcel Size	10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	Parcel Size	Some 1 ac - 10 ac, and 10 ac - 40 ac	
	Site Size	2 30-ac sites	Site Size	2 10-ac sites	Site Size	2 30-ac sites	Site Size	2 30-ac sites	Site Size	2 30-ac sites	Site Size	2 30-ac sites	
	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	Topography	Slopes below 5% overall	
	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Residential within Expansion Area, rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	Compatibility	Rural residential uses to North, existing employment to South	
	Visibility	Yes, > 10k ADT on Hwy 97, 500-5k ADT on Cooley	Visibility	Yes, > 10k ADT on Hwy 97, >5k ADT on Cooley	Visibility	Yes, > 10k ADT on Hwy 97, 500-5k act on Cooley	Visibility	Yes, > 10k ADT on Hwy 97, 500-5k ADT on Cooley	Visibility	Yes, > 10k ADT on Hwy 97, >5k ADT on Cooley	Visibility	Yes, > 10k ADT on Hwy 97, 500-5k ADT on Cooley	
	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	Transportation Access	Access to Cooley Rd to South, Highway 20 to West, Highway 97 to East	
	NE Edge	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac	Parcel Size	7-12 ac
Site Size	2 20-ac sites, 1 10-ac site	Site Size	1 20-ac site, 1 10-ac site	Site Size	1 20-ac site, 1 10-ac site	Site Size	2 20-ac sites, 1 10-ac site	Site Size	1 20-ac site, 1 10-ac site	Site Size	1 20-ac site, 1 10-ac site		
Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes
Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential areas
Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	>5k ADT on Eagle, > 10 on Butler Market Road,	Visibility	500-5000 ADT on Eagle, > 5000 on Butler Market
Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd	Transportation Access	Cole Rd, near Butler Market Rd
DSL Property	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	
	Site Size	1 40-ac site, 1 20-ac site	Site Size	1 40-ac site, 1 15-ac site	Site Size	1 40-ac site, 1 25-ac site	Site Size	1 18 ac site, 1 7-ac site, 1 50-ac site	Site Size	1 40-ac site, 1 20-ac site	Site Size	1 18 ac site, 1 7-ac site, 1 50-ac site	
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	
	Compatibility	Adjacent to employment/open space/public uses,	Compatibility	Adjacent to employment/open space/public uses,	Compatibility	Adjacent to employment/open space/public uses,	Compatibility	Adjacent to employment/open space/public uses,	Compatibility	Adjacent to employment/open space/public uses,	Compatibility	Adjacent to employment/open space/public uses,	
	Visibility	>10k ADT on both SE 27th and Reed Market at west of site,	Visibility	>10k ADT on both SE 27th and Reed Market at west of site, >5k ADT on Stevens Rd at North of site,	Visibility	>10k ADT on both SE 27th and Reed Market at west of site,	Visibility	>10k ADT on both SE 27th and Reed Market at west of site,	Visibility	>10k ADT on both SE 27th and Reed Market at west of site,	Visibility	>10k ADT on both SE 27th and Reed Market at west of site,	
	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	
	The "Elbow"	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites	Parcel Size	5-50 acre sites
Site Size	1 25-ac site, 1 30-ac site	Site Size	1 15-ac site, 1 12-ac site, 1 25-ac site, 1 20-ac site	Site Size	1 25-ac site, 1 30-ac site	Site Size	2 25-acre sites, 1 8-ac site	Site Size	1 25-ac site, 1 20-ac site	Site Size	1 25-ac site, 1 20-ac site		
Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes		
Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas	Compatibility	Adjacent to existing and planned residential areas		
Visibility	>10k ADT on Knott and 27th	Visibility	>10k ADT on Knott and 27th	Visibility	>10k ADT on 27th, >5k ADT on Knott	Visibility	>10k ADT on Knott and 27th	Visibility	>10k ADT on Knott and 27th	Visibility	>10k ADT on Knott and 27th		
Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott	Transportation Access	Access to 27th / Knott
The "Thumb"	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel	
	Site Size	1 130-ac site, a 7-ac site	Site Size	3 7-ac sites, 1 30-ac site	Site Size	1 35-ac site, 1 30-ac site	Site Size	1 7-ac site, 1 70-ac site, 1 55-ac site	Site Size	2 30-ac sites	Site Size	1 30-ac site, 1 65-ac site	
	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	Topography	Low slopes	
	Compatibility	Adjacent to planned residential areas	Compatibility	Adjacent to planned residential	Compatibility	Across China Hat Rd, from residential area	Compatibility	Across China Hat Rd, from residential area	Compatibility	Across China Hat Rd, from residential area	Compatibility	Across China Hat Rd, from residential area	
	Visibility	>10k ADT on Hwy 97, Knott, >5k ADT on China Hat, Knott, and new interior road,	Visibility	>10k ADT on Hwy 97, Knott, >5k ADT on China Hat and new interior road,	Visibility	>10k ADT on Hwy 97, >5k ADT on Knott, China Hat and new interior road,	Visibility	>10k ADT on Hwy 97 and China Hat, >5k on Knott,	Visibility	Yes>10k on Hwy 97, >5k on China Hat on Knott,	Visibility	>10k ADT on Hwy 97, China Hat, Knott, and new interior road,	
	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	Transportation Access	Access to Knott and Highway 97	
	West Area	Parcel Size	One large parcel	Parcel Size	One large parcel	Parcel Size	One large parcel			Parcel Size	One large parcel	Parcel Size	One large parcel
Site Size	1 15-ac site	Site Size	1 20-ac site	Site Size	1 15-ac site					Site Size	1 30-ac site	Site Size	1 30-ac site
Topography	Some topography	Topography	Some topography	Topography	Some topography					Topography	Some topography	Topography	Some topography
Compatibility	Adjacent to planned residential and school	Compatibility	Adjacent to planned residential and school	Compatibility	Adjacent to planned residential and school	Compatibility	Adjacent to planned residential and school			Compatibility	Adjacent to planned residential and school	Compatibility	Adjacent to planned residential and school
Visibility	<500 ADT on nearby roads	Visibility	>5k ADT on new connection, <500 adt on other roads	Visibility	10k ADT on new connection, <500 ADT on other roads	Visibility				Visibility	10k ADT on new connection, <500 ADT on other roads	Visibility	10k ADT on new connection, <500 ADT on other roads
Transportation Access	Limited access to major roads	Transportation Access	Limited access to major roads	Transportation Access	Limited access to major roads	Transportation Access	Limited access to major roads			Transportation Access	Limited access to major roads	Transportation Access	Limited access to major roads
Shevlin Area	Parcel Size		Parcel Size		Parcel Size	28 ac	Parcel Size	28 ac	Parcel Size		Parcel Size		
	Site Size		Site Size		Site Size	28 ac	Site Size	28 ac	Site Size		Site Size		
	Topography		Topography		Topography	Low slopes	Topography	Low slopes	Topography		Topography		
	Compatibility		Compatibility		Compatibility	Adjacent to existing and planned residential	Compatibility	Adjacent to existing and planned residential	Compatibility		Compatibility		
	Visibility		Visibility		Visibility	500 - 5k ADT	Visibility	<500 ADT	Visibility		Visibility		
	Transportation Access		Transportation Access		Transportation Access	Access on Shevlin Park Rd	Transportation Access	Access on Shevlin Park Rd	Transportation Access		Transportation Access		
	OB Riley / Gopher Gulch Area	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels	Parcel Size	5-35 ac parcels
Site Size	2 12-ac sites	Site Size	1 5-ac site, 1 10-ac sites, 1 35-ac site	Site Size	2 20-ac sites, 3 10-ac sites, 1 35-ac site	Site Size	2 12-ac sites	Site Size	2 20-ac sites, 1 10-ac site, 1 35-ac site	Site Size	2 20-ac sites, 1 10-ac site, 1 35-ac site		
Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes	Topography	Some slopes		
Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to some planned residential, rural residential	Compatibility	Adjacent to employment uses, rural residential	Compatibility	Adjacent to some planned residential, rural residential	Compatibility	Adjacent to some planned residential, rural residential		
Visibility	>10k ADT on Hwy 97	Visibility	>10k ADT on Hwy 97	Visibility	>10k ADT on Hwy 97 and southern portion of OB Riley	Visibility	>10k ADT on Hwy 97	Visibility	>10k ADT on Hwy 97	Visibility	>10k ADT on Hwy 97		
Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20	Transportation Access	Access to US 20		
Existing UGB (if applicable)													
Overall Score	4 🟢		5 🟢		4 🟢		4 🟢		5 🟢		5 🟢		
	Commercial uses in Scenario 1.2 are generally supported by the surrounding land uses and transportation network, with the possible exception of the commercial node in the West Area (which lacks pass-by traffic in that area)		Commercial uses in Scenario 2.1 are generally supported by the surrounding land uses and transportation network, with the possible exception of the commercial node in the West Area (which lacks pass-by traffic in that area, though it has a slightly greater amount than in Scenario 1.2)		Commercial uses in Scenario 3.1 are generally supported by the surrounding land uses and transportation network, with the possible exception of the commercial nodes in the West Area and Shevlin Area (which lack pass-by traffic in that area)		Commercial uses in SAAM 1 are generally supported by the surrounding land uses and transportation network, with the possible exception of the commercial node in the Shevlin Area (which lacks pass-by traffic in that area)		Commercial uses in SAAM 2 are generally supported by the surrounding land uses and transportation network.		Commercial uses in SAAM 3 are generally supported by the surrounding land uses and transportation network.		

Factor 4: Farm and Forest Compatibility													City of Bend		
Community Outcome A Farm and Forest Compatibility													Wendy		
Performance Measure 1													Author:		
Farm uses adjacent to expansion areas													Date:	10/1/2015	
Brief Description of Evaluation:															
Data Sources															
Deschutes County GIS, scenarios approved by USC, field check, etc.															
"Good" - property is not within 1/4 mile of farm land; "Fair" - within 1/4 mile of farm land with low impact (hay production less than 20 ac) farm uses; "Poor" - within 1/4 mile of farm land with active farm uses.															
Interpretation and Key															
Evaluation Geography	Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		SAAM-3				
	"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank										
Total Future UGB (Including Current UGB)	Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation				
Total Expansion Area (excluding current UGB)	3 commercial farms (one is a feed lot), several low impact hay fields		4 commercial farms (one is a feed lot)		5 commercial farms (one is a feed lot), several low impact hay fields		3 commercial farms (one is a feed lot), several low impact hay fields		7 commercial farms (one is a feed lot)		2 commercial farms (one is a feed lot)				
Subareas															
North Triangle	Good		Good		Good		Good		Good		Good				
NE Edge	1 commercial farm and several low impact hay fields within 1/4 mile		Good		1 commercial farm and several low impact hay fields within 1/4 mile		Good		Good		Good				
DSL Property	Good		North area along Bear Creek is adjacent to 2 low impact commercial farms		North area along Bear Creek is adjacent to 2 low impact commercial farms		Good		1 low impact Commercial farm within 1/4 mile		Good				
The "Elbow"	2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.		2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.		2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.		2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.		2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.		2 commercial farms within 1/4 mile, one which is an active operation that includes a feed lot for beef along Knott Rd.				
The "Thumb"	Good		Good		Good		Good		2 commercial farms within 1/4 mile of Woodside Road properties		Good				
West Area	Good		Good		Good		Not in Scenario		Not in Scenario		Good				
Shewlin Area	Not in Scenario		Not in Scenario		Good		Good		Not in Scenario		Not in Scenario				
OB Riley / Gopher Gulch Area	Good		Good		Good		Good		2 Commercial farms within 1/4 mile across canyon		Good				
Existing UGB (if applicable)	N/A		N/A		N/A		N/A		N/A		N/A				
Overall Score	3 ○		3 ○		2 🍷		3 ○		2 🍷		4 🍷				
	Good = 66% Fair = 17% Poor = 17%		Good = 66% Fair = 17% Poor = 17%		Good = 57% Fair = 29% Poor = 14%		Good = 71% Fair = 14.5% Poor = 14.5%		Good = 50% Fair = 33% Poor = 17%		Good = 83% Fair = 00% Poor = 17%				
For more information about this performance measure, see accompanying technical memorandum from City of Bend															

Factor 4: Farm and Forest Compatibility												
Community Outcome A		Farm and Forest Compatibility										
Performance Measure 2		Expansion onto land with Irrigation District deliveries										
Brief Description of Evaluation:		Number of parcels in each scenario that has an irrigation delivery by district and amount of water conveyed to those parcels										
Data Sources		Deschutes County GIS, scenarios approved by USC, field check, etc. Mapping provided by Andrew										
Interpretation and Key		The irrigation districts receive a fee for each delivery to cover O & M costs plus an assessment for the acre foot of water delivered. For small districts, a significant loss of deliveries due to UGB expansion can be detrimental to their operation and mean increased assessments for remaining water patrons. The fewer the deliveries and the lesser the amount of water conveyed per scenario per district, the better the ranking. Generally, impacts to over 20 ac ft of water were rated "Poor"; impacts to 1-20 ac ft of water were rated "Fair"; and areas with no irrigation district water were rated "Good". However, each district will experience a different degree of impact based on the amount of water conveyed and details of how that particular delivery affects other customers. Swalley irrigation uses a value of \$500/acre of water + the delivery assessment of \$560 per delivery. Each district's fees will vary based on a number of factors.										
		"Good"	"Fair"	"Poor"	No Data / Not Applicable	Not appropriate to rank						
		Scenario 1.2		Scenario 2.1		Scenario 3.1		SAAM-1		SAAM-2		
		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		Qualitative Evaluation		
Evaluation Geography	Total Future UGB (Including Current UGB)											
Total Expansion Area (excluding current UGB)		Swalley Total Loss: 16 deliveries / 78.71 ac ft Arnold Total Loss: 7 deliveries / 19.25-168.98 ac ft COID: # & amount of deliveries unknown		Swalley Total Loss: 16 deliveries / 78.71 ac ft Arnold Total Loss: 10 deliveries / 38-150 ac ft COID: # & amount of deliveries unknown		Swalley Total Loss: 70 deliveries / 207.64 ac ft Arnold Total Loss: 6 deliveries / 13.3-88.3 ac ft COID: # & amount of deliveries unknown		Swalley Total Loss: 23 deliveries / 100.97 ac ft Arnold Total Loss: 6 deliveries / 13.3-88.3 ac ft COID: # & amount of deliveries unknown		Swalley Total Loss: 76 deliveries / 337.04 ac ft Arnold Total Loss: 8 deliveries / 17.3-69.45 ac ft COID: # & amount of deliveries unknown		
		Swalley Total Loss: 35 deliveries / 97.7 ac ft Arnold Total Loss: 6 deliveries / 17.3-72.3 ac ft COID: # & amount of deliveries unknown										
Subareas												
North Triangle	Swalley - 16 / 78.71 ac ft*	Swalley -16/ 78.71*		Swalley - 35/ 97.71 ac ft*		Swalley - 16/ 78.71 ac ft*		Swalley - 35/ 97.71 ac ft*		Swalley - 35/ 97.71 ac ft*		
NE Edge	COID - # & amount of deliveries unknown	COID - # & amount of deliveries unknown		COID - # & amount of deliveries unknown		COID - # & amount of deliveries unknown		COID - # & amount of deliveries unknown		COID - # & amount of deliveries unknown		
DSL Property	No Irrigation Dist. Water	No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		
The "Elbow"	Arnold - 7/ 19.25 ac ft	Arnold -10 / 38 ac ft		Arnold - 6 / 17.3 ac ft		Arnold 6 / 13.3 ac ft		Arnold - 8 / 15.75 ac ft**		Arnold - 6 / 17.3 ac ft		
The "Thumb"	Arnold -1/ 149.73 ac ft**	Arnold - 1/ 112 ac ft**		Arnold 1 / 52.15 ac ft**		Arnold 1 / 75 ac ft**		Arnold - 1 / 52.15 ac ft**		Arnold - 1 / 55 ac ft**		
West Area	No Irrigation Dist. Water	No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		
Shewlin Area	No Irrigation Dist. Water	No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		No Irrigation Dist water		
OB Riley / Gopher Gulch Area	Swalley *	Swalley *		Swalley - 35 / 109.93 ac ft*		Swalley *		Swalley - 42/ 295.63 ac ft* (BMPRD water rights total 56.3 ac ft that would not be lost)		Swalley *		
Existing UGB (if applicable)	N/A	N/A		N/A		N/A		N/A		N/A		
Overall Score	4	3		2		3		1		3		
	Relatively limited northern expansion limits impacts to Swalley ID; uncertain impact to Arnold ID due to questions about future water rights on the Thumb	Relatively limited northern expansion limits impacts to Swalley ID; greater impact to Arnold ID from inclusion of full Elbow area		Greater north / northwest expansion increases impact to Swalley ID; limited south/southeast expansion reduces impact to Arnold ID		Expansion into outer NE Edge increases impact to Swalley ID; limited south/southeast expansion reduces impacts to Arnold ID		Focusing growth in north/northwest and extending into Gopher Gulch results in greatest impact to Swalley ID; inclusion of Woodside Road properties slightly increases impact to Arnold ID		Moderate amount of northern expansion causes moderate impacts to Swalley ID; limited south/southeast expansion reduces impact to Arnold ID		

For more information about this performance measure, see accompanying technical memorandum from City of Bend

* A portion of the OB Riley / Gopher Gulch area (between US 20 and OB Riley) was counted with the North Triangle in this analysis. At least 5 tax lots west of US 20 are included in the North Triangle numbers.

** The Thumb has a total water right of 149.73 acre ft. The use of this water is for the Back Nine Golf Course. Even if the Thumb were to develop, some or all of the water rights would likely continue to serve the golf course.

*** Includes 2 deliveries in the Woodside Road area, which is counted with "The Thumb" for other performance measures.

Factor 4: Farm and Forest Compatibility Community Outcome A Farm and Forest Compatibility									
Damian Symyk, AICP & Andrew Parish, AICP Author:		City of Bend Growth Management Angelo Planning Group							
Date: 9/9/2015									
Performance Measure 3		Proximity of proposed UGB to designated forest lands							
Brief Description of Evaluation:		Distance to designated forest lands and amount of land within 1/4 mile of designated forest land							
Data Sources		Deschutes County GIS, scenarios approved by USC							
Interpretation and Key		Those areas rated as Green are greater than one (1) mile from designated Forest lands. These areas about areas designated as rural residential exception lands on the Deschutes County Comprehensive Plan. Those areas rated as "Fair" are those that are within one (1) mile of Forest Lands. There may be intervening lands that are designated exception lands. Those areas rated as "Poor" but or are within one-quarter (1/4) mile of lands designated as Forest lands on the Deschutes County Comprehensive Plan.							
		"Good"	"Fair"	"Poor"	No Data	Not appropriate to rank			
Evaluation Geography		Scenario 1.2 Qualitative Evaluation		Scenario 2.1 Qualitative Evaluation		Scenario 3.1 Qualitative Evaluation		SAAM-1 Qualitative Evaluation	
Total Future UGB (Including Current UGB)								SAAM-2 Qualitative Evaluation	
Total Expansion Area (excluding current UGB)								SAAM-3 Qualitative Evaluation	
Subareas									
North Triangle NE Edge DSL Property The "Elbow" The "Thumb"		>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands
West Area		>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands
Shevlin Area		>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands
OB Riley / Gopher Gulch Area Existing UGB (if applicable)		>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands	>1 mile from forest lands
Overall Score		4	4	4	4	3	3	5	3
		All subareas over 1/4 mile from forest land; most over 1 mile	All subareas over 1/4 mile from forest land; most over 1 mile	All subareas over 1/4 mile from forest land; most over 1 mile	All subareas over 1/4 mile from forest land; most over 1 mile	This scenario has a small amount of expansion into areas within 1/4 mile of forest zones; most areas are over a mile from forest land	This scenario has a small amount of expansion into areas within 1/4 mile of forest zones; most areas are over a mile from forest land	All subareas over 1 mile from forest land	This scenario has a small amount of expansion into areas within 1/4 mile of forest zones; most areas are over a mile from forest land

For more information about this performance measure, see accompanying technical memoranda from City of Bend and Angelo Planning Group

APPENDIX C: PERFORMANCE MEASURE WEIGHTING EXAMPLES AND RESULTS

Index:

- Equally Weighted
- Lightly Weighted
- Heavily Weighted
- Focus on Difference-Makers

Weighting: Equally Weighted

Updated: 10/1/2015

Factor	Community Outcome	Performance Measure	Weighting*	Scenario 1.2	Scenario 2.1	Scenario 3.1	SAAM-1	SAAM-2	SAAM-3
Factor 1: Efficient accommodation of identified land needs									
<i>A. Complete Communities and Great Neighborhoods</i>									
		H 1		3.4	5.0	4.0	2.4	3.8	3.2
(1)	Housing units within walking distance of existing & planned schools in 2028	M 1		2	5	3	5	4	2
(2)	Housing units within walking distance of existing & planned parks and trails in 2028	L 1		5	5	5	4	5	5
(3)	Housing units within walking distance of commercial services in 2028	H 1		4	5	5	1	3	2
(4)	Jobs/housing balance (by subarea)	M 1		3	5	4	1	4	2
(5)	Opportunities for master planning	M 1		3	5	3	1	3	5
<i>B. Efficient, Timely Growth</i>									
		H 1		5.0	4.2	3.8	2.6	3.6	4.2
(1)	Total urbanized acres	L 1		5	4	4	3	4	5
(2)	Gross density for new housing in 2028	VH 1		5	5	3	1	4	5
(3)	net density for new jobs in 2028	L 1		5	5	5	5	5	5
(4)	percent of urbanized acres on parcels under 20 acres and contiguous to existing UGB	M 1		5	3	3	2	2	1
(5)	vacant vs. developed land included	L 1		5	4	4	2	3	5
Factor 2: Orderly and economic provision of public facilities and services									
<i>A. Balanced Transportation System</i>									
		H 1		3.1	3.7	3.0	2.9	2.5	3.1
(1)	Total VMT per capita	VH 1		2	3	3	2	2	2
(2)	Average trip length	M 1		2	5	4	2	2	3
(3)	Household VMT per capita	M 1		4	5	3	1	2	2
(4)	Congestion	H 1		4	3	2	5	3	4
(5)	walk/bike safety and connectivity	M 1		4	5	3	4	3	4
(6)	System connectivity & progression of system hierarchy	M 1		3	4	3	3	3	4
(7)	Mode split	M 1		3	3	3	3	2	3
(8)	Average weekly walk trips per capita	L 1		3	3	3	3	2	3
(9)	Proximity to transit corridors	M 1		3	3	3	3	3	3
(10)	Percent of housing and jobs within 1/4 mile of transit	L 1		3	3	3	3	3	3
(11)	Intersection density	M 1		3	2	2	3	3	3
<i>B. Cost Effective Infrastructure</i>									
		H 1		3.0	3.6	2.7	2.5	3.4	2.6
<i>Transportation Infrastructure</i>									
(1)	Total cost of transportation improvements required	VH 1		1	5	1	2	3	4
(2)	Cost per acre of transportation improvements	M 1		2	3	2	4	3	3
(3)	New linear miles of roadway	L 1		3	4	3	2	3	3
<i>Sanitary Sewer Infrastructure</i>									
(4)	Efficiency of additional sewer system improvements required	VH 1		4	3	3	2	2	1
(5)	Initial capital cost of sewer system improvements required	M 1		4	3	3	1	3	1
(6)	Initial capital cost of sewer system improvements per acre of development	M 1		3	4	3	2	2	1
<i>Drinking Water Infrastructure</i>									
(7)	Water system improvements required in city water district	L 1		5	5	4	4	5	5
(8)	Capacity of Avion Water system								
<i>Storm Water Infrastructure</i>									
(9)	Total impervious area for new development	L 1		4	4	3	3	3	4
(10)	Acres of new development with welded tuff geology	L 1		3	3	2	2	5	1
(11)	Acres of new development within DWPA	L 1		1	2	3	3	5	3
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)									
<i>A. Quality Natural Environment (Environmental and Energy Consequences)</i>									
		H 1		3.5	3.7	2.8	2.2	3.2	3.2
(1)	Development in wildlife areas	M 1		4	3	2	1	5	2
(2)	Linear distance of riparian areas adjacent to development	M 1		5	5	4	3	3	5
(3)	Wildfire hazard	H 1		3	3	2	2	3	3
(4)	Greenhouse gas emissions	L 1		3	4	3	2	2	3
(5)	Energy Use	L 1		3	3	3	3	3	3
(6)	Average Water Consumption per Household	L 1		3	4	3	2	3	3
<i>B. Housing Options and Affordability (Social Consequences)</i>									
		H 1		4.0	4.5	3.0	4.5	4.0	2.5
(1)	Average cost of new single family housing	VH 1		5	5	2	4	3	2
(2)	Housing mix of new housing (subarea balance)	L 1		3	4	4	5	5	3
<i>C. Strong Diverse Economy (Economic Consequences)</i>									
		H 1		4.0	3.7	4.0	4.3	4.3	4.0
(1)	site suitability for large lot industrial use	L 1		4	3	3	4	3	3
(2)	site suitability for areas identified for industrial uses	H 1		4	3	5	5	5	4
(3)	site suitability for areas identified for commercial uses	H 1		4	5	4	4	5	5
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occur									
<i>A. Compatibility with Farms and Forests</i>									
		H 1		3.7	3.3	2.3	3.0	2.7	3.3
(1)	Farm practices & high value farm land adjacent to expansion areas	H 1		3	3	2	3	2	4
(2)	impact to irrigation districts	M 1		4	3	2	3	1	3
(3)	Proximity of expansion areas to designated forest land	M 1		4	4	3	3	5	3
Overall				3.7	4.0	3.2	3.1	3.4	3.3

Key: H = High Importance; M = Moderate Importance; L = Low Importance; N = Excluded.

Very Good
 Good
 Fair
 Poor
 Very Poor

* Weighting for performance measures is relative to others within a single community outcome. Weighting for community outcomes is against other community outcomes. Weighting is provided as an example only and is subject to further refinement.

Weighting: Lightly Weighted

Updated: 10/1/2015

Factor	Community Outcome	Performance Measure	Weighting*	Scenario 1.2	Scenario 2.1	Scenario 3.1	SAAM-1	SAAM-2	SAAM-3						
Factor 1: Efficient accommodation of identified land needs															
A. Complete Communities and Great Neighborhoods			H 1	3.3	○	5.0	●	4.0	●	2.1	●	3.6	●	2.9	○
(1)	Housing units within walking distance of existing & planned schools in 2028	M 0.6	2	●	5	●	3	○	5	●	4	●	2	●	
(2)	Housing units within walking distance of existing & planned parks and trails in 2028	L 0.3	5	●	5	●	5	●	4	●	5	●	5	●	
(3)	Housing units within walking distance of commercial services in 2028	H 1	4	●	5	●	5	●	1	●	3	○	2	●	
(4)	Jobs/housing balance (by subarea)	M 0.6	3	○	5	●	4	●	1	●	4	●	2	●	
(5)	Opportunities for master planning	M 0.6	3	○	5	●	3	○	1	●	3	○	5	●	
B. Efficient, Timely Growth			H 1	5.0	●	4.5	●	3.3	○	1.8	●	3.7	●	4.3	●
(1)	Total urbanized acres	L 0.3	5	●	4	●	4	●	3	○	4	●	5	●	
(2)	Gross density for new housing in 2028	VH 2	5	●	5	●	3	○	1	●	4	●	5	●	
(3)	net density for new jobs in 2028	L 0.3	5	●	5	●	5	●	5	●	5	●	5	●	
(4)	percent of urbanized acres on parcels under 20 acres and contiguous to existing UGB	M 0.6	5	●	3	○	3	○	2	●	2	●	1	●	
(5)	vacant vs. developed land included	L 0.3	5	●	4	●	4	●	2	●	3	○	5	●	
Factor 2: Orderly and economic provision of public facilities and services															
A. Balanced Transportation System			H 1	2.9	○	3.6	●	2.9	○	2.8	○	2.4	●	2.9	○
(1)	Total VMT per capita	VH 2	2	●	3	○	3	○	2	●	2	●	2	●	
(2)	Average trip length	M 0.6	2	●	5	●	4	●	2	●	2	●	3	○	
(3)	Household VMT per capita	M 0.6	4	●	5	●	3	○	1	●	2	●	2	●	
(4)	Congestion	H 1	4	●	3	○	2	●	5	●	3	○	4	●	
(5)	walk/bike safety and connectivity	M 0.6	4	●	5	●	3	○	4	●	3	○	4	●	
(6)	System connectivity & progression of system hierarchy	M 0.6	3	○	4	●	3	○	3	○	3	○	4	●	
(7)	Mode split	M 0.6	3	○	3	○	3	○	3	○	2	●	3	○	
(8)	Average weekly walk trips per capita	L 0.3	3	○	3	○	3	○	3	○	2	●	3	○	
(9)	Proximity to transit corridors	M 0.6	3	○	3	○	3	○	3	○	3	○	3	○	
(10)	Percent of housing and jobs within 1/4 mile of transit	L 0.3	3	○	3	○	3	○	3	○	3	○	3	○	
(11)	Intersection density	M 0.6	3	○	2	●	2	●	3	○	3	○	3	○	
B. Cost Effective Infrastructure			H 1	2.8	○	3.8	●	2.4	●	2.2	●	2.9	○	2.4	●
Transportation Infrastructure															
(1)	Total cost of transportation improvements required	VH 2	1	●	5	●	1	●	2	●	3	○	4	●	
(2)	Cost per acre of transportation improvements	M 0.6	2	●	3	○	2	●	4	●	3	○	3	○	
(3)	New linear miles of roadway	L 0.3	3	○	4	●	3	○	2	●	3	○	3	○	
Sanitary Sewer Infrastructure															
(4)	Efficiency of additional sewer system improvements required	VH 2	4	●	3	○	3	○	2	●	2	●	1	●	
(5)	Initial capital cost of sewer system improvements required	M 0.6	4	●	3	○	3	○	1	●	3	○	1	●	
(6)	Initial capital cost of sewer system improvements per acre of development	M 0.6	3	○	4	●	3	○	2	●	2	●	1	●	
Drinking Water Infrastructure															
(7)	Water system improvements required in city water district	L 0.3	5	●	5	●	4	●	4	●	5	●	5	●	
(8)	Capacity of Avion Water system														
Storm Water Infrastructure															
(9)	Total impervious area for new development	L 0.3	4	●	4	●	3	○	3	○	3	○	4	●	
(10)	Acres of new development with welded tuff geology	L 0.3	3	○	3	○	2	●	2	●	5	●	1	●	
(11)	Acres of new development within DWPA	L 0.3	1	●	2	●	3	○	3	○	5	●	3	○	
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)															
A. Quality Natural Environment (Environmental and Energy Consequences)			H 1	3.6	●	3.6	●	2.7	○	2.1	●	3.3	○	3.2	○
(1)	Development in wildlife areas	M 0.6	4	●	3	○	2	●	1	●	5	●	2	●	
(2)	Linear distance of riparian areas adjacent to development	M 0.6	5	●	5	●	4	●	3	○	3	○	5	●	
(3)	Wildfire hazard	H 1	3	○	3	○	2	●	2	●	3	○	3	○	
(4)	Greenhouse gas emissions	L 0.3	3	○	4	●	3	○	2	●	2	●	3	○	
(5)	Energy Use	L 0.3	3	○	3	○	3	○	3	○	3	○	3	○	
(6)	Average Water Consumption per Household	L 0.3	3	○	4	●	3	○	2	●	3	○	3	○	
B. Housing Options and Affordability (Social Consequences)			H 1	4.7	●	4.9	●	2.3	●	4.1	●	3.3	○	2.1	●
(1)	Average cost of new single family housing	VH 2	5	●	5	●	2	●	4	●	3	○	2	●	
(2)	Housing mix of new housing (subarea balance)	L 0.3	3	○	4	●	4	●	5	●	5	●	3	○	
C. Strong Diverse Economy (Economic Consequences)			H 1	4.0	●	3.9	●	4.3	●	4.4	●	4.7	●	4.3	●
(1)	site suitability for large lot industrial use	L 0.3	4	●	3	○	3	○	4	●	3	○	3	○	
(2)	site suitability for areas identified for industrial uses	H 1	4	●	3	○	5	●	5	●	5	●	4	●	
(3)	site suitability for areas identified for commercial uses	H 1	4	●	5	●	4	●	4	●	5	●	5	●	
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occur															
A. Compatibility with Farms and Forests			H 1	3.5	●	3.3	○	2.3	●	3.0	○	2.5	○	3.5	○
(1)	Farm practices & high value farm land adjacent to expansion areas	H 1	3	○	3	○	2	●	3	○	2	●	4	●	
(2)	impact to irrigation districts	M 0.6	4	●	3	○	2	●	3	○	1	●	3	○	
(3)	Proximity of expansion areas to designated forest land	M 0.6	4	●	4	●	3	○	3	○	5	●	3	○	
Overall				3.7	●	4.1	●	3.0	○	2.8	○	3.3	○	3.2	○

Key: H = High Importance; M = Moderate Importance; L = Low Importance; N = Excluded.

● Very Good ● Good ○ Fair ● Poor ● Very Poor

* Weighting for performance measures is relative to others within a single community outcome. Weighting for community outcomes is against other community outcomes. Weighting is provided as an example only and is subject to further refinement.

Weighting: Heavily Weighted

Updated: 10/1/2015

Factor	Community Outcome	Performance Measure	Weighting*	Scenario 1.2	Scenario 2.1	Scenario 3.1	SAAM-1	SAAM-2	SAAM-3							
Factor 1: Efficient accommodation of identified land needs																
A. Complete Communities and Great Neighborhoods			H 1	3.3	○	5.0	●	4.0	●	1.9	●	3.5	○	2.7	○	
(1)	Housing units within walking distance of existing & planned schools in 2028		M 0.5	2	●	5	●	3	○	5	●	4	●	2	●	
(2)	Housing units within walking distance of existing & planned parks and trails in 2028		L 0.1	5	●	5	●	5	●	4	●	5	●	5	●	
(3)	Housing units within walking distance of commercial services in 2028		H 1	4	●	5	●	5	●	1	●	3	○	2	●	
(4)	Jobs/housing balance (by subarea)		M 0.5	3	○	5	●	4	●	1	●	4	●	2	●	
(5)	Opportunities for master planning		M 0.5	3	○	5	●	3	○	1	●	3	○	5	●	
B. Efficient, Timely Growth			H 1	5.0	●	4.7	●	3.1	○	1.3	●	3.7	●	4.5	●	
(1)	Total urbanized acres		L 0.1	5	●	4	●	4	●	3	○	4	●	5	●	
(2)	Gross density for new housing in 2028		VH 3	5	●	5	●	3	○	1	●	4	●	5	●	
(3)	net density for new jobs in 2028		L 0.1	5	●	5	●	5	●	5	●	5	●	5	●	
(4)	percent of urbanized acres on parcels under 20 acres and contiguous to existing UGB		M 0.5	5	●	3	○	3	○	2	●	2	●	1	●	
(5)	vacant vs. developed land included		L 0.1	5	●	4	●	4	●	2	●	3	○	5	●	
Factor 2: Orderly and economic provision of public facilities and services																
A. Balanced Transportation System			H 1	2.8	○	3.5	○	2.9	○	2.7	○	2.4	●	2.8	○	
(1)	Total VMT per capita		VH 3	2	●	3	○	3	○	2	●	2	●	2	●	
(2)	Average trip length		M 0.5	2	●	5	●	4	●	2	●	2	●	3	○	
(3)	Household VMT per capita		M 0.5	4	●	5	●	3	○	1	●	2	●	2	●	
(4)	Congestion		H 1	4	●	3	○	2	●	5	●	3	○	4	●	
(5)	walk/bike safety and connectivity		M 0.5	4	●	5	●	3	○	4	●	3	○	4	●	
(6)	System connectivity & progression of system hierarchy		M 0.5	3	○	4	●	3	○	3	○	3	○	4	●	
(7)	Mode split		M 0.5	3	○	3	○	3	○	3	○	2	●	3	○	
(8)	Average weekly walk trips per capita		L 0.1	3	○	3	○	3	○	3	○	2	●	3	○	
(9)	Proximity to transit corridors		M 0.5	3	○	3	○	3	○	3	○	3	○	3	○	
(10)	Percent of housing and jobs within 1/4 mile of transit		L 0.1	3	○	3	○	3	○	3	○	3	○	3	○	
(11)	Intersection density		M 0.5	3	○	2	●	2	●	3	○	3	○	3	○	
B. Cost Effective Infrastructure			H 1	2.6	○	3.9	●	2.2	●	2.1	●	2.6	○	2.4	●	
Transportation Infrastructure																
(1)	Total cost of transportation improvements required		VH 3	1	●	5	●	1	●	2	●	3	○	4	●	
(2)	Cost per acre of transportation improvements		M 0.5	2	●	3	○	2	●	4	●	3	○	3	○	
(3)	New linear miles of roadway		L 0.1	3	○	4	●	3	○	2	●	3	○	3	○	
Sanitary Sewer Infrastructure																
(4)	Efficiency of additional sewer system improvements required		VH 3	4	●	3	○	3	○	2	●	2	●	1	●	
(5)	Initial capital cost of sewer system improvements required		M 0.5	4	●	3	○	3	○	1	●	3	○	1	●	
(6)	Initial capital cost of sewer system improvements per acre of development		M 0.5	3	○	4	●	3	○	2	●	2	●	1	●	
Drinking Water Infrastructure																
(7)	Water system improvements required in city water district		L 0.1	5	●	5	●	4	●	4	●	5	●	5	●	
(8)	Capacity of Avion Water system															
Storm Water Infrastructure																
(9)	Total impervious area for new development		L 0.1	4	●	4	●	3	○	3	○	3	○	4	●	
(10)	Acres of new development with welded tuff geology		L 0.1	3	○	3	○	2	●	2	●	5	●	1	●	
(11)	Acres of new development within DWPA		L 0.1	1	●	2	●	3	○	3	○	5	●	3	○	
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)																
A. Quality Natural Environment (Environmental and Energy Consequences)			H 1	3.7	●	3.5	●	2.6	○	2.0	●	3.4	○	3.2	○	
(1)	Development in wildlife areas		M 0.5	4	●	3	○	2	●	1	●	5	●	2	●	
(2)	Linear distance of riparian areas adjacent to development		M 0.5	5	●	5	●	4	●	3	○	3	○	5	●	
(3)	Wildfire hazard		H 1	3	○	3	○	2	●	2	●	3	○	3	○	
(4)	Greenhouse gas emissions		L 0.1	3	○	4	●	3	○	2	●	2	●	3	○	
(5)	Energy Use		L 0.1	3	○	3	○	3	○	3	○	3	○	3	○	
(6)	Average Water Consumption per Household		L 0.1	3	○	4	●	3	○	2	●	3	○	3	○	
B. Housing Options and Affordability (Social Consequences)			H 1	4.9	●	5.0	●	2.1	●	4.0	●	3.1	○	2.0	●	
(1)	Average cost of new single family housing		VH 3	5	●	5	●	2	●	4	●	3	○	2	●	
(2)	Housing mix of new housing (subarea balance)		L 0.1	3	○	4	●	4	●	5	●	5	●	3	○	
C. Strong Diverse Economy (Economic Consequences)			H 1	4.0	●	4.0	●	4.4	●	4.5	●	4.9	●	4.4	●	
(1)	site suitability for large lot industrial use		L 0.1	4	●	3	○	3	○	4	●	3	○	3	○	
(2)	site suitability for areas identified for industrial uses		H 1	4	●	3	○	5	●	5	●	5	●	4	●	
(3)	site suitability for areas identified for commercial uses		H 1	4	●	5	●	4	●	4	●	5	●	5	●	
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occur																
A. Compatibility with Farms and Forests			H 1	3.5	●	3.3	○	2.3	●	3.0	○	2.5	○	3.5	●	
(1)	Farm practices & high value farm land adjacent to expansion areas		H 1	3	○	3	○	2	●	3	○	2	●	4	●	
(2)	impact to irrigation districts		M 0.5	4	●	3	○	2	●	3	○	1	●	3	○	
(3)	Proximity of expansion areas to designated forest land		M 0.5	4	●	4	●	3	○	3	○	5	●	3	○	
Overall					3.7	●	4.1	●	2.9	○	2.7	○	3.3	○	3.2	○

Key: H = High Importance; M = Moderate Importance; L = Low Importance; N = Excluded.

● Very Good ● Good ○ Fair ● Poor ● Very Poor

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Weighting: Focus on Difference-Makers

Updated: 10/1/2015

Factor	Community Outcome	Performance Measure	Weighting*	Scenario 1.2	Scenario 2.1	Scenario 3.1	SAAM-1	SAAM-2	SAAM-3
Factor 1: Efficient accommodation of identified land needs									
<i>A. Complete Communities and Great Neighborhoods</i>									
			H 1	3.7	5.0	4.6	1.3	3.2	2.2
(1)		Housing units within walking distance of existing & planned schools in 2028	M 0.1	2	5	3	5	4	2
(2)		Housing units within walking distance of existing & planned parks and trails in 2028	L 0	5	5	5	4	5	5
(3)		Housing units within walking distance of commercial services in 2028	H 1	4	5	5	1	3	2
(4)		Jobs/housing balance (by subarea)	M 0.1	3	5	4	1	4	2
(5)		Opportunities for master planning	M 0.1	3	5	3	1	3	5
<i>B. Efficient, Timely Growth</i>									
			H 1	5.0	5.0	3.0	1.0	4.0	5.0
(1)		Total urbanized acres	L 0	5	4	4	3	4	5
(2)		Gross density for new housing in 2028	VH 10	5	5	3	1	4	5
(3)		net density for new jobs in 2028	L 0	5	5	5	5	5	5
(4)		percent of urbanized acres on parcels under 20 acres and contiguous to existing UGB	M 0.1	5	3	3	2	2	1
(5)		vacant vs. developed land included	L 0	5	4	4	2	3	5
Factor 2: Orderly and economic provision of public facilities and services									
<i>A. Balanced Transportation System</i>									
			H 1	2.2	3.1	2.9	2.3	2.1	2.2
(1)		Total VMT per capita	VH 10	2	3	3	2	2	2
(2)		Average trip length	M 0.1	2	5	4	2	2	3
(3)		Household VMT per capita	M 0.1	4	5	3	1	2	2
(4)		Congestion	H 1	4	3	2	5	3	4
(5)		walk/bike safety and connectivity	M 0.1	4	5	3	4	3	4
(6)		System connectivity & progression of system hierarchy	M 0.1	3	4	3	3	3	4
(7)		Mode split	M 0.1	3	3	3	3	2	3
(8)		Average weekly walk trips per capita	L 0	3	3	3	3	2	3
(9)		Proximity to transit corridors	M 0.1	3	3	3	3	3	3
(10)		Percent of housing and jobs within 1/4 mile of transit	L 0	3	3	3	3	3	3
(11)		Intersection density	M 0.1	3	2	2	3	3	3
<i>B. Cost Effective Infrastructure</i>									
			H 1	2.5	4.0	2.0	2.0	2.5	2.5
<i>Transportation Infrastructure</i>									
(1)		Total cost of transportation improvements required	VH 10	1	5	1	2	3	4
(2)		Cost per acre of transportation improvements	M 0.1	2	3	2	4	3	3
(3)		New linear miles of roadway	L 0	3	4	3	2	3	3
<i>Sanitary Sewer Infrastructure</i>									
(4)		Efficiency of additional sewer system improvements required	VH 10	4	3	3	2	2	1
(5)		Initial capital cost of sewer system improvements required	M 0.1	4	3	3	1	3	1
(6)		Initial capital cost of sewer system improvements per acre of development	M 0.1	3	4	3	2	2	1
<i>Drinking Water Infrastructure</i>									
(7)		Water system improvements required in city water district	L 0	5	5	4	4	5	5
(8)		Capacity of Avion Water system							
<i>Storm Water Infrastructure</i>									
(9)		Total impervious area for new development	L 0	4	4	3	3	3	4
(10)		Acres of new development with welded tuff geology	L 0	3	3	2	2	5	1
(11)		Acres of new development within DWPA	L 0	1	2	3	3	5	3
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)									
<i>A. Quality Natural Environment (Environmental and Energy Consequences)</i>									
			H 1	3.3	3.2	2.2	2.0	3.2	3.1
(1)		Development in wildlife areas	M 0.1	4	3	2	1	5	2
(2)		Linear distance of riparian areas adjacent to development	M 0.1	5	5	4	3	3	5
(3)		Wildfire hazard	H 1	3	3	2	2	3	3
(4)		Greenhouse gas emissions	L 0	3	4	3	2	2	3
(5)		Energy Use	L 0	3	3	3	3	3	3
(6)		Average Water Consumption per Household	L 0	3	4	3	2	3	3
<i>B. Housing Options and Affordability (Social Consequences)</i>									
			H 1	5.0	5.0	2.0	4.0	3.0	2.0
(1)		Average cost of new single family housing	VH 10	5	5	2	4	3	2
(2)		Housing mix of new housing (subarea balance)	L 0	3	4	4	5	5	3
<i>C. Strong Diverse Economy (Economic Consequences)</i>									
			H 1	4.0	4.0	4.5	4.5	5.0	4.5
(1)		site suitability for large lot industrial use	L 0	4	3	3	4	3	3
(2)		site suitability for areas identified for industrial uses	H 1	4	3	5	5	5	4
(3)		site suitability for areas identified for commercial uses	H 1	4	5	4	4	5	5
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occur									
<i>A. Compatibility with Farms and Forests</i>									
			H 1	3.2	3.1	2.1	3.0	2.2	3.8
(1)		Farm practices & high value farm land adjacent to expansion areas	H 1	3	3	2	3	2	4
(2)		impact to irrigation districts	M 0.1	4	3	2	3	1	3
(3)		Proximity of expansion areas to designated forest land	M 0.1	4	4	3	3	5	3
Overall				3.6	4.0	2.9	2.5	3.1	3.2

Key: H = High Importance; M = Moderate Importance; L = Low Importance; N = Excluded.

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