7. UGB LOCATION

7.1. Introduction

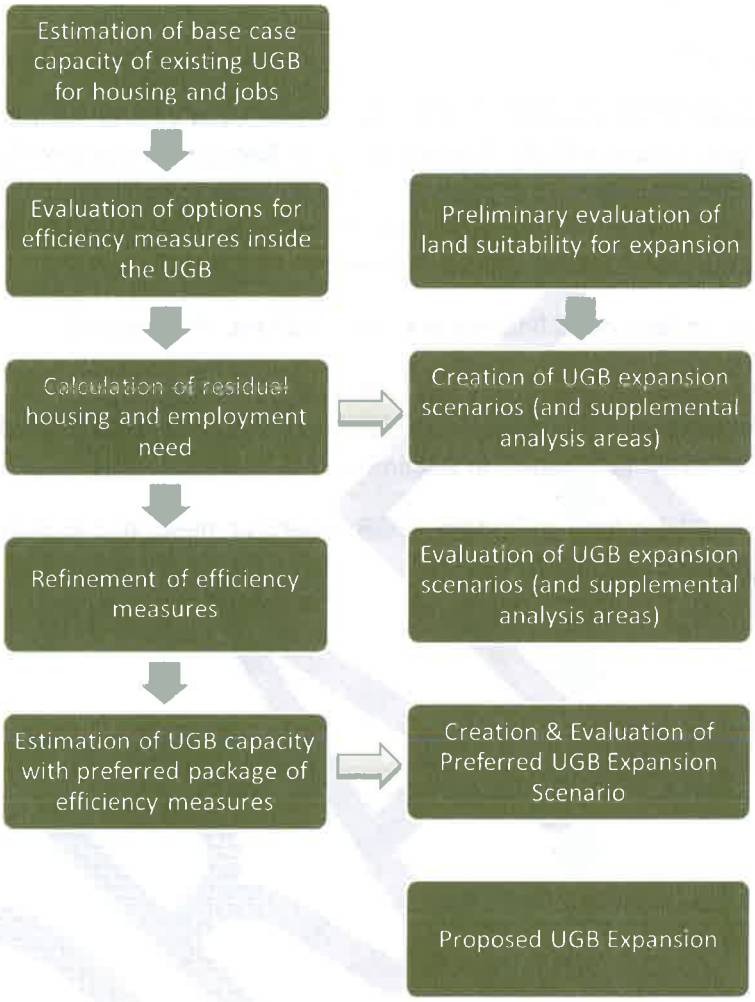
The findings in Section 7 address Bend's compliance with Goal 14 and related legal standards for the location of the proposed UGB. These findings in Section 7 document the process, steps, and rationale that Bend followed to: (1) establish a study area to evaluate land for inclusion in the UGB; and, (2) evaluate land in the study area for inclusion in the UGB based on statutory priorities and the boundary location factors of Goal 14.

Section 7 builds on the land need findings in earlier sections of this report:

- Findings for needed housing and residential land need in Section 4
- Findings for employment and economic development land need in Section 5
- Findings for "other" land needs in Section 6

The process of determining land sufficiency, UGB expansion need, and location of the UGB is summarized in Figure 7-1.

Figure 7-1: UGB Expansion Analysis Process Summary



7.2. Summary of Relevant Legal Standards

The findings in this section address the relevant legal standards that apply to Bend's determination of *where* to expand the UGB.

7.2.1. Applicability of Recent Amendments to Statute and Rule

OAR 660, Divison 24 has been amended several times since the City first began the process of expanding the UGB. Statutes pertaining to amendment of UGBs were also amended in 2013. This section addresses the applicability of these amendments to the current UGB expansion proposal.

The City initially provided notice of a UGB expansion proposal along with related amendments on October 8, 2008. The City adopted the proposal on January 5, 2009. The current proposal is a response to the LCDC Remand. As stated in the LCDC Remand, "the city's decision is

subject to the version of the commission's rules in effect at the time of its decision, unless the rules specifically provide otherwise."

OAR 660-024-0000 contains an applicability stating the applicable version of the rule is tied to the date a city initiates its UGB amendment. Under the rule, the date the City initiated its UGB amendment is the date it sent 45-day notice of the proposed amendment to the Department. The City initiated the UGB amendment on October 8, 2008. DLCD and the City agreed that the version of OAR 660-024 in effect on April 5, 2007 applies to the city's decision.[1]

Applicability of ORS 197A is addressed by Chapter 81 of Oregon Laws 2016, which states:

> *Notwithstanding ORS 197A.320, a city outside of Metro that submitted to the Director of the Department of Land Conservation and Development, pursuant to ORS 197.610, a proposed change to an acknowledged comprehensive plan or a land use regulation that included an evaluation or an amendment of its urban growth boundary, or that received approval of a periodic review work program that included a work task to amend or evaluate its urban growth boundary pursuant to ORS 197.633, prior to January 1, 2016, but did not complete the evaluation or amendment of its urban growth boundary prior to January 1, 2016, may complete the evaluation or amendment pursuant to statutes and administrative rules in effect on June 30, 2013.*

As stated above, the City submitted notice to DLCD on October 8, 2008. Therefore, the City may complete the amendment pursuant to the statutes and administrative rules in effect on April 5, 2007 because this version was in effect and pertained to the City's submittal to DLCD, and are also prior to June 30, 2013. This is the version that governs this UGB amendment.

7.2.2. Organization of Findings

In an effort to address all relevant legal standards and to "tell the compliance story" in a logical way, the findings are organized to follow the steps, priorities and requirements set out in ORS 197.298 (the version in effect on April 5, 2007) and OAR 660, Division 24 (the version of that was adopted by LCDC on 10/5/06; effective 4/5/07). Table 7-1 summarizes the organization of the findings and the relevant legal standards.

Table 7-1: Relevant Legal Standards

Section Heading in Findings	Applicable Oregon Revised Statutes (ORS)[2]	Applicable Statewide Planning Goal(s)	Applicable Oregon Administrative Rule(s) (OAR) [3]
7.4.1 Establishment of Preliminary Study Area		Goal 14	660-024-0060(4)

[1] Note, however, that the UGB study area and analysis satisfy the new Division 24 rules.

[2] Version in effect on April 5, 2007.

[3] Version adopted by LCDC on 10/5/06; effective 4/5/07.

Section Heading in Findings	Applicable Oregon Revised Statutes (ORS)[2]	Applicable Statewide Planning Goal(s)	Applicable Oregon Administrative Rule(s) (OAR) [3]
7.4.2 Land Excluded from Preliminary Study Area	197.298(3); 197.295	Goal 14	660-024-0060(1); 660-024-0050(5); 660-008-0005(2); 660-009-0005
7.4.3 Priority Categories	197.298	Goal 14	660-024-0060(1)
7.4.4 Evaluation of Land in the Study Area for Inclusion in the UGB		Goal 14	660-024-0060
7.4.5 Overall Conclusion Regarding UGB Location		Goal 14	

7.3. Substantial Evidence

Table 7-2 summarizes the key evidence that supports the findings in this section. Access to the record is available on the City's website for the UGB Remand Project.

Table 7-2: Key Record References

Description	Date	Page #
2011-2016 Record on Remand		*Record (Rem)*
2016 Urbanization Report	7/20/16	Rem Rec 10814
Scenario Evaluation Report & Technical Appendices	10/20/15	Rem Rec 4547, 6209, 6637, 6737, 6851
Scenario 2.1G Evaluation Technical Memos	7/20/16	Rem Rec.10183, 10223, 11201, 11223
Evidence supporting Refinements	4/26/2016	Rem Rec 9929, 9957, 9961, 9973 (see also Findings in Response to testimony)
Map of all alternatives evaluated in UGB location alternatives analysis	7/18/16	10874, 10875, 10877

7.4. Findings

7.4.1. Establishment of Preliminary Study Area

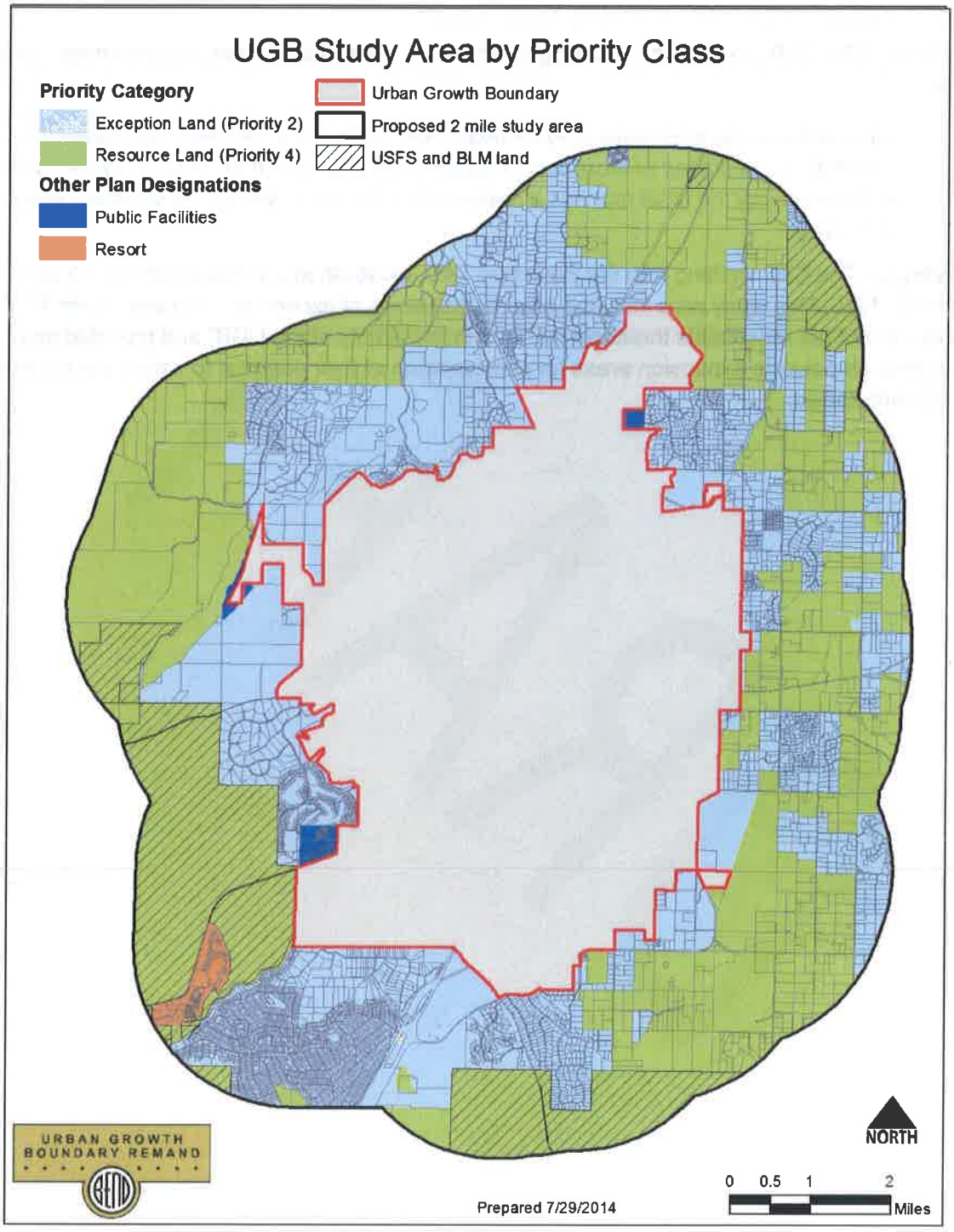
OAR 660-024-0060 provides the following guidance on the establishment of a preliminary study area:

> *(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.*

Findings: The City, working with the Boundary TAC, established a 2-mile study area from the existing UGB. This study area included over 18,000 acres of exception land (see Figure 7-2)[4]. It set a broad but reasonable threshold for "land in the vicinity of the UGB" and provided more than enough possible expansion areas for consideration of their potential to satisfy the identified need deficiencies.

[4] Exception land refers to land designated either Urban Reserve on the Bend Area General Plan map or Rural Residential Exception Area on the Deschutes County Comprehensive Plan map.

Figure 7-2: UGB Two-Mile Study Area by Priority Class



7.4.2. Land Excluded from Preliminary Study Area

OAR 660-024-0060(1) requires that local governments identify "suitable" land to meet need deficiencies, and provides the following guidance as to how to determine suitability:

> *(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 660-024-0050.*
>
> ...
>
> *(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.*

The suitability characteristics referenced in OAR 660-024-0050(5) include *"characteristics such as parcel size, topography, or proximity that are necessary for land to be suitable for an identified need."*

ORS 197.295 includes the following definition of "Buildable lands":

> *(1) "Buildable lands" means lands in urban and urbanizable areas that are suitable, available and necessary for residential uses. "Buildable lands" includes both vacant land and developed land likely to be redeveloped.*

Other provisions of law applicable in determining whether land is buildable or suitable include the definition of buildable land specific to residential land in OAR 660-008-0005(2):

> *(2) "Buildable Land" means residentially designated land within the urban growth boundary, including both vacant and developed land likely to be redeveloped, that is suitable, available and necessary for residential uses. Publicly owned land is generally not considered available for residential uses. Land is generally considered "suitable and available" unless it:*
>
> *(a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;*
>
> *(b) Is subject to natural resource protection measures determined under Statewide Planning Goals 5, 6, 15, 16, 17 or 18;*
>
> *(c) Has slopes of 25 percent or greater;*
>
> *(d) Is within the 100-year flood plain; or*
>
> *(e) Cannot be provided with public facilities.*

OAR 660-009-0005 provides the following definitions relevant to identifying suitable land for employment uses:

(12) "Suitable" means serviceable land designated for industrial or other employment use that provides, or can be expected to provide the appropriate site characteristics for the proposed use.

(9) "Serviceable" means the city or county has determined that public facilities and transportation facilities, as defined by OAR chapter 660, division 011 and division 012, currently have adequate capacity for development planned in the service area where the site is located or can be upgraded to have adequate capacity within the 20-year planning period.

(11) "Site Characteristics" means the attributes of a site necessary for a particular industrial or other employment use to operate. Site characteristics include, but are not limited to, a minimum acreage or site configuration including shape and topography, visibility, specific types or levels of public facilities, services or energy infrastructure, or proximity to a particular transportation or freight facility such as rail, marine ports and airports, multimodal freight or transshipment facilities, and major transportation routes.

In addition, ORS 197.298(3) provides several reasons why higher priority land may be found inadequate to meet identified needs:

(a) Specific types of identified land needs cannot be reasonably accommodated on higher priority lands;

(b) Future urban services could not reasonably be provided to the higher priority lands due to topographical or other physical constraints; ...

The Court of Appeals decision on the McMinnville UGB addressed the application of suitability screening criteria. In addition to the reasons listed in 197.298(3), the Court reasoned that Goal 14 Factor 3 (Comparative environmental, social, economic and energy consequences, or ESEE) and Factor 4 (Compatibility with nearby farm and forest activities), but not other Goal 14 Factors, are applied to determine whether higher priority land "is inadequate to accommodate the amount of land needed" under ORS 197.298(1).

In sum, the following factors can be applied to exclude higher priority lands from further consideration as candidate areas to include in the UGB:

- Lands that are not buildable (defined in OAR 660-008-0005(2))
- Lands that are not suitable for identified employment uses (defined in OAR 660-009-0005)
- Specific land needs (197.298(3)(a))
- Inability to reasonably provide urban services due to topographic or other physical constraints (197.298(3)(b))
- Analysis of ESEE consequences (Goal 14, Factor 3)
- Analysis of compatibility with agricultural & forest activities (Goal 14, Factor 4)

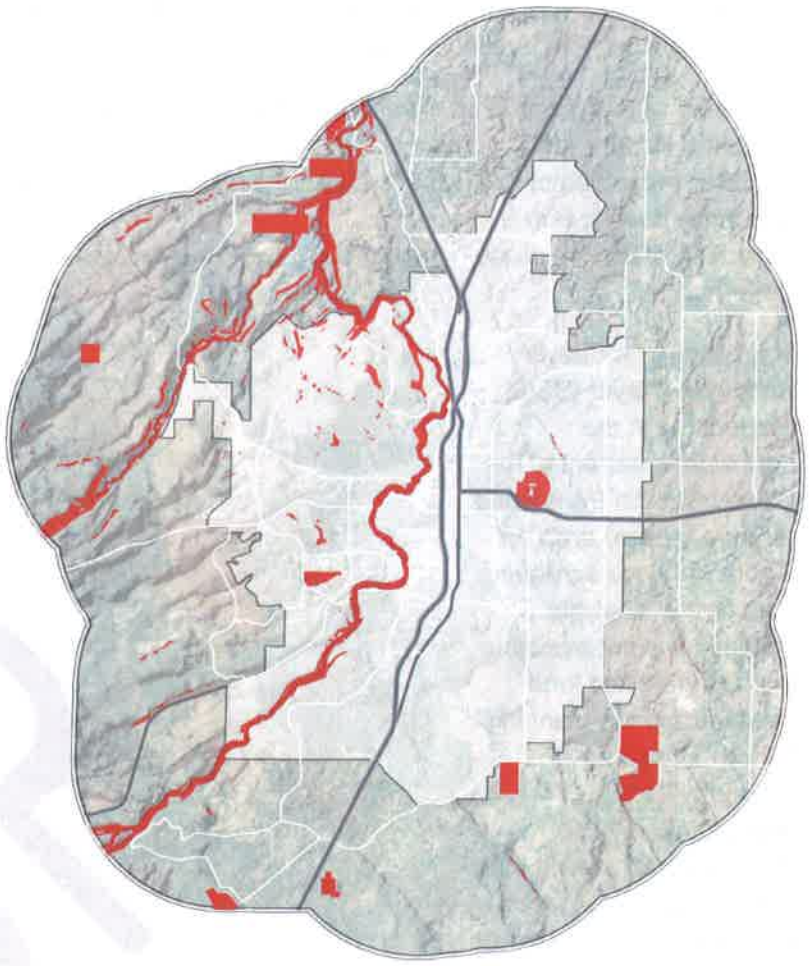
Findings: The City's approach to screening land from further consideration prior to applying the Goal 14 evaluation is summarized in the Urbanization Report (pages 49 through 50) [Rem Rec. 10863-10864]. The findings below draw on that summary.

7.4.2.1. Exclude lands that are not buildable

The following lands were identified as unbuildable:

- 100-year floodplain
- Steep slopes (25% and greater)
- Upper Deschutes River State & Federal Scenic River Overlays (100 feet from ordinary high water or OHW)
- Middle Deschutes State Scenic Waterway (100 feet from OHW)
- Deschutes River & Tumalo Creek Riparian Corridors (100 feet from OHW)
- Significant aggregate sites in Deschutes County Goal 5 inventory with Surface Mining plan designation

Figure 7-3: Unbuildable land in UGB Expansion Study Area



The 100-year floodplain and slopes of 25 percent or greater are listed explicitly in the exclusions contained within the definition of buildable land in OAR 660-008-0005(2). The scenic river overlays and riparian corridors as well as the significant aggregate sites in the Deschutes County inventory are subject to resource protection measures under Statewide Planning Goal 5, another listed exclusion from buildable land in OAR 660-008-0005(2).

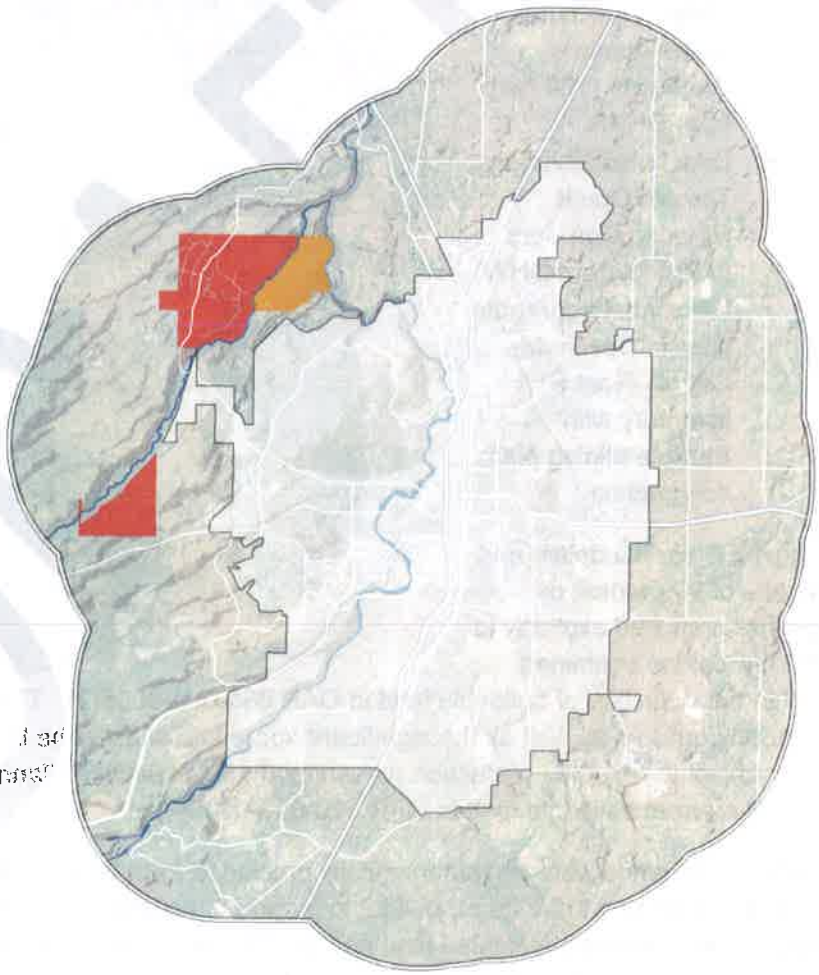
Unbuildable lands were not automatically precluded from being brought into the UGB (for example, when part of a larger buildable property); however, they are not considered suitable and available to meet identified land needs. The lands identified as unbuildable in the expansion areas are shown in red on Figure 7-3.

7.4.2.2. Exclude lands that are incompatible with urbanization

Exception lands within the acknowledged Deschutes County Wildlife Combining Zone (deer winter range) were screened from further analysis based on consideration of ESEE consequences (Goal 14, Factor 3) as allowed under the McMinnville decision as well as because they are subject to resource protection measures under Statewide Planning Goal 5, a listed exclusion from buildable land in OAR 660-008-0005(2).

These areas are considered significant habitat by ODFW. The Goal 5 "program" to protect the big game winter range is based in large part on restricting densities, requiring clustering and requiring protection of open space (50% of site). Potential urbanization of these lands would inherently conflict with protection of the big game winter range.

Figure 7-4: Land screened from consideration for UGB expansion



In addition, the Shevlin Sand and Gravel (SSG) site located in the northwest quadrant of the City on Shevlin Park Road (orange-colered area on Figure 7-4) was screened from further analysis because it is not available to meet identified land needs within the planning period. Based on testimony from the property owner representative stating that the aggregate resources at the Shevlin Sand & Gravel site are not expected to be exhausted and the site reclaimed during the planning period (2008-2028), the portion of the site under DOGAMI Permit 09-0018 was excluded from consideration for UGB expansion. This did not affect consideration of the remainder of the property.

The lands excluded are shown in red (wildlife overlay) and orange (aggregate site) on Figure 7-4.

7.4.2.3. Results and Conclusions

After excluding the lands listed above, the total acreage of exception land that was advanced for further consideration and evaluation using the Goal 14 factors was roughly 16,200 acres. No land was excluded on the basis of inability to reasonably provide urban services, specific land needs, or analysis of compatibility with agricultural and forest activities.

Conclusion: The land excluded from the preliminary study area is minimal, and the justifications are consistent with the allowed suitability criteria under OAR 660-024-0060; the definitions of buildable land under other state laws and administrative rules, including ORS 197.295; and the case law established in the McMinnville decision.

7.4.3. Priority Categories

ORS 197.298 identifies the following priorities for inclusion of land within an urban growth boundary:

> *(a) First priority is land that is designated urban reserve land under ORS 195.145 (Urban reserves), rule or metropolitan service district action plan.*
>
> *(b) If land under paragraph (a) of this subsection is inadequate to accommodate the amount of land needed, second priority is land adjacent to an urban growth boundary that is identified in an acknowledged comprehensive plan as an exception area or nonresource land. Second priority may include resource land that is completely surrounded by exception areas unless such resource land is high-value farmland as described in ORS 215.710 (High-value farmland description for ORS 215.705).*
>
> *(c) If land under paragraphs (a) and (b) of this subsection is inadequate to accommodate the amount of land needed, third priority is land designated as marginal land pursuant to ORS 197.247 (1991 Edition).*
>
> *(d) If land under paragraphs (a) to (c) of this subsection is inadequate to accommodate the amount of land needed, fourth priority is land designated in an acknowledged comprehensive plan for agriculture or forestry, or both.*

OAR 660-024-0060(1) echoes this process:

> *(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 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) through (c) of this section, a local government may consider land of lower priority as specified in ORS 197.298(3).

ORS 197.298(3), in addition to providing reasons why higher priority land may be found inadequate (see section 7.4.2), provides that land of a lower priority may be included in an urban growth boundary if:

(c) Maximum efficiency of land uses within a proposed urban growth boundary requires inclusion of lower priority lands in order to include or to provide services to higher priority lands.

Findings: Within the initial two-mile study area, evaluation was based on a tiered approach, in which higher priority lands (i.e. exception lands) were evaluated first for each identified land need, as required under OAR 660 Division 24 and ORS 197.298. There are no Priority 1 or Priority 3 lands in the study area, only Priority 2 and 4 lands. Only Priority 2 lands were considered and included in the expanded UGB. No lower priority lands (Priority 4) are included in the expanded UGB.

The amount of suitable exception land (Priority 2) exceeds the amount necessary to satisfy the need deficiency; therefore, the City applied the Goal 14 location factors to determine which land to include in the UGB, as described in the following section.

7.4.4. Evaluation of Land for Inclusion in the UGB

Statewide Planning Goal 14 (as amended April 28, 2005) requires the following:

The location of the urban growth boundary and changes to the boundary shall be determined by evaluating alternative boundary locations consistent with ORS 197.298 and with consideration of the following factors:

(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.

OAR 660-024-0060(1), (3), and (6) provide guidance on the evaluation of alternative boundary locations using the Goal 14 factors, including when they are applicable, how they relate to one another, and how parcels and areas may be grouped for evaluation:

(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: ...

(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.

...

(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.

(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.

OAR 660-024-0060(7) and (8) provide further guidance on the evaluation of public facilities and services in considering alternative boundary locations:

(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.

Findings: The creation and evaluation of UGB expansion alternatives represent "alternative boundary locations" required to be analyzed, and is summarized in the Urbanization Report, Chapter 5 [Rem Rec. 10863]. The findings in Section 7.4.4 draw on and include excerpts from that summary. It is important to note the requirements are focused on "alternative boundary locations" and the allowance that "parcels may be considered and evaluated as a single group." These requirements do not suggest or require a parcel-by-parcel analysis. A parcel-by-parcel (or smaller) analysis would be practically impossible given the amount of suitable land in the analysis area, and the nearly infinite number of possible combinations of individual parcels to meet anticipated needs. An additional complexity which makes a parcel-by-parcel analysis nearly impossible, is to consider the additional variations introduced due to the wide variety of

the types of land uses that must be analyzed to meet documented land needs. The city's methodology analyzed "alternative boundary locations" as required. The McMinnville decision verifies this approach, and even acknowledges the need to make revisions and refinements to the eventual proposed UGB expansion based on the results of analysis during the planning process.

7.4.4.1. Creating Alternative Boundaries

This stage of the analysis is described in the Urbanization Report (see pages 49-62) [Rem Rec.10814-10949]. The findings in this section draw on that portion of the Urbanization report.

Preliminary Goal 14 analysis – Indicators

Because the pool of available exception lands within the study area was so large relative to the land need, additional information was needed in order to identify better performing lands to consider for the UGB expansion alternatives analysis. It would not have been possible to develop alternatives to encompass all of the exception lands for evaluation. In the Base Mapping stage, the Boundary TAC recommended using a few key indicators of the Goal 14 factors to help identify the best land to include in boundary scenarios. This stage of analysis helped to narrow the scope of the study area to focus on the areas that ranked higher and also informed the development of scenarios.

Using available GIS and other data, a series of maps were prepared to illustrate the relative ranking of parcels based on the key indicators associated with each of the four factors of Goal 14. The Boundary TAC reviewed and suggested refinements to the base maps over a series of meetings, and ultimately approved roughly 25 base maps. The indicators included in Stage 2 Base Mapping for each of the goal 14 factors are listed below.

Factor 1: Efficient accommodation of identified land needs

- Parcel size
- Improvement to land value ratio
- Proximity to existing UGB – adjacency more efficient than edge of study area
- Topography (25% slopes or greater)
- Existing that CC&Rs prohibit or limit additional development

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

Transportation

- Barriers: Consideration of physical barriers to connectivity (new river crossings, railroad crossings, steep slopes, etc.).
- Reliance on Congested Corridors: Consideration of key congested highway corridors based on the recently completed Bend MPO MTP. Using the Bend 2040 travel demand model, identify which exception lands have a higher reliance on a congested corridor.
- System Connectivity: Consideration of whether the existing major roadway network meets ideal grid-spacing (e.g., one-mile spacing for arterials and half-mile spacing for collectors). Rank exception areas with a more subjective approach based on ability to

extend collectors into the study area. Also consider if subareas in the study area are adjacent or near well connected streets inside the current UGB.

Water

- Gravity system (City of Bend): Consideration of exception areas that could be served by gravity by City of Bend

Sewer

- Gravity system: Consideration of areas that can be served via gravity. This would be illustrated with a map showing areas in the study area that can be served with gravity sewer vs. areas requiring additional pumping.
- Maximize existing/planned improvements: Consideration of areas with capacity or planned short-term improvements. This would be illustrated with a map showing any areas in the study area outside the current UGB that could be served with sewer without major new investments in addition to planned facilities in the Collection System PFP.

Stormwater

- Drinking water protection areas: Consider proximity to drinking water protection areas (DWPA)
- Surface geology: Consider presence of surface geology (welded tuff) that limits on-site stormwater management.

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

- Presence of significant Goal 5 resources or other resources (consider Greenprint mapping or other data sources)
- Relative wildfire risk and presence of other natural hazards (floodplains)
- Proximity to existing or planned parks, trails, elementary schools
- Proximity to irrigation districts, irrigated lands and canals in study area
- Presence of water quality limited streams (303d) in study area

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

- Proximity to designated forest land
- Proximity to designated high-value agricultural land (irrigated)

The project team prepared one composite map for each of the four Goal 14 factors and a composite map combining indicators for all four factors. The approach was to prepare "un-weighted" composite maps, so the information was displayed without value judgments about what factors are more important than others. However, the Stage 2 Base Mapping revealed certain exception lands that were highly problematic based on one or more of the Goal 14 factors, and that, on balance, were not as ideal as other exception lands after a weighing and balancing the factors, as summarized below:

- Properties with recorded CC&Rs that preclude land divisions and additional dwellings (based on Factor 1 considerations and inability to accommodate identified land needs)
- Heavily parcelized areas with smaller parcels (less than 2 acres) and numerous dwellings that severely limit capacity for new development (based on Factor 1 considerations and inability to efficiently accommodate identified land needs)
- Rural residential subdivisions (generally less than 5 acre lots) with higher improvement to land value ratios that severely limit capacity for new development within the 2028 planning horizon (based on Factor 1 considerations and inability to efficiently accommodate identified land needs)
- Lands that are separated from the existing UGB by resource lands (based on Factor 4 considerations and impact to resource lands)

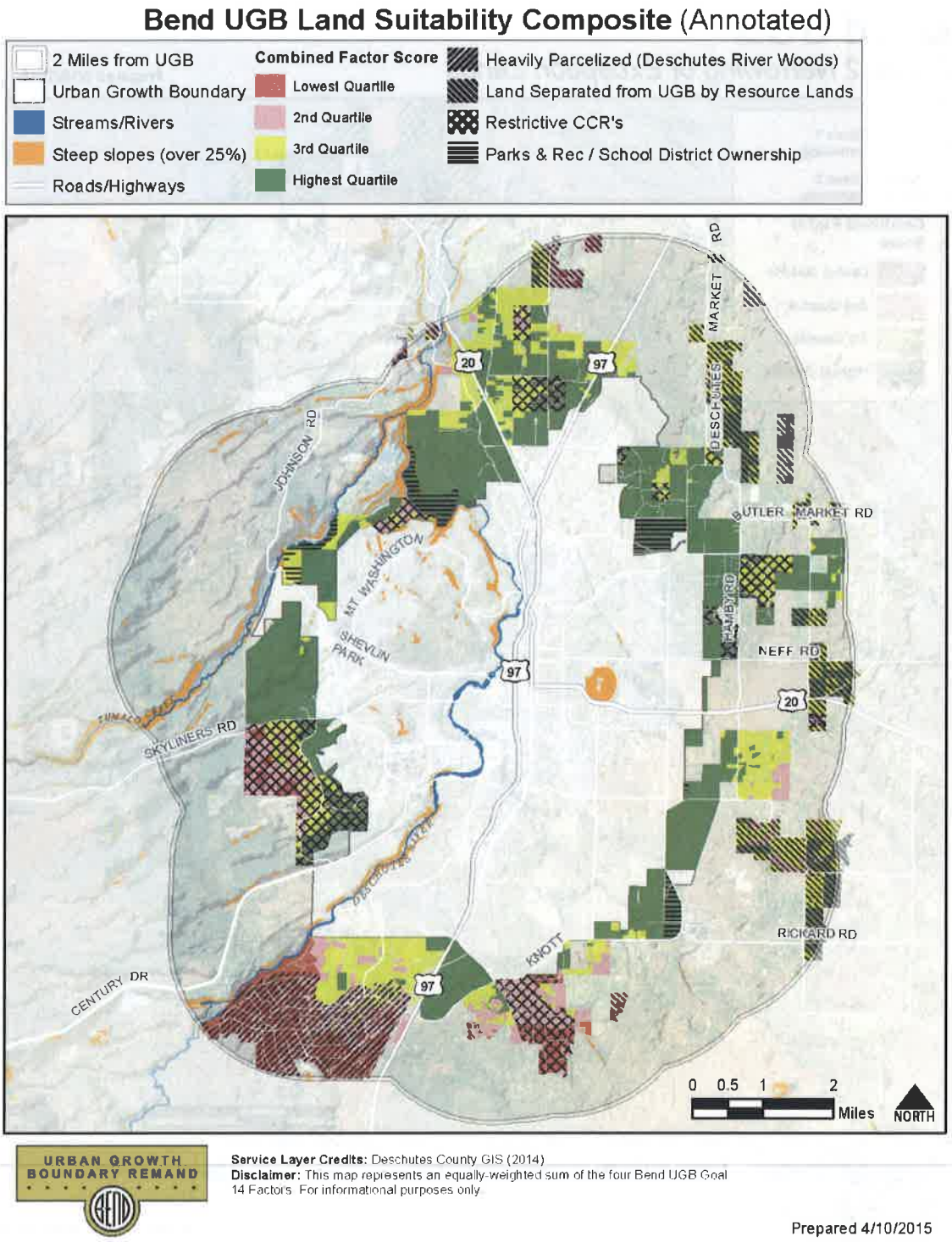
The combined results of the Stage 2 Base Mapping are shown on Figure 7-5.

Further consideration of the Stage 2 Base Mapping results in Phase 2 of the project highlighted additional areas that were, on balance, less appropriate to bring forward for further evaluation. The brief summaries below are keyed to specific locations on the map on Figure 7-6: Further Narrowing of Exception Lands.

1. A large rural residential exception area (just under 1,600 acres) located north of Cooley Road generally between Hwy 97 and Hwy 20. A relatively large rural residential subdivision (about 220 acres) with restrictive CC&R's is located at the southerly boundary of this area that represents a barrier to efficient expansion to the north.
2. Several small subdivisions in the northeast - the portion west of Hamby Road is subdivided into small lots (average lot size is a half-acre) with a relatively high improvement to land value ratio. The portion east of Hamby is separated from the UGB by a mix of land with restrictive CC&Rs and resource land.
3. An area located between Hwy 20 and Stevens Road surrounding Hamby Road that is relatively far from the UGB and would further surround zoned resource land.
4. Several large rural residential exception areas that overall did not score well based on the balancing of the Goal 14 factors.
5. A small area associated with common open space tracts for Cascade Highlands and Tetherow destination resort that should not be considered buildable or suitable for urbanization.
6. The portion of the Miller Tree Farm rural cluster subdivision property that was not screened out based on the County's wildlife overlay zone.

This left 5,400 remaining acres of exception land for further evaluation. See additional details regarding this aspect of the evaluation process, incorporated herein (Rem Rec 03743-03793).

Figure 7-5: Stage 2 Mapping Combined Results



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)
Disclaimer: This map represents an equally-weighted sum of the four Bend UGB Goal 14 Factors. For informational purposes only.

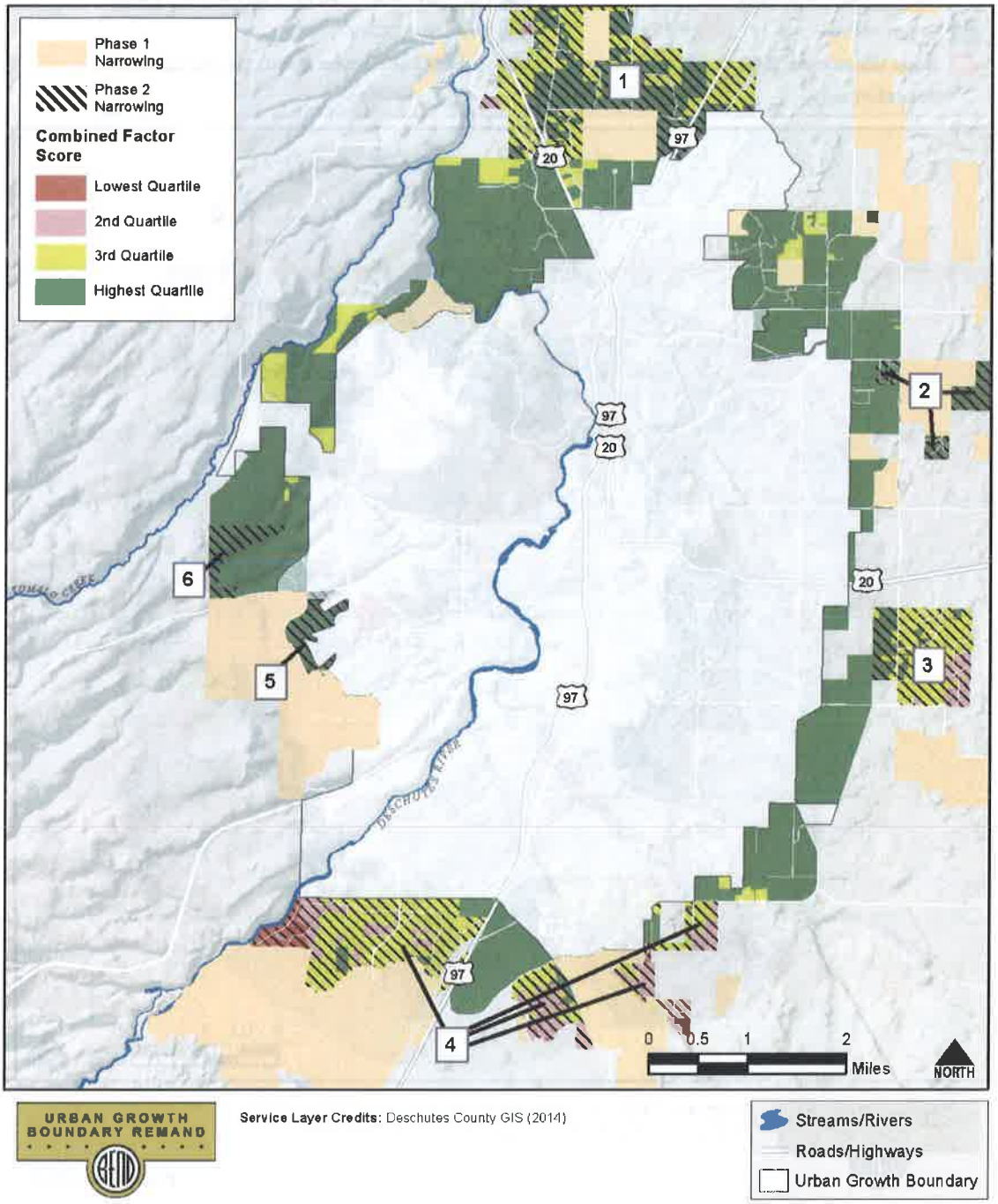
Prepared 4/10/2015

Figure 7-6: Further Narrowing of Exception Lands

Bend UGB

Phase 2 Narrowing of Exception Lands

Prepared 6/18/2015



Generating Alternatives for Analysis

Initially, three geographically specific UGB expansion scenarios to meet anticipated land needs were created based on input from all three TACs and the USC in a workshop (Rem Rec. 3811, 3843). These scenarios were brought to the Boundary TAC and USC for review and refinement[5]. 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 base map evaluation of exception land within the two-mile study area and had not been excluded by subsequent refinements and narrowing. The areas that met those tests and were not included in one of the three UGB Expansion Scenarios were identified as "Supplemental Analysis Areas".

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 were intended to test full utilization of certain geographic areas rather than distributed growth across a variety of potential expansion areas. The level of analysis for the SAAMs was identical to that done for the Scenarios.

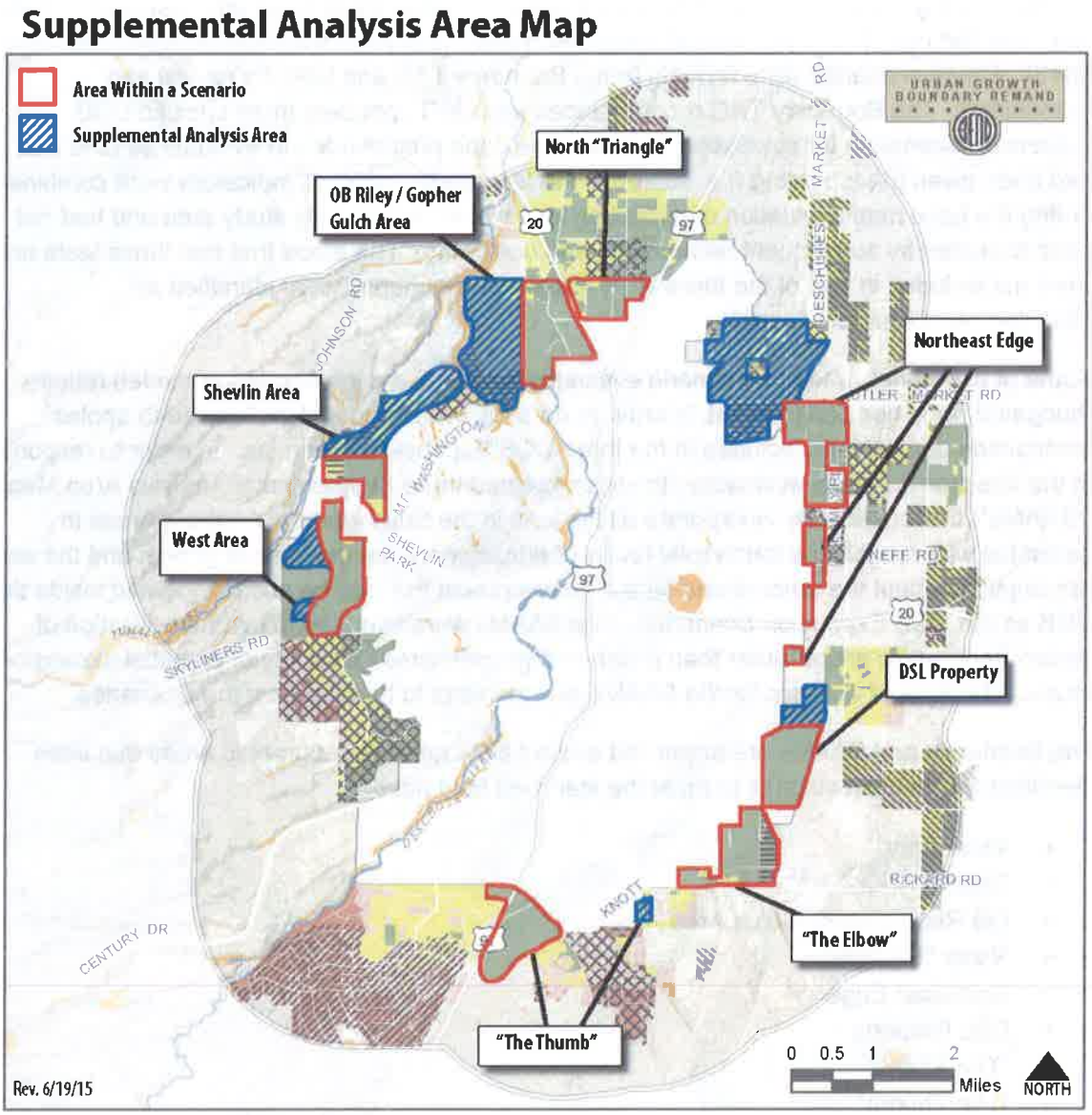
The Scenarios and SAAMs are organized around eight general geographic areas that were identified as the most suitable to meet the identified land needs:

- West Area
- Shevlin Area
- OB Riley/Gopher Gulch Area
- North "Triangle"
- Northeast Edge
- DSL Property
- "The Elbow"
- "The Thumb"

These subareas are shown on Figure 7-7. Figure 7-7 also identifies the portions that were included in scenarios and those that were part of the Supplemental Analysis Areas.

[5] See meeting minutes of June 24, 2015 Boundary TAC (Rem Rec. 6621) and June 25, 2015 USC meetings (Rem Rec. 5665).

Figure 7-7: Subareas, Scenario Areas, and Supplemental Analysis Areas

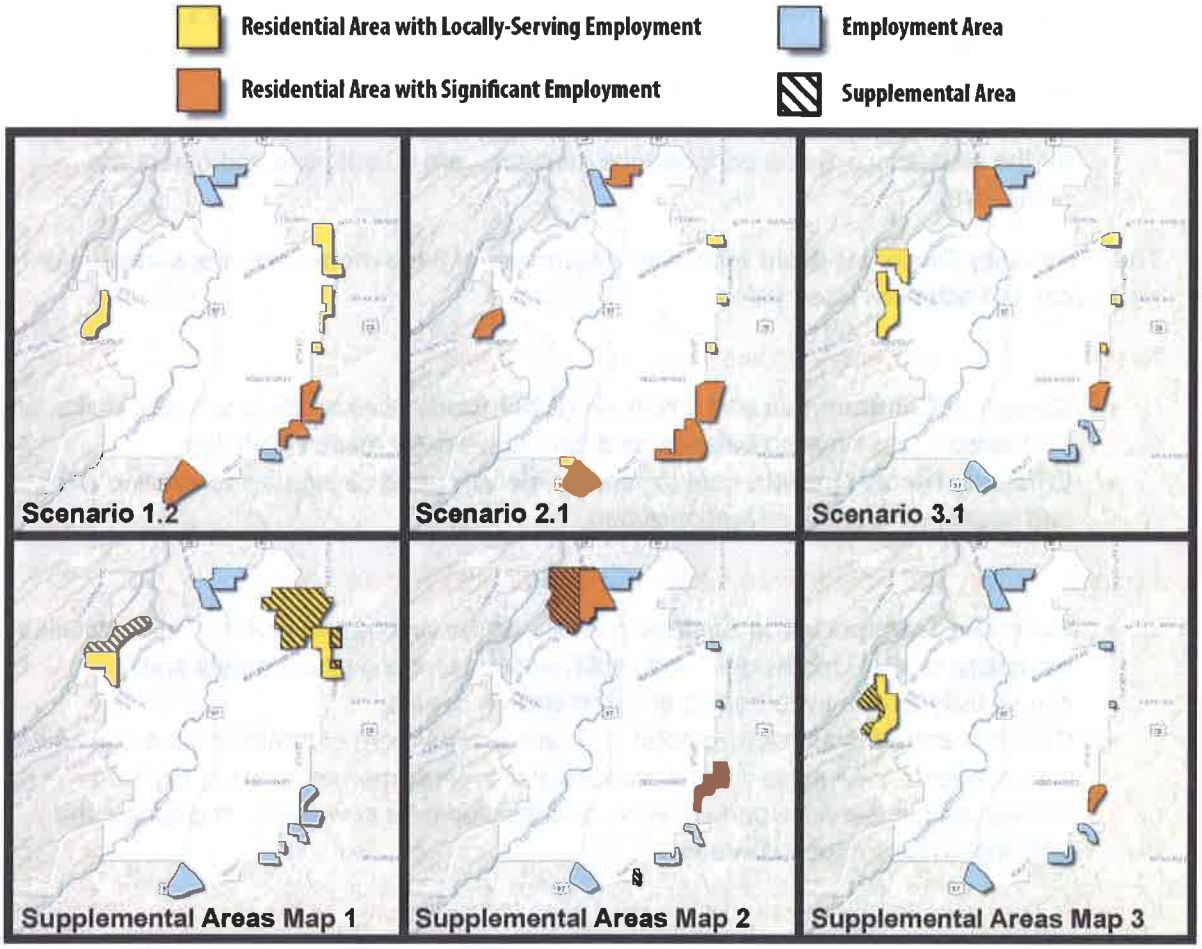


The UGB Expansion Scenarios and SAAMs are illustrated below. The categories shown on the generalized scenario maps are as follows:

- *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.

Figure 7-8: UGB Expansion Scenarios and SAAMs



The alternative areas evaluated in the boundary location alternatives analysis are mapped above, and described in greater detail in the Urbanization Report (see Pages 61-63) [Rem Rec. 10874] and in the Scenario Evaluation Report, dated October 20, 2015 (Pages 8-15) [Rem Rec4557-4564.

7.4.4.2. Operationalizing Goal 14 factors to Evaluate Alternatives

Overview

The approach to operationalizing the Goal 14 factors is summarized in the Urbanization Rrt (Pages 63-74) [Rem Rec. 10877-10888] and detailed in the Scenario Evaluation Report, dated October 20, 2015 (Pages 29 through 44) [Rem Rec 4578 to 4593. The findings in this section draw on the summary in the Urbanization Report.

The comparison, evaluation and balancing of Bend's UGB expansion alternatives was based on the following hierarchy of considerations:

- **Goal 14 Factors** – The legal requirements for what must be considered and balanced.
- **Community Outcomes** – Eight intended outcomes that reflect the city's goals for the project, articulate what the Goal 14 factors mean for Bend, and provide a way to summarize results for performance measures.
- **Performance Measures** – Detailed measures for each Goal 14 factor: the factual base for the evaluation. Some performance measures are quantitative and others are qualitative.

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

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

- **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

Costs, Advantages and Disadvantages for Public Facilities and Services

The evaluation of water, sanitary sewer, and transportation included evaluation of impacts to existing facilities that serve nearby areas already inside the UGB and capacity of existing public facilities and services to serve areas already inside the UGB as well as areas proposed for addition to the UGB, consistent with OAR 660-024-0060(8), because they included a city-wide analysis of needed improvements to existing facilities and need for new facilities in expansion areas.

Transportation

The transportation analysis was conducted in coordination with the Oregon Department of Transportation (ODOT) Transportation Planning Analysis Unit (TPAU) with input from other ODOT and DLCD staff. It utilized the Bend Metropolitan Planning Organization (MPO) regional travel demand model, which includes land use inputs for the entire future UGB (inside and outside the current UGB) as well as adjacent rural areas. It was used to identify impacts (in terms of congestion, expressed as volume to capacity or v/c ratio) to existing facilities and the need for new transportation facilities, including additional travel lanes and other major improvements to existing roadways. The transportation analysis also used recommended arterial and collector street spacing standards to identify the need for new arterial and collector roads in growth areas. The need for additional public transit service was considered as part of developing Bend's Integrated Land Use and Trasportation Plan [Rem Rec. 10994-11144]; however, no additional service was identified as needed by 2028 beyond the recent "mid-term" service expansion completed by Cascades East Transit in 2016. These demonstrate that cost, benefits, advantages, and disadvantages have been considered and balanced. This demonstrates that the transportation evaluation of UGB expansion alternatives satisfies OAR 660-024-0060(8).

Sanitary Sewer

Evaluation of sanitary sewer facilities and services needed to serve UGB expansion areas built on work completed in 2014 on the City's Collection System Master Plan (CSMP). Using a long-term optimization approach, the sewer evaluation identified the least-cost improvements consistent with the long-term infrastructure plan. The evaluation focused on assessing additional improvement alternatives not considered in the CSMP that are required to serve growth outside of the existing UGB and re-evaluating alternatives that were considered in the CSMP that are likely to be affected by expanding the UGB. The UGB expansion scenarios were rated for relative cost, based on improvements consistent with the long-term infrastructure analysis. (See October 1, 2015 memorandum titled "UGB Expansion – Sanitary Sewer Analysis" from Murray, Smith & Associates [Rem Rec. 6783].)

The Initial Capital Cost and Equivalent Uniform Annual Cost (EUAC) methods were used for comparing various alternatives in the optimization analysis. The Initial Capital Cost method estimates capital investment, but excludes operation and maintenance costs. The EUAC calculates the cost per year of constructing, operating and maintaining an asset over its entire lifespan. As noted previously the goal of the optimization is to minimize the overall life cycle

costs while identifying a solution that meets the identified hydraulic criteria. The EUAC approach allows for the comparison of different types of assets (e.g. lift stations, gravity mains, satellite treatment, etc) with varying design lives on an equivalent yearly basis. [Rem. Rec. 11201-11222]

These demonstrate that cost, benefits, advantages, and disadvantages have been considered and balanced. This demonstrates that the sanitary sewer evaluation of UGB expansion alternatives satisfies OAR 660-024-0060(8).

Drinking Water

Evaluation of drinking water facilities needed to serve UGB expansion areas built on work completed in 2011 on the City's Water System Master Plan. The evaluation considered the lowest available fire flow serving new growth through intermediate pressure zone expansion improvements, supply needed to offset storage requirements to serve new growth, and low pressure results of serving new growth using intermediate pressure zone expansion improvements. These factors were combined to provide an overall assessment of the water system infrastructure improvements needed to serve new growth.

In addition, development within Drinking Water Protection Areas was evaluated as a consideration of how alternative UGB expansion locations could impact existing groundwater facilities to serve nearby areas already inside the UGB.

This demonstrates that the water evaluation of UGB expansion alternatives satisfies OAR 660-024-0060(8).

Stormwater

Stormwater infrastructure impacts were evaluated through the lens of impervious surface area and geology. Impervious surface area associated with new development was estimated and compared using the Envision Tomorrow model. Geology – specifically, the presence of welded tuff formations – was also considered, because on-site retention and treatment are required in such areas rather than a community stormwater system.

This demonstrates that the stormwater evaluation of UGB expansion alternatives satisfies OAR 660-024-0060(8).

Weighing and Balancing

Not all performance measures identified equally important advantages or disadvantages. A handful of performance measures identified truly significant differences between the alternatives – differences that would meaningfully affect the community in 2028 and/or that are critical to meeting the legal requirements for this UGB expansion. These included residential land efficiency, total VMT per capita, transportation improvement costs, efficiency of sewer system improvements, and housing affordability. The project team evaluated overall results using both an equally-weighted and an unequally-weighted approach, including several variations of weighting. The different approaches to weighting were presented and considered by the Boundary TAC as well. 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 were weighted (see Scenario Evaluation Report for details).

7.4.4.3. Results of Alternatives Evaluation

The results of the alternatives evaluation are summarized in the Urbanization Report (Pages 75-82) [Rem Rec. 10889-10896] and in the Scenario Evaluation Report, dated October 20, 2015 (See Pages 29-34)[6]. An excerpt from these reports is provided below.

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.

[6] See Rem Rec 6637 for the complete report.

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 nothing 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). Its 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.

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.

Subarea Advantages and Disadvantages

This section provides a summary of findings from the evaluation on the key advantages and disadvantages of each subarea (those that are either inherent to the geography or that do not vary appreciably between the alternatives).

North Triangle

Key Advantages
- Cost-effective sewer
- Fairly close to existing transit
- Well-suited to commercial uses
- No commercial farms or forest lands nearby

Key Disadvantages
- Contributes to congestion on 97 & 20
- Canals create barriers
- Industrial / rural residential compatibility concerns
- Large format retail reduces attractiveness for housing
- Impacts Swalley Irrigation District
- New collector roads relatively costly

OB Riley / Gopher Gulch

Key Advantages

- Master planning opportunities (Gopher Gulch)
- Proximity to planned parks on west
- Eastern portion generally well-suited to industrial & commercial uses
- Close to transit on SE corner

Key Disadvantages

- Many developed parcels in south
- Connectivity limited in west
- Requires extension of major sewer line
- Wildfire hazard difficult to mitigate adjacent to river
- Impacts Swalley Irrigation District

Northeast Edge

Key Advantages

- Cost-effective sewer
- Well-suited to commercial uses adjacent to major roads
- Mid-size parcels, possibility for near-term development
- Housing affordability

Key Disadvantages

- Limited connectivity
- Canals create barriers
- Not near transit
- Some commercial farms nearby

DSL Property (& Darnell Estates)

Key Advantages

- Master-planning opportunity (DSL)
- No irrigation district impacts (DSL)
- Housing affordability
- Relatively close to transit
- Well-suited for commercial & employment uses along major roads (DSL)

Key Disadvantages

- Potential impacts to bat caves on DSL property
- Darnell Estates requires additional sewer extension – not cost-effective

The "Elbow"

Key Advantages

- Existing school & possible future park site
- Housing affordability
- Fairly well-suited to commercial and employment along 27th / Knott Rd.

Key Disadvantages

- Connectivity limited unless connection built from Rickard to 15th near Murphy
- New collector roads relatively costly
- Requires interim pump station for sewer
- Partially in Elk/Deer Range
- Farm adjacency, including feed lot along Knott Rd.
- Not near transit
- Impacts Arnold Irrigation District

The "Thumb" (& southwest area)

Key Advantages

Key Disadvantages

Key Advantages

- Master planning opportunities
- Housing affordability
- Well-suited to a wide range of uses (Ward)
- South end of US 97 relatively uncongested

Key Disadvantages

- Connectivity limited unless full collector system built from China Hat to Knott (highway & railroad barriers)
- Canal creates barriers
- Reliant on US 97
- Long average trip lengths
- Fully in Elk/Deer Range
- Impacts Arnold Irrigation District
- Drinking Water Protection Areas – concern for certain industrial uses

West Area

Key Advantages

- Master planning opportunities
- Relatively close to transit on eastern edge
- No irrigation district impacts

Key Disadvantages

- Largely welded tuff geology
- Entirely within Deer & Elk Winter Range
- Housing likely to be more expensive
- Limited suitability for industrial & commercial uses

Shevlin Area

Key Advantages

- Master planning opportunities
- Includes planned school site
- Relatively close to transit at SE corner
- Minimal congestion
- Proximity to existing/planned parks & trails
- No irrigation district impacts

Key Disadvantages

- Long trip lengths
- Difficult to build connected local streets
- Entirely within Deer & Elk Winter Range, largely within ODFW Areas of Potential Concern
- Housing likely to be more expensive
- Limited suitability for industrial & commercial uses
- NW edge adjacent to Tumalo Creek
- Outer portions may be difficult to reduce fire hazard
- Proximity to forest land in western corner

Scenario Evaluation Conclusion and Balancing

Based on the full alternatives evaluation, in considering and balancing the four Goal 14 Factors as required under Statewide Planning Goal 14 and OAR 660-024-0060, 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. It provided complete communities in all quadrants of the city; focused growth primarily on large, vacant

parcels; provided enhanced transportation connections; was fairly cost-effective for sewer infrastructure; avoided riparian areas; limited expansion in wildlife areas; avoided areas where topographic features prevent mitigation of wildfire risk; had good housing mix in nearly all subareas; and offered opportunities for relatively affordable housing with significant housing growth in the southeast.

No other alternative had as strong a performance on as many community outcomes, and each of the other alternatives has at least one important weakness identified through the evaluation, as documented in the Scenario Evaluation Report. As a result, the UGB Steering Committee selected Scenario 2.1 as the preferred scenario for further evalutation and refinement. The USC chose Scenario 2.1, in brief, to balance growth on both the east and the west sides of the city, reduce the traffic impact on the west, include the area referred to as the "Perfect Rectangle", and reduce the risk of wildfire on the west. The USC discussion also noted community survey results where Scenario 2.1 rated well in an online survey. [7]

7.4.4.4. Preferred Scenario Refinement Process

Overview

As stated above, Scenario 2.1 was selected as the starting point for creating a preferred scenario due to its performance in the alternatives evaluation. The refinement process addressed arrangement of land uses and changes to boundary location in certain subareas. It also included adjustments to assumptions about yield from efficiency measures and capacity of land inside the current UGB in order to ensure that these assumptions were "reasonably likely" to be implemented. The refinements included:

- removing small areas that performed poorly or would not be cost-effective to urbanize;
- refining the land uses within some sub-areas in order to address compatibility concerns and ensure an appropriate mix and intensity of uses in each area, given its context and the potential for additional future expansions that would build on the current expansion;
- distributing growth across more of the land in the west and northwest rather than relying on a single property owner in this area;
- consolidating growth in the northeast to a single larger block of land where a new complete community is possible rather than multiple small expansion areas;
- inclusion of park land as requested by the Park District in their testimony; and
- including specific properties that offered commitments to provide affordable housing, in order to ensure that housing will be available to meet the needs of residents at all income levels.

The Boundary TAC and USC provided input at multiple meetings, and directed refinements based on public testimony in the context of balancing the four Goal 14 factors. In considering whether to add land that was not included in Scenario 2.1, the USC, city staff, and consultant team considered whether the scenario evaluation provided evidence that a certain area

[7] See Rem Rec 5665 for the minutes of the October 22, 2015 meeting of the USC for their discussion and decision selecting Scenario 2.1.

performed better with the land in question included, and any public testimony providing new evidence of a compelling advantage of including the land. The USC, city staff, and consultant team also ensured that components of Scenario 2.1 that were essential to its strong performance in the scenario evaluation (e.g. emphasis on complete communities, strong growth in the southeast area of the city, and moderate amounts of expansion in the south, west, and northwest) were retained throughout the refinement process. The consideration of refinements was a balancing process where the USC considered whether project's scenario evaluations and public testimony supported inclusion of the refinement because it, on balance, was consistent with the Goal 14 factors and Community Outcomes.

Public Testimony and Response

The record includes a significant amount of public testimony that argued for several properties being included in the UGB. To summarize this testimony briefly, a number of property owners and/or their representatives argued for their property's inclusion in the UGB, their merits, and any feedback as to whether the process of evaluation was conducted in their view according to state law. Several pieces of testimony offered specific incentives and benefits for certain property being included in the UGB, including certain properties that would be part of a transect, several that offered the development of affordable housing, and several that argued for being included because they were included in a large group. The following findings respond to the public testimony directed at the boundary and the location analysis by area and subject. The City notes that the UGB project team provided responses to some of this testimony in Appendix E to the USC Meeting Packet for their June 25, 2015 meeting (Rem Rec. 8273). Appendix E is located at Rem Rec. 8335.

North

Overview of Refinements

The following refinements were made to Scenario 2.1 in the north area:

- land uses re-arranged and employment uses modified in the North Triangle subarea in order to provide compatibility with rural residential to the north;
- two properties initially removed from the North Triangle subarea in order to shift residential uses to other areas and balance land uses; one subsequently added back to the scenario based on a commitment to provide affordable/workforce housing;
- residential uses included in the OB Riley subarea in order to provide a more complete community and transition to adjacent rural residential uses;
- land uses re-arranged and employment uses modified in the OB Riley subarea in order to take advantage of visibility along Highway 20 for commercial uses.

Several property owners and interested parties submitted testimony regarding the North Triangle and/or OB Riley subareas.

<u>Carpenter Property</u>

- Bayard (Rem Rec. 9954)
- Barker (Rem Rec. 9955)

The neighborhood association to the North provided written and oral testimony regarding appropriate land uses on this property, raising concerns about compatibility of industrial uses, especially heavy / General Industrial uses, in this location with homes to the north.

Based on the testimony, the USC approved modifying the land uses on this property from General Industrial to a mix of residential, mixed employment, and light industrial for Scenario 2.1G.

Bell Property

- Colucci for the Golden Triangle Area Consortium (GTAC)/Bell (Rem Rec. 8379, 9961)
- Dickson (Rem Rec 6079, 6083, 9035)

This property was removed from the draft preferred scenario during part of the refinement process, in order to reduce development in the North Triangle overall and limit the amount of urban development abutting the rural residential neighborhood to the north. The property owner, along with several adjacent property owners in the North Triangle, provided written and oral testimony that the Bell property (tax lot 171208D0 TL 100) should be included in the preferred scenario[8].

GTAC/Bell/Colucci/Dickson proposed dedicating 25% of the minimum number of calibrated housing units for their area for affordable housing. The USC considered the additional social benefits of providing more land for affordable housing, along with this commitment of the property owers. Based on the testimony, the USC approved including the Bell property in the UGB for Scenario 2.1G.

Northeast

Overview of Refinements

The following refinements were made to Scenario 2.1 in the northeast area:

- Including the entire area referred to in testimony as either Butler Market Village or the Perfect Rectangle
- Including Rock Ridge and Pine Nursery Parks

Public Testimony and Response

Several property owners and interested parties submitted testimony regarding the Northeast subarea.

The Perfect Rectangle

- Murphy (Rem Rec. 4325, 5420)
- Lane (Rem Rec. 3917, 3921, 6156)
- Bend Metro Parks and Recreation District (Rem Rec. 4948, 4968)

[8] See oral testimony from Liz Dickson (Rem Rec 10150) and Ann Marie Colucci (Rem Rec. 10151) from April 21, 2016 USC Meeting. See also written testimony from Ann Marie Colucci at Rem Rec 9961.

Murphy and several other parties testified that a larger area in the northeast should be considered for UGB expansion. This particular area is referred to as either Butler Market Village or the Perfect Rectangle. The Boundary TAC and then the USC proposed including this area in Scenario 2.1 for analysis because of the many benefits it provided. These benefits included, but are not limited to, a large and relatively level area within which to master plan, a working group of property owners, the close proximity of public infrastructure (sewer), and the potential to mix land uses to achieve the needed housing mix and with jobs, schools, and parks. This area has been included in Scenario 2.1G as the Northeast and includes 465 total acres of which 222 acres are for housing, 22 acres for jobs, with another 196 acres of nearby park land that will be included in the UGB.

East/Southeast

Overview of Refinements

The following refinements were made to Scenario 2.1 to the East and Southeast:

- Inclusion of small fragment of Burns/Pacwest property on East Highway 20 for affordable housing
- reduction of size of large lot site on DSL
- refinement of land uses in Elbow to respond to testimony and promote compatibility
- swap of land uses between Elbow and Thumb Ward properties in response to testimony

Public Testimony and Response

Several property owners and interested parties submitted testimony regarding the East and Southeast.

Burns/Pacwest Property

- Hopp (Rem Rec. 3914, 8230, 9957)

Hopp/Burns/Pacwest proposed developing their entire property with multi-family housing, and targeting households earning 80% AMI. The USC included this property in the UGB for the social benefit of providing additional land for affordable housing, along with a commitment of the land owner to develop.

DSL Property

- Russell for DSL (Rem Rec. 4926)

The DSL representative testified requesting that the large lot industrial site designation on the property be limited to 50 acres (consistent with the Regional Large Lot Industrial Land provisions for Crook, Deschutes and Jefferson Counties in Oregon Administrative Rules, Chapter 660, Division 24), rather than 56 acres (as initially identified in the EOA). The USC included the entire portion of Section 11 (aka DSL property) in the UGB, and included one of the large lot industrial sites on this property, but reduced the designation to 50 acres as requested.

Ward Property

- Wise/Ward for JL Ward Company (Rem Rec. 4142, 5321, 6076)

The Ward Family provided testimony on their property in the Elbow and asked that 12.8 acres of residential from the Thumb be swapped with 12.8 acres of commercial. The USC approved this swap, with 12.8 acres of residential lands for housing added to the 15th Street/Elbow property outside the UGB and 12.8 acres of commercial land added to the Thumb.

South/Southwest

Overview of Refinements

The following refinements were made to Scenario 2.1 to the South and Southwest:

- swap of land uses between Elbow and Thumb Ward properties in response to testimony
- Baney property removed from scenario then brought back based on testimony and affordable housing commitment

Public Testimony and Response

Several property owners and interested parties submitted testimony regarding the South and the Southwest

Baney Property

- Baney/McMahon for Baney (Rem Rec. 3911, 9929)

Baney/McMahon were among a group of parties that testified before the USC at their April 21, 2016 meeting. Their testimony argued for including Baney's property on Rocking Horse Road in the UGB, and if included, the future development of this property would include a component of affordable housing. They proposed developing a mix of housing types on his property and ensuring 25% of the units would be made available for affordable housing. This testimony further clarified that this housing would be targeted for citizens earning $15.00 an hour, roughly $16,000 to $22,000 annually. This would correspond to 30% of area median income (AMI). Based on this testimony, previous analysis on the parcel showing its suitability plus the additional social benefit of providing affordable housing, the USC directed staff to include the Baney property in the preferred UGB Scenario.

Ward Property

- Wise/Ward for JL Ward Company (Rem Rec. 4142)

Wise/Ward provided testimony in support of including the "Thumb" in the UGB expansion, and the arrangement of land uses. The USC responded to this testimony by supporting the swap of land between the Ward property in the Thumb with the Ward property in the Elbow on 15th Street. More land for housing was provided in their opportunity area on 15th Street, and more land for employment and commercial services was allocated to the Thumb.

West / Northwest

Overview of Refinements

The following refinements were made to Scenario 2.1 to the West and Northwest:

- Including additional land in the West Area for the transect and for the extension of Skyline Ranch Road
- Including additional land in the West Area for development of affordable housing
- Including additional land on Shevlin Park Road for housing and a commercial node

Public Testimony and Response

Several property owners and interested parties submitted testimony regarding the West and the Northwest.

Day/Rio Lobo Property

- Conway (Rem Rec. 4861, 6095, 8221, 9973)

Day/Rio Lobo/Conway proposed dedicating 20% of their multi-family residential units for affordable housing, and further clarified that these units would be affordable based on the definition used in the Bend Development Code. The USC approved the addition of 40 acres of the Day/Rio Lobo property based on prior evaluation results and the social benefits associated with the designation of some of their property in the West Area to be dedicated for affordable housing, based on their testimony.

Coats Property

- Lewis (Rem Rec. 3926, 5352, 6204, 9942)

Lewis, on behalf of Coates, testified that the southern portion of the Coates property should be included in the UGB because it fills an existing "notch" between developed areas, improving connectivity in that area. The USC approved the inclusion of an additional 80 acres of the Coats (represented by Lewis) property for additional housing and for a small, commercial node on Shevlin Park Road.

West Area / Transect

- Miller (Rem Rec. 4094, 4933)
- Schueler (Rem Rec 4965)
- Schueler, Dewey, Swisher, Miller (Rem Rec 6070).
- Swisher (Rem Rec. 4937)

The Boundary and Growth Scenarios TAC heard testimony that proposed a boundary and land use concept for the West Area. The land use concept proposed a "transect" – the gradual reduction in residential densities as development moved closer to the boundary between the UGB and the undeveloped forest lands on Bend's west side. The Boundary TAC and USC both heard testimony on this proposal. The benefits articulated of including this area in the UGB included allowing for the extension of Skyline Ranch Road within the planning horizon, providing for cohesive wildlife corridors and wildfire mitigation strategies throughout the area, providing a gradual and appropriate transition to public park land to the west, and the area having ready access to necessary infrastructure . The proposal for the transect from Dewey, Miller, Schueler, and Swisher was presented to the Boundary TAC at their January 20, 2016 meeting (See meeting minutes at Rem Rec. 5965). The USC considered this proposal as well and directed staff to include it in the UGB scenario during their February 2016 meeting (See meeting minutes

at Rem Rec. 9209). This area is included in Scenario 2.1G. The proposed Growth Management Chapter includes policies that include housing mix for specific areas of development, areas designated for wildlife travel, and area within which fire mitigation treatments will take place (See Growth Management Chapter at Rem Rec 10362).

Goal 14 analysis: Why certain properties included, why others not included

- Colucci (Rem Rec. 8379)
- Conway (Rem Rec. 4861, 6095, 8221)
- Dickson (Rem Rec. 6079, 6083, 9035)
- Hopp (Rem Rec. 8230)
- Lewis (Rem Rec. 5352, 6204, 9942)
- UGB Team – Comment Log of Public Testimony (Rem Rec. 8335)

The City documented the process through which properties were evaluated for the UGB amendment in several resources, including the UGB Scenario Evaluation Report (Rem Rec. 6209), the Urbanization Report (Rem Rec. 9679), and the Findings in this section. The record includes testimony from a number of individuals and groups testifying in support of certain property being included, and testifying against property on the West side of Bend being included. The record does not include testimony that argues against expansion into other geographic directions (e.g. East or Southeast).

The City understands this testimony to argue that certain properties should have been included in the UGB, and because these properties were already adjacent to the UGB, could be served with infrastructure, and/or provided some benefit to the City.

State law (OAR 660-024, Goal 14, and ORS 197.298), governs how the City must go about determining land needs for urban uses, and then evaluating properties if a need has been shown for additional land. These laws include several key sideboards on the determination of whether a UGB expansion is needed and was properly evaluated.

Goal 14 outlines that the establishment and change of urban growth boundaries shall be based on a demonstrated need to accommodate long range urban population. This population is based on the coordinated population forecast Deschutes County adopted in 2004[9]. The population forecast for the City in 2028 is 115,063, and is based on the acknowledged population forecast of 109,389 for Bend in 2025. No evidence has been submitted to the record to cause the re-evaluation of this forecast and the consideration of another forecast that should be adopted and acknowledged in its place. This forecast, and the employment forecast in the EOA provided the bases upon which the land need estimates were developed. The City needed approximately 2,300 acres of land, and had to select this amount from 5,400 acres of land that performed the best against the performance measures.

The City has documented the process through which a study area was formed, properties were evaluated based on performance measures recommended by the Boundary TAC and approved

[9] The 2004 Coordinated Forecast Report is the 2009 UGB Record at Rec. 1980. The City and County coordinated on the development of the forecast between 2002 and 2004.

by the USC, and then organized into potential UGB expansion subareas. These same subareas were considered in different configurations in different scenarios before the USC recommended Scenario 2.1A as the scenario for which additional evaluation would be conducted. The USC then considered several potential versions of this scenario, before deciding on April 21, 2016 to forward Scenario 2.1G to a public hearing. State law (OAR 660-024-0060) does not require the City to prepare findings explaining how each property in a study area was rated, whether it was to be included in the UGB or not, with additional findings explaining why not. State law allows, the City chose, to consider larger geographic areas consisting of multiple properties to better allow needed housing and jobs in different configurations. State law also does not require the City to explain its decision of considering larger geographic areas instead of conducting a property by property comparison, which in this case is practically impossible given the amount of needed acres of expansion and numbers of parcels in the study area.

The City decided early in the process to focus the analysis of potential areas for expansion on those rural residential, exception, and non-resource lands that were considered Priority 2 lands under ORS 197.298(1)(b). This means that the City would not consider any lands designated as resource lands – those lands designated for agriculture or forest uses – under the Deschutes County Comprehensive Plan. None of these lands are included in the proposed UGB expansion. In Bend's case, there was more Priority 2 land than the City needed for UGB expansion, and the City used the Goal 14 factors to evaluate, weigh, and balance which areas would best meet the City's needs.

In October 2015, the USC directed the team to use Scenario 2.1, with certain changes of theirs, as the scenario to use for further infrastructure evaluation and refinement. This scenario went through multiple modifications between the Boundary TAC's next meeting on December 14, 2015, and the final version of Scenario 2.1 (2.1G), considered by the USC at their April 21, 2016 meeting. Each round of changes came at the direction of the Boundary TAC and/or the USC, none of which reflected a final decision on the boundary. The project team presented changes to the scenario at each public meeting based on factual information and policy direction (of the Boundary TAC and USC), and each committee received public comment at their respective meetings that included comment directed at changes to Scenario 2.1 and why they should or should not have been made.

Why certain adjustments were made

Transect

- Schueler (Rem Rec 4965)
- Schueler, Dewey, Swisher, Miller (Rem Rec 6070).

The Boundary and Growth Scenarios TAC heard testimony that proposed a boundary and transect for the West Area UGB expansion area. This proposal included the gradual reduction in residential densities as development moved closer to the boundary between the UGB and the forest lands on Bend's west side. The Boundary TAC and USC both heard testimony on this proposal. The proposal for the transect from Dewey, Miller, Schueler, and Swisher was

presented to the Boundary TAC at their January 20, 2016 meeting (See meeting minutes at Rem Rec. 5965). The USC considered this proposal as well and directed staff to include it in the UGB scenario during their February 2016 meeting (See meeting minutes at Rem Rec. 9209). This area is included in Scenario 2.1G. The proposed Growth Management Chapter includes policies that include housing mix for specific areas of development, areas designated for wildlife travel, and area within which fire mitigation treatments will take place (See Draft Growth Management Chapter at Rem Rec 9233).

Affordable Housing

- Baney, McMahon (Rem Rec ##) for Baney (Rem Rec. 9929)
- Conway (Rem Rec ##) for Rio Lobo (Rem Rec. 9973)
- Colucci (Rem Rec ##) for the Golden Triangle Area Consortium (GTAC)/Bell (Rem Rec. 9961)
- Hopp (Rem Rec ##) for Burns/Pacwest (Rem Rec. 9957)
- See also oral testimony from these parties in the April 21, 2016 USC Meeting Minutes (Rem Rec ##).

The above-listed parties testified at the April 21, 2016 USC meeting that either their or their clients' should be included in the UGB based on their individual proposals to provide what they described as affordable housing. In addition to these parties, both Paul Dewey and Elizabeth Dickson provided oral testimony that the City needed to do more to satisfy Goal 10, and that including this additional land was necessary for the development of affordable housing, and would assist the City in complying with Goal 10.

Baney/McMahon proposed developing multi-family units on his property and ensuring 25% of these multi-family units would be made available for work force housing. This testimony further clarified that this housing would be targeted for citizens earning $15.00 an hour, roughly $16,000 to $22,000 annually. This would correspond to 30% of area median income (AMI).

Day/Rio Lobo/Conway proposed dedicating 20% of their proposed multi-family residential units for affordable housing, and further clarified that these units would be affordable based on the definition used in Section 3.6.200(C) of the Bend Development Code.

GTAC/Bell/Colucci/Dickson proposed dedicating 25% of the minimum number of calibrated housing units for their area for affordable housing, targeting 30% of AMI with a recommended target of 80% owner occupancy.

Hopp/Burns/Pacwest proposed developing their entire property with multi-family housing, and targeting households earning 80% AMI.

The City has provided findings in Section 9 of this report addressing compliance with Statewide Planning Goal 10, Housing. The City has also provided findings explaining that these properties were included due to their commitments to provide affordable housing.

The City found, in Section 4 of the findings report, that the City's work has already satisfied Goal 10. To summarize briefly, the City's work on remand satisfies Goal 10 because the City has

inventoried buildable lands for housing, completed a housing needs analysis, proposed efficiency measures that would not only add capacity for housing in the current UGB, but for the purpose of providing additional zoned land for needed types of housing. In addition, the City's work complies with Goal 10 because the proposed UGB expansion provides the land needed for future population growth and has been plan designated so that housing is developed to help achieve the City's needed mix of 55% single family detached, 10% single family attached, and 35% multi-family housing.

The additional land to the UGB specifically for affordable housing helps secure needed housing at specific income levels. The City finds that while these additional lands will help the achieve its needed housing mix of 35% for multi-family, the benefit they provide is the provision of housing that will be affordable to those households earning 30% to 80% of AMI because this level of affordability will be provided through the implementation of Area Planning policies related to specific percentages of units being made affordable to specific income levels. The City also finds that these same areas have the added benefit of being located in areas that are close to jobs, schools, parks, and services.

The City has proposed policies in the draft Housing chapter of the Comprehensive Plan to ensure such housing is developed once these respective areas are in the UGB and annexed to the City.

Perfect Rectangle

- Murphy (Rem Rec 4325, 5420)
- Lane (Rem Rec. 3917, 3921, 6156).

Parties Murphy and several others testified that a larger area in the northeast should be considered for UGB expansion. This particular area is referred to as either Butler Market Village or the Perfect Rectangle. The Boundary TAC and then the USC proposed including this area in Scenario 2.1 for analysis because of the many benefits it provided. These benefits included, but are not limited to, a large and relatively level areas within which to master plan, a working group of property owners, the close proximity of public infrastructure (sewer), and the potential to mix land uses to achieve the needed housing mix and with jobs, schools, and parks. This area has been included in Scenario 2.1G as the Northeast and includes 465 total acres of which 222 acres are for housing, 22 acres for jobs, with another 196 acres of nearby park land that will be included in the UGB.

Public Process

- Smith (Rem Rec. 4958)
- Van Valkenburg (Rem Rec. 4963)
- Schueler (Rem Rec. 4965)
- Dewey (Rem Rec. 5311, 5313, 5315)

The City received a significant amount of testimony regarding the public process used to determine the UGB scenario between the USC's October 22, 2015 meeting and their December 14, 2015 meeting. The public process used to determine the UGB expansion, particularly the work of the Boundary and Growth Scenarios TAC that was approved by the USC, was the topic

of a number of pieces of public testimony. The testimony cited above is a sample of this testimony. The purpose of this finding is to better document the work of the Boundary TAC in both Phases 1 and 2, including how their work was approved and/or modified by the USC, to show that the steps taken to identify potential expansion areas and compare and contrast them occurred in an open and public process.

The Boundary TAC began Phase 1 of their work in August 2014. Between August 2014 and February 2015, the TAC met six times with the focus of their work to identify suitable lands for UGB expansion and to identify performance measures that would be used in Phase 2 for evaluating alternative UGB scenarios. The USC approved the recommendations of the Boundary TAC for Phase 1 at their March 19, 2015 meeting (Rem Rec. 3551; See 3/19/15 meeting minutes at Rem Rec. 8275).

The Boundary TAC began Phase 2 of their work in April 2015. During the spring of 2015, they also participated with the other TACs and the USC in the Boundary Workshop on April 30, 2015. From this meeting, the project team got feedback from the workshop on which areas to consider for UGB expansion of those areas identified as suitable for expansion in Phase 1.

During May and June of 2015, the Boundary TAC met and worked with the project team to develop several potential UGB expansion scenarios for evaluation, along with a supplemental analysis area (SAAM) map that the team used to arrange expansion areas into three additional scenarios. The Boundary TAC recommended these three scenarios and the SAAM to the USC at their June 24, 2015 meeting. The USC approved the slate of scenarios and SAAM for evaluation over the summer at their June 25, 2015 meeting (Rem Rec. 8273; see meeting minutes at Rem Rec. 5665).

During the months of July, August, and September the project team worked to evaluate the six (6) total scenarios against the performance measures approved in Phase 1. The team released the UGB Scenarios Evaluation Report (2015) and included it in the meeting packet of the Boundary TAC's October 8, 2015 meeting (Rem Rec. 6619). The materials provided to the Boundary TAC also included a transportation study (Rem Rec. 6851) and appendices that presented the results of the evaluation of the scenarios against all the performance measures (Rem Rec. 6737).

The Boundary TAC conducted two meetings in October of 2015 to review the scenario evaluation, and then make a recommendation on a final scenario to the USC for final evaluation. The TAC recommended a Scenario 2.3, Scenario 2.1 with several changes, to the USC at their second meeting on October 24, 2015. The USC considered this scenario at their meeting, held the same day on October 24, 2015, and made a difference decision to go forward with Scenario 2.1 along with several changes.

Between December 2015 and April 2016, the Boundary TAC and the USC met in different months to consider the final scenario, and potential changes to the boundary. Between the two committees, they held a total of six public meetings, with the Boundary TAC meeting twice in March. The two committees considered seven (7) different versions of Scenario 2.1 between December 2015 and April 2016. The Boundary TAC recommended Scenario 2.1F to the USC

at their March 30, 2016 meeting. The USC approved this scenario, along with several additions to the boundary, to develop Scenario 2.1G at their April 21, 2016.

The Boundary TAC held a total of eight (8) public meetings over Phase 2 of the Remand Project, during which they provided input to the project team and recommended UGB scenarios to the USC. Each meeting was publicly noticed, and public input was solicited at each meeting. The USC met five times over Phase 2, and like the Boundary TAC, asked for public input before making decisions and/or providing direction to the project team on the UGB scenario evaluation. These findings demonstrate the planning process and resulting proposed UGB expansion integrated citizen involvement, a factual basis, and applicable legal requirements.

7.4.4.5. Preferred Scenario Description

The preferred scenario is described and mapped in the Urbanization Report (82-101)[10]. The findings in this section draw on that summary.

The proposed 2016 UGB expansion (the "preferred scenario") is for a total of 2,380 acres:

- 1,142 gross acres of residential land (including land for future schools and future parks not yet in BPRD or school district ownership);
- 815 gross acres of employment land;
- 285 acres of land for public facilities currently in BPRD or school district ownership; and,
- 138 acres of existing right-of-way within and fronting UGB expansion areas, needed to provide urban street improvements to support growth in the expansion areas.

Like previous expansion scenarios, the preferred scenario focuses future growth in opportunity areas within the existing UGB and in new complete communities in expansion areas. Nearly all expansion areas include a mix of housing, employment areas, shopping/services, and schools and parks. A "transect" concept in the West Area reduces the density of development near the west edge of the city in recognition of the natural resources and open spaces to the west.

[10] See Rem Rec 10896-10915.

Figure 7-9: Preferred UGB Expansion Scenario

Preferred Urban Growth Boundary Expansion: Scenario 2.1G

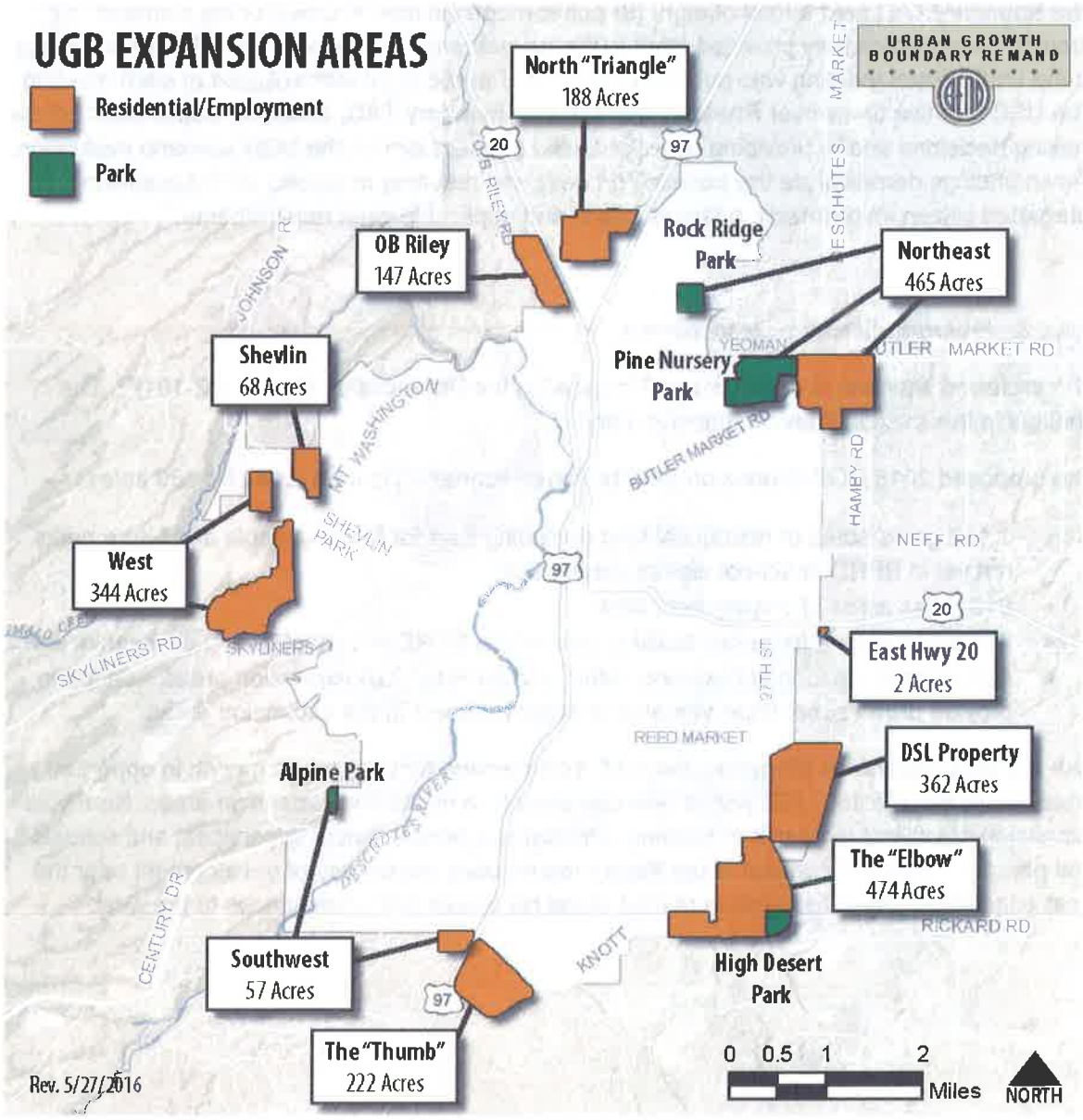


Figure 7-10: Proposed Comprehensive Plan Designations

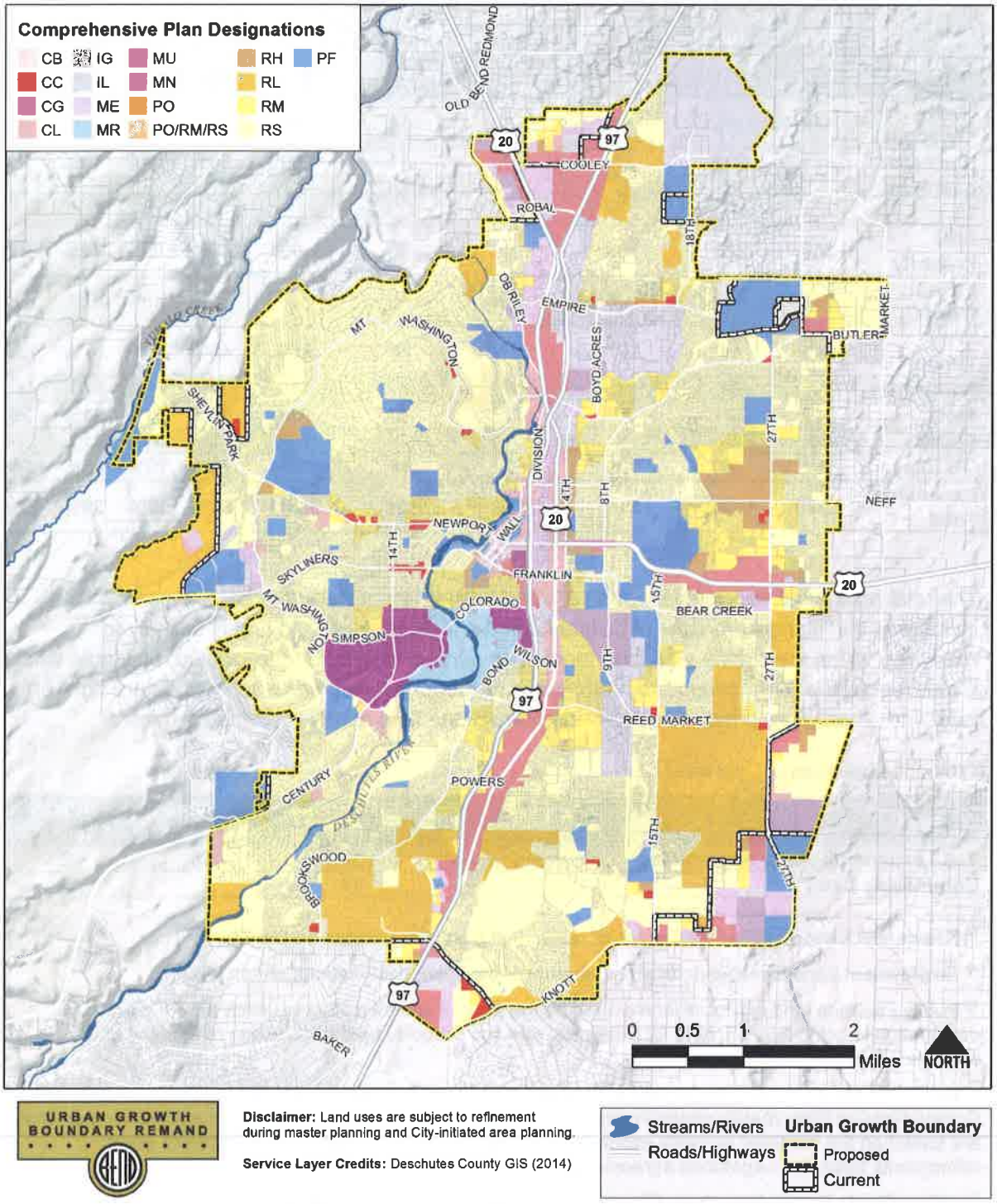


Table 1: Preferred UGB Expansion - Key Metrics

Expansion Area	Total Acres	Resid-ential Land (ac)[11]	Employ-ment Land (ac)[12]	Public Facilities Land (ac)[13]	Existing Right of Way (ac)	Housing Units[14]	Housing Mix[15]			Est. Jobs
							SFD	SFA	MF	
North "Triangle"	188	86	88	0	14	505	44%	13%	42%	835
Northeast	471	222	22	196	31	1,099	50%	10%	40%	214
East Hwy 20	2	2	0	0	0	70	0%	14%	86%	0
DSL Property	368	223	139	0	6	1,001	49%	11%	41%	880
"The Elbow"	479	122	246	75	36	819	36%	17%	47%	2,274
"The Thumb"	245	44	177	0	24	266	49%	15%	37%	1,573
Southwest	57	34	5	14	4	240	24%	16%	60%	80
West	347	321	21	0	5	983	69%	10%	21%	261
Shevlin	68	60	8	0	0	174	69%	10%	21%	74
OB Riley	154	28	109	0	17	125	70%	10%	20%	990
Expansion Total	**2,380**	**1,142**	**815**	**285**	**138**	**5,282**	**50%**	**12%**	**38%**	**7,181**

The total residential, employment and park and school land need in the UGB expansion includes within it small amounts of buildable land and developed land that is unlikely to redevelop within the planning horizon located on parcels that have other vacant, buildable land. It also includes land for things like future parks and open space, future schools, future right-of-way, and other future urban uses. A breakdown of the land need is provided in Table 2.

Table 2: Components of Land Need

	Residential Land	Employment Land	Public Facilities
Total expansion acres on parcels by plan designation	1,142	815	285
Unbuildable Land[16]	11	2	3

[11] Residential Land identifies total acres of residential plan designations on tax lots.

[12] Employment Land identifies total acres of employment plan designations on tax lots.

[13] Public Facilities land indicates land owned by the park or school district to which the PF plan designation is being applied; land for additional parks & schools is provided within residential land acreage.

[14] Housing units are modeled capacity estimates. Policies in the new Growth Management chapter of the Comprehensive Plan specify minimum and/or maximum housing capacities for each expansion area that are based on the modeled capacity estimates, but may be rounded slightly or incorporate slight refinements based on negotiated agreements.

[15] SFD = Single Family Detached; SFA = Single Family Attached; MF = Multifamily (includes duplex & triplex). Housing mix reflects policy requirements for the expansion area in total; individual properties may vary.

[16] See page 46 for an explanation of lands identified as unbuildable.

	Residential Land	Employment Land	Public Facilities
Developed Land Not Expected to Redevelop[17]	13	13	152
Vacant and Redevelopable Buildable Acres	1,119	800	130
Land for future right of way, future parks & open space, future schools, and other urban uses	475	255	130
Net Buildable Residential / Employment Acres	**644**	**545**	**0**

7.4.4.6. Evaluation of the Preferred Scenario

The evaluation of the preferred scenario is summarized in the Urbanization Report (See pages 90-101, Rem Rec 10904-10915). The findings in this section draw on that summary, as well as additional detailed information in the supporting technical memoranda evaluating the preferred scenario (See Rem Rec 11223-11250, 11201-11222, 10183-10218, 10223-10263).

Overview

The purpose of this section is to summarize the evaluation of the Preferred UGB Expansion Scenario relative to the four Goal 14 factors. This summary draws on technical memoranda prepared by Angelo Planning Group, Fregonese Associates, DKS Associates, and Murray Smith Associates addressing specific topics and provides a summary of key findings from those evaluations.

The evaluation of the preferred scenario was based on the same "Community Outcomes" and largely the same set of "Performance Measures" used to evaluate the original scenarios and SAAMs (see page 7-21 of this section). The methodology used to evaluate each performance measure was generally similar to previous evaluations for the initial scenarios and SAAMs. Some refinements to land use and transportation assumptions have been applied in order to more accurately reflect elements such as current and proposed development code regulations, updates to the BLI, street and block size standards, and housing cost factors. In addition, the details of the methodology were refined for a few of the performance measures in order to make the results more informative. This is noted in the summary below where applicable. In some cases, these refinements, while more accurately capturing the performance of Scenario 2.1G, cannot be directly compared to the results of the original scenarios and SAAMs because the differences are not a result of the alternative boundary locations. In cases where results are not comparable to the original scenarios and SAAMS, other reference points (e.g. existing conditions, or an average for the current UGB) have been provided where possible.

[17] A quarter acre of land on each property with an existing home(s) was assumed to be developed. Redevelopment assumptions are the same as those for developed land inside the UGB (based on the plan designation / development type). For existing schools and parks, the area developed with existing uses was estimated based on aerial photography.

Complete Communities and Great Neighborhoods

Scenario 2.1G efficiently accommodates the land need through a focus on complete communities and using expansion areas to complete existing neighborhoods inside the UGB. Access to schools, parks, and commercial services is among the highest of all scenarios considered:

- 62% of all future housing units (existing plus new, throughout the existing UGB and expansion areas) in Scenario 2.1G are within a half-mile of existing or future school sites.
- 99% of all future housing units in Scenario 2.1G are within a half-mile of existing or future parks.
- 86% of all future housing units are projected to be within a half-mile of commercial services in the preferred scenario.

Nearly all subareas have a mix of residential and employment land. Only the small East Hwy 20 expansion area is exclusively residential, and it is very small and adjacent to existing commercial areas. The OB Riley area has a high ratio of jobs to housing, due to its good transportation access (Hwy 20, Cooley Road, Hwy 97, OB Riley Road), generally flat topography, and larger parcel sizes.

The efficient accommodation of land needs in Scenario 2.1G is supported by new proposed policies that require area planning (see "Specific Expansion Area Policies" in the draft Growth Management Chapter of the Comprehensive Plan). The proposed area planning policies require that all expansion areas will be subject to either new City-initiated area plans or property-owner led master planning under the Bend Development Code, Chapter 4.5. The policies and code will regulate new development to implement, through adopted area plans and master plans, the identified land needs, specifically: the amounts, types, and mix of housing; the amounts and types of employment; and lands for parks, schools and other needs. Area planning and master planning will coordinate the land use with needed transportation facilities, natural resource protection, and compatibility with adjacent uses. Taken together, the area planning policies will support complete communities which will efficiently accommodate identified land needs.

A significant expansion in the West area and expansions on other large sites make this scenario mostly (over 75%) large property owners. This is among the highest shares of growth that will be subject to master planning requirements of all the alternatives considered.

Efficient, Timely Growth

Scenario 2.1G achieves a distribution of residential density across many subareas. East Hwy 20 has a very high housing density (estimated at over 23 units per gross acre), because it is small (just over two acres) and dedicated to providing affordable housing. The West and Shevlin areas have wildlife and wildfire considerations that make high densities inappropriate. A "transect" concept was applied in these areas to address transitions to natural resource areas;

the transect reduces density at the western edge in order to reduce environmental impacts as compared to medium- and high-density development. As a result, the gross density for these areas is a little over 3 units per gross acre of residential land. Other subareas range from 4.3 to 8.7 units per gross acre of land in residential and mixed use plan designations.

Net densities for new residential development are much higher – close to 10 units per net residential acre on average for the UGB expansion area. The difference is due to land needed for right of way, parks and open space, and other non-residential uses within residential plan designations. This is substantially higher net density than the existing UGB, which had an overall average net residential density of 4.4 units per net acre as of 2008 (see Appendix C).

Overall residential densities are somewhat lower than for the initial set of scenarios and SAAMs due to refinements to assumptions about the yield for efficiency measures inside the UGB and refinements to the recommended minimum density threshold for master plans in the RS zone. These refinements result in more "reasonably likely" assumptions about density, market response to efficiency measures, and redevelopment rates in opportunity areas.

The proposed recommendations and assumptions about efficiency measures inside the UGB, as well as the inclusion of additional land to meet the need for future parks and the inclusion of adjacent right of way abutting UGB expansion areas, translates to a larger total expansion than the initial set of scenarios and SAAMs (2,380 acres in total). The additional land is needed to meet identified land needs.

Scenario 2.1G includes very little land in expansion areas that is currently developed (only 5% of acres, primarily located in the Northeast Edge and the Elbow). It includes a greater proportion of development on vacant land than nearly all previous scenarios/SAAMs.

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

Balanced Transportation System

Scenario 2.1G retains a focus on walkable mixed use redevelopment in the core and complete communities in expansion areas, which are important elements of reducing reliance on the automobile.

Vehicle Miles Traveled Per Capita

As measured with the regional travel demand model, Scenario 2.1G performs better than the prior scenarios and SAAMs, with 9.76 daily VMT per capita versus 9.92 to 10.13 daily VMT per capita for the initial scenarios. This is attributable mostly to refinements to demographic and land use inputs, with some influence of land use patterns and improved connectivity in expansion areas. Projected VMT growth in Scenario 2.1G results in a 1.2% increase over 2010 and 4.1% increase over 2003 (after accounting for all of the nuances of the TPR requirements).[18] This meets the requirement that VMT is unlikely to increase by more than 5%

[18] Percent change relative to 2003 incorporates credit for connectivity improvements since 1990. See Attachment 6 of Bend's Integrated Land Use and Transportation Plan for details.

over the planning horizon.[19] However, Scenario 2.1G generated a higher average daily round trip length than the prior scenarios. This is due to additional growth in non-centralized areas, including the West and Thumb areas. This impact is compounded by The Thumb having the highest average trip distance of the subareas.

Looking solely at household VMT (only trips that begin or end at home, as measured using the Envision "7D" travel behavior model), the preferred scenario has an overall average of 9.41 household vehicle miles traveled per capita in 2028. Because there were several minor adjustments to the methodology (including the calculation of activity density and fine-tuning household income assumptions) between the analysis of the original scenarios and SAAMs and Scenario 2.1, the results are not directly comparable to previous results. As in the previous analysis, the expansion areas and areas on the fringe of the city generally are projected to generate more vehicle miles traveled per capita than areas closer to the city's existing major activity centers, even with the emphasis on complete communities in the expansion areas.

Mode Split, Walk Trips, and Transit Access

The preferred scenario is projected to result in an 8% non-auto share and a 92% auto share for all household trips. Despite the minor changes to methodology mentioned previously, this is nearly indistinguishable from the previous scenarios at the full future UGB scale. There was little variation in mode split at that level for the original scenarios and SAAMs, and the preferred scenario continues to show the same pattern. The estimate for Scenario 2.1G is also essentially unchanged from the ET model estimate of existing conditions (using 2014 built environment and demographic data and 2016 transit service), which estimates an 8.5% non-auto share and a 91.5% auto share for all household trips UGB-wide (including existing population in proposed UGB expansion areas). However, these results do not capture additional strategies and policies that the City has committed to through its Integrated Land Use and Transportation Plan, which would be expected to improve mode split beyond what is reflected in the model.

Weekly walk trips per capita are down slightly from the original scenarios and SAAMs, but the variation is minimal at the full future UGB scale. Walk trips are also slightly below the existing (2014) average. However, analysis of walk trip frequencies at a smaller geographic scale reveals that the complete communities approach to UGB expansion will encourage greater walking, biking, and transit usage in many peripheral areas inside the current UGB and adjacent to UGB expansion areas. These areas will have new opportunities to walk and bike to parks, schools, and commercial services.

An estimated 49% of all future housing units and 65% of all future jobs (existing and new, throughout the existing UGB and expansion areas) are projected to be within a quarter mile of transit in Scenario 2.1G. While this is a decrease relative to 2014 (due to the expansion areas being mostly outside of transit corridors), this is a higher proportion of housing and employment

[19] See Bend's Integrated Land Use and Transportation Plan for additional discussion of VMT growth relative to requirements in the TPR.

than in any of the other scenarios and SAAMs. This level of transit access does not depend on expansions to the current transit network, which would further increase access.

Safety and Connectivity

As in all prior scenarios, the primary connections from the expansion areas to the rest of the city will be via collector and arterial roads. Scenario 2.1G provides enhanced connectivity in west and northeast relative to Scenario 2.1 due to the inclusion of Skyline Ranch Road and Yeoman Road extensions. It also retains and enhances the important new connections in the southeast that were part of Scenario 2.1. In the North Triangle, fewer collector roads are proposed than in Scenario 2.1, which somewhat reduces connectivity in this area, but key connections remain. East Highway 20 is a very small expansion area with access directly onto Highway 20; making other connections to the east will depend on coordination with undeveloped land inside the UGB. Most other subareas are similar to Scenario 2.1.

Congestion

Overall, Scenario 2.1G would include 12.14 peak hour miles of congested network, which is a ten percent decrease from the prior lowest scenario. While Scenario 2.1G was shown to generate longer trips in some growth areas, there are two primary reasons for the reduction in congested corridors:

- Growth was emphasized in some UGB expansion subareas that were less reliant on congested corridors. These areas made use of existing under-utilized capacity in the transportation system.
- The mix of uses (including employment uses in non-centralized areas) created a reverse commute in some cases that would take advantage of remaining roadway capacity on routes that experience congestion in one direction.

Cost-Effective Infrastructure

Transportation

Capital costs for transportation infrastructure for Scenario 2.1G are lower than the preliminary estimates for the initial scenarios and SAAMs reported as part of the scenario evaluation in October 2015. This is due to more detailed consideration of and refined assumptions about railroad and canal crossing needs, and functional classifications and alignments for new roads. Scenario 2.1G includes additional connectivity improvements relative to Scenario 2.1, including Skyline Ranch Road and Yeoman Road. The transportation improvements needed to support Scenario 2.1G, beyond those already planned for and funded as part of the City's existing Transportation System Plan (TSP), include:

- $119 million for close to 12 miles of new collector roadways to serve and link expansion areas as well as the large vacant opportunity area in southeast Bend; and
- $2.4 million for intersection improvements (at two intersections) and $2.5 million for capacity improvements (on one road segment), based on increased traffic volumes.

This results in a total cost estimate, using consistent methodology with the analysis of the original scenarios and SAAMs, of $126.3 million.

In addition to repeating the scenario evaluation methodology originally used for the initial scenarios and SAAMs[20], which focused on identifying roads where volumes are projected to exceed roadway capacity,[21] a more detailed analysis (sometimes referred to as "TPR analysis" because it is required by OAR 660-012-0060, a section of the Transportation Planning Rule or TPR) was done for Scenario 2.1G. TPR analysis is required to identify whether any parts of the state highway system in Bend would both exceed ODOT's adopted mobility standards (which are generally below the physical capacity of the roadway) and experience more traffic volume based on Scenario 2.1G than based on the City's current UGB and current adopted comprehensive plan designations.[22] TPR analysis was not done for the six initial scenarios and SAAMs because of the level of effort and detail involved and because identifying appropriate mitigation for impacts to the state highway system can require negotiations with ODOT that are more appropriately focused on the preferred alternative. See Section 8 for complete TPR findings.

Scenario 2.1G is also expected to result in a greater amount of local road lane-miles than Scenario 2.1 in the expansion areas due to the increased overall acreage of development. (The Envision Tomorrow model was also calibrated with more precise roadway assumptions for Scenario 2.1G, which may account for some of the difference.)

Sanitary Sewer

In terms of total initial capital costs for sanitary sewer, Scenario 2.1G falls between the least-cost and highest-cost initial alternatives, and is more expensive than Scenario 2.1. Comparing cost per acre, it is slightly higher than Scenario 2.1 and other low-cost initial alternatives.

The main reason for the increased cost is a larger expansion in the West area, especially the northern portions, and the inclusion of a portion of the Shevlin area. These areas contribute to additional improvements beyond those identified in Scenario 2.1, including a lengthy gravity line to convey wastewater from the northern West area to the Awbrey Glen pump station, and capacity improvements of the Awbrey Glen pump station. These areas also rely on pumping rather than gravity conveyance, which is less efficient in the long run than other expansion subareas. However, Scenario 2.1G avoids an expensive new pump station in the northwest plus constructing the extension of the Northeast Interceptor from the north of the city, across the Deschutes River, and southward by keeping growth in that area within the capacity of the existing Awbrey Glen force main.

Scenario 2.1G continues to make efficient use of the Hamby alignment with growth in the northeast and southeast; avoids an additional pump station to serve the Bear Creek Road area;

[20] See "Scenario Evaluation: Transportation Analysis Technical Memorandum" from DKS Associates to the Urban Growth Boundary and Growth Scenarios Technical Advisory Committee, dated October 7, 2015, for a detailed explanation of the methodology used for the scenario evaluation.

[21] On the state highway system, if corridor demand was forecasted to exceed capacity, but the volumes were less than those in the Bend MPO MTP, additional mitigations were not recommended.

[22] The methodology and assumptions for the TPR analysis are documented in in a memo titled "Bend UGB Expansion – TPR Evaluation For Changes Within the Current UGB" from DKS Associates, dated July 14, 2016.

and is otherwise largely comparable to Scenario 2.1 in those areas. The Northeast Edge relies on the Hamby alignment, as in Scenario 2.1. Growth in this area is focused around Butler Market Road, so it does not need to contribute to the cost of the portion of the Hamby alignment south of Butler Market Road. This reduces the costs assigned to the subarea slightly (there is no change to the total cost of the Hamby alignment). The Thumb, Elbow, and DSL all require similar improvements to Scenario 2.1 – contributions to the Southeast Interceptor and the Hamby alignment as well as gravity line extensions to connect to existing lines. As in Scenario 2.1, the eastern portion of The Elbow requires an interim lift station and force main to connect to the Southeast Interceptor. The East Highway 20 area can be served by short connections to existing gravity sewer lines and does not require an interim lift station.

As in Scenario 2.1, the Southwest area requires extension of a new gravity line, which may also provide service to adjacent areas inside the UGB that are on septic currently. In addition, the Southwest service area requires up-sizing of existing gravity lines above the sizing recommended in the CSMP and increased sizing of unconstructed portions of the Southeast Interceptor. This would require modifying the design of the most upstream segment of the Southeast Interceptor between Highway 97 and Parrell Rd.

The North Triangle and OB Riley also require the same improvements as Scenario 2.1 which include contributions to the Northeast Interceptor east of Highway 97 to the Wastewater Treatment Plant (including increasing sizing relative to the CSMP) and extension of the Northeast Interceptor to the west to serve these areas.

Drinking Water

Because few distinctions were identified between the initial scenarios and SAAMs, a detailed analysis of the water system was not conducted for Scenario 2.1G. However, interpolating based on how the land use in Scenario 2.1G compares to prior scenarios, minimal concerns are anticipated for the drinking water storage or distribution system assuming implementation of the WMP capital improvement program including a major perimeter transmission pipeline in the northwest and additional system storage. The one exception includes the highest elevations of the West subarea, which may experience pressures below 40 psi during peak hour demands. These higher elevation water customers may require individual booster pumps to improve system pressure.

Like all of the six initial scenarios and SAAMs, Scenario 2.1G includes development within Drinking Water Protection Areas (DWPA). The Thumb, Southwest, portions of the West area, and portions of the existing UGB lie within the DWPA. The total acreage of development within DWPA in Scenario 2.1G is less than any of the initial scenarios and SAAMs (partly due to modifications to BLI assumptions inside the UGB).

Stormwater and Geology

Scenario 2.1G has a greater amount of total impervious area than Scenario 2.1 in the expansion areas due to the increased overall acreage of development, but less impervious area within the existing UGB because the COID property is not expected to develop within the planning horizon

and larger portions of the River Rim area are expected to be preserved for open space than previously assumed.

Expansion areas in Scenario 2.1G contain somewhat greater development in Welded Tuff areas than Scenario 2.1 – primarily in the West Area. However, there is less development in Welded Tuff areas overall due to changes in development assumptions within the existing UGB, specifically the COID property and areas in the southwestern part of the city. In such areas, on-site retention and treatment are required rather than a community stormwater system.

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

Quality Natural Environment (Environmental and Energy Consequences)

Development in Wildlife Areas

Scenario 2.1G strikes a balance between urban development and protection of wildlife habitat on the outskirts of Bend. Protected areas within the Deschutes County "Wildlife Combining Zone" were not part of any growth scenario analyzed, but Scenario 2.1G does include land labeled by the Oregon Department of Fish and Wildlife (ODFW) as big game winter range in the Shevlin Area, the West Area, the Southwest Area, the "Thumb," and the "Elbow." In addition to the winter range areas, an ODFW biologist identified general areas that the agency believes may be particularly important for wintering elk and deer, which have been identified as "Potential Elk/Deer Range."

The original six scenarios evaluated contained between 325 and 1,400 acres of mapped big game winter range in the expansion areas. Scenario 2.1G includes about 820 acres of mapped big game winter range in the expansion areas, roughly at the midpoint of other scenarios evaluated. Scenario 2.1G also includes a small portion of the Shevlin area, which is partially included in the "Potential Elk/Deer Range" identified by ODFW biologists. The portion of the Shevlin area included in Scenario 2.1G is smaller than the portion included in Scenario 3.1 and SAAM-1, the original alternatives that included that area, and is surrounded on three sides by urban development. It is also only partially within the general area identified as Potential Elk/Deer Range. Currently, this portion of the site has numerous buildings which are associated with the surface mining operation to the north. These uses will be replaced with lower density housing. The City has provided a Goal 5 ESEE report describing the included areas in detail and recommending a protection program for these areas. Many areas included in the proposed expansion are generally adjacent to urbanized areas and roadways, or disturbed by existing industrial activity. The West neighborhood will be developed at a low density, using the "transect" concept to transition to the lowest density at the western edge, and is expected to provide habitat corridors and other features that will be as friendly to wildlife as possible. It is also important to note the presence of a large (400+ ft.) rural buffer between the existing UGB (Shevlin Commons) and the 40 acre expansion on the west just south of Shevlin Road, which provides a natural corridor in this area to facilitate north/south movement of large game.

Development along Riparian Corridors

Scenario 2.1G does not include any proposed development adjacent to identified Goal 5 riparian areas of Tumalo Creek. This is the same as Scenario 2.1, and better than the scenarios that included the full extent of the Shevlin Area and the Gopher Gulch area.

Wildfire Hazard

The City conducted analysis of wildfire hazard for each potential expansion subarea using a mix of aerial photography and on-the-ground evaluation by wildfire experts. Wildfire risk was evaluated as high to extreme around the entire UGB. However, the evaluation concluded that proper vegetation management and imposition of mitigation measures (e.g. special building codes) could minimize risk in nearly all areas. The combination of topography and adjacent vegetation bordering Tumalo Creek in the Shevlin area creates a mitigation challenge. Scenario 2.1G avoids development along steep slopes adjacent to Tumalo Creek. In addition, areas of particular concern to some TAC and community members – the West Area and Shevlin Area – will use the Rural-Urban Transect to provide better wildfire hazard mitigation and development under the "Firewise" standards on the edge of the City. The lower density in conjunction with fuel reduction and fire resistant building practices plus enhanced road access (Skyline Ranch Road) and access to municipal water sources further reduce the threat from wildfire in the West and Shevlin Areas. In addition, the City is adopting a policy addressing wildfire into both the new Growth Management chapter of the Comprehensive Plan and Chapter 10 (Natural Forces):

> *The City will adopt strategies to reduce wildfire hazard on lands inside the City and included in the Urban Growth Boundary. These strategies may include the application of the International Wildland-Urban Interface Code with modifications to allow buffers of aggregated defensible space, or similar tools, as appropriate.*

Water Use, Energy Use, and Greenhouse Gas Emissions

The household carbon emissions, energy use, and water consumption showed little variation between the original scenarios because they are strongly correlated with housing mix. As a result they can be expected to be roughly the same as Scenario 2.1 and the other scenarios and SAAMs.

Greenhouse gas emissions are linked to VMT, but these also showed little variation among the original scenarios and SAAMs. Scenario 2.1G falls within the range of the original scenarios and SAAMs.

Housing Options and Affordability (Social Consequences)

Housing Mix

Scenario 2.1G continues to provide a mix of housing types in all subareas, even the relatively low-density West Area and Shevlin Area. East Highway 20 and the Southwest Area contain a high percentage of multifamily housing, but they are small properties that are expected to help "complete" nearby single-family neighborhoods. By providing a mix of housing types in each subarea, and increasing the housing mix in opportunity areas within the existing UGB, Scenario 2.1G distributes new housing opportunities to all areas of the city.

Housing Cost

Due to the complexity of the housing affordability analysis done for the original scenarios and SAAMs, and the fact that changes to building assumptions would have meant that results were not directly comparable to prior scenarios, this evaluation was not repeated for Scenario 2.1G. Based on the areas where growth is focused in Scenario 2.1G relative to Scenario 2.1, there are several hundred more housing units in the expansion areas west and northwest of the City that are likely to have relatively higher costs. However, there are also more housing units that will be built in relatively lower cost areas in the north, northeast, southeast, and south.

A comparison of projected housing costs to Bend income levels (not done for the original scenarios and SAAMs, but useful as an absolute indicator of affordability) shows that roughly 29% of new housing units in Scenario 2.1G as a whole are projected to be affordable to households making at or below the median family income for Bend ($59,400). Under the Base Case, only about 20% of new housing units within the current UGB would be projected to be affordable at or below the MFI. In addition, affordable housing commitments by several property owners in UGB expansion areas will provide income-restricted housing units affordable to those below the area median income, which will further contribute to housing affordability in Scenario 2.1G.

Strong Diverse Economy (Economic Consequences)

Site Suitability for Large Lot Industrial

Scenario 2.1G includes Industrial Large Lot sites at Juniper Ridge and at the southern portion of the DSL property. An ideal site for this use is large and under a single ownership, flat, and with good transportation access. Each scenario included one site at Juniper Ridge and one additional site elsewhere within the UGB expansion areas. The Employment TAC recommended the DSL site as the preferred location of the Large Lot Industrial site outside of the existing UGB (as originally evaluated in Scenario 1.2, and incorporated into Scenario 2.1G) due primarily to its public ownership. Thus, the two sites identified in Scenario 2.1G are the best performing sites evaluated.

Site Suitability for Other Industrial and Mixed Employment Land

Other industrial sites have similar needs to the Large Lot Industrial sites, but are less reliant on large tracts of land in single ownerships.[23] Scenario 2.1G is performs very similarly to Scenario 2.1 in this evaluation, but arrangement of land uses and creation of urbanization of policies aim to address the compatibility issues of industrial land adjacent to existing and planned residential development. Scenario 2.1G has intentionally provided better buffers between industrial areas and residential areas in the North Area. Sizing of other industrial areas (i.e. Mixed Employment in the West area) refined to be more context-sensitive.

[23] See Bend EOA, Table 15.

Site Suitability for Commercial Land

Commercial sites have similar needs to industrial sites, but can tolerate somewhat greater topography and site-preparation costs, and have more need of visibility from pass-by traffic.[24] Scenario 2.1G is very similar to Scenario 2.1. Commercial uses are generally supported by surrounding land uses and transportation network. The West area and Shevlin Area lack a large amount of pass-by traffic, so commercial uses will likely be locally-serving.

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

Impact to Farms

Scenario 2.1G is similar to Scenario 2.1 in the amount of development near high value farm lands. The Northeast Edge properties, East Highway 20, DSL Property, and the "Elbow" include development within ¼ mile of EFU land. The Northeast Edge and DSL properties are within ¼ mile of commercial farms and low-impact hay fields. The "Elbow" properties are within ¼ mile of two commercial farms, one of which is an active operation that includes a feed lot for beef along Knott Rd. To aid in compatibility, Scenario 2.1G limits residential uses near the feed lot.

Impact to Irrigation Districts

Scenario 2.1G is similar to Scenario 2.1 in the amount of development that may impact irrigation district lands. Scenario 2.1G contains somewhat more development in the OB Riley area and the Northeast Edge than Scenario 2.1, but less development in impacted areas than other scenarios evaluated. By not including any highly-parcelized areas served by these irrigation districts, Scenario 2.1G lessens its overall impact to irrigation districts.

Impact to Forest Land

Scenario 2.1G continues to avoid development in close proximity to designated forest land. Only a very small portion of the West Area is within ¼ mile of designated forest land (see map), and this area is expected to implement a "transect" concept, providing an appropriate transition to natural areas West of the city.

Preferred Scenario Evaluation Conclusion

The preferred scenario offers a balance of:

- strong focus on complete communities to improve access to schools, parks and commercial areas within existing neighborhoods as well as in expansion areas;
- area planning policies to support complete communities and efficient development;
- highly efficient land use in areas with few constraints, and an overall increase in residential density relative to existing conditions;
- a sensitive approach to development in areas adjacent to natural resources to improve environmental consequences and reduce natural hazard risk;

[24] See Bend EOA, Table 15.

- expansion areas that provide a mix of housing types and costs and that will leverage voluntary affordable housing commitments from property owners in order to improve social consequences and ensure that housing is available to meet the needs of residents at all income levels;
- new employment land focused in suitable areas where it will contribute to Bend's economic growth;
- cost-effective use of recent and future sewer investments;
- an orderly and connected network of new roads that will support efficient travel by all modes; and
- minimal concerns for farm and forest compatibility.

This demonstrates consideration and balancing of the required Goal 14 location factors, consistent with the requirements of Statewide Planning Goal 14 and OAR 660 Division 24.

7.4.4.7. Alternatives Evaluation Conclusion

The City has considered and balanced all four Goal 14 location factors required under Statewide Planning Goal 14 and OAR 660 Division 24 in evaluating alternative UGB locations and selecting the preferred scenario, as documented in this section. The relative costs, advantages and disadvantages of the preferred scenario and all other alternative UGB expansion areas and scenarios with respect to the provision of public facilities and services were evaluated and compared, consistent with OAR 660-024-0060(7) and (8). These costs, advantages and disadvantages were given due consideration, and also balanced against ESEE conseqences, efficient land use, and compatibility with nearby farm and forest land for each alternative.

7.4.5. Overall Conclusion Regarding UGB Location

As demonstrated in this section, Bend has:

- established a reasonable study area, and eliminated very little land from consideration prior to applying the Goal 14 location factors;
- provided an amount of UGB expansion that is matched to land need;
- expanded solely onto exception land, avoiding lower priority farm and forest land entirely;
- considered and balanced the Goal 14 location factors at each point from narrowing the pool of potential expansion areas to refining the final UGB proposal to identify the best performing exception land for UGB expansion; and
- assigned appropriate urban plan designations to the added land, consistent with identified land needs.

The proposed UGB expansion accommodates the projected land needs through 2028, and complies with Goal 14, relevant state statutes, and administrative rules.