Meeting Agenda

Residential Technical Advisory Committee – Meeting 4
Monday, November 17, 2014 9 AM – 12:30 PM
Please note the 9 AM start time.
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to review and make preliminary recommendations for:

- Assumptions to be used in the Buildable Lands Inventory
- Assumptions for the "Base Case" (existing UGB analysis)
- Residential efficiency measures on vacant "opportunity sites" – completion of discussion from previous meeting
- Residential efficiency measures that are development code related

There are several remaining issues related to the Residential Buildable Lands Inventory on which the Residential TAC is being asked to provide guidance. This meeting will provide information updates on public lands, private open space (including golf courses), and CC&Rs. New information and recommendations will be discussed for plan-zone conflicts and residential development in commercial and mixed use zones.

The Efficiency Measures Opportunity Sites agenda item is a continuation of our look at the pros, cons, and potential for applying various efficiency measures on "opportunity sites", i.e. lands that are largely or entirely vacant and at least 5 acres. Discussion of Juniper Ridge will round out the NE quadrant, then we will discuss the SW and NW quadrants.

Efficiency Measures that are potential changes to the development code have been of keen interest in TAC discussions to date. The team has prepared a list and information for the TAC to review.

The specific discussion questions, i.e. the feedback we would like from the TAC, are listed for each topic. They are a starting point for the agenda.

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

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This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

1. Welcome and Introductions — 9:00 AM

a. Welcome and convene — Tom Kemper

2. Buildable Lands Inventory Policy Issues

Information and action

a. Presentation: Informational updates on issues previously discussed: — Brian Rankin and Becky Hewitt, Angelo Planning Group
   - Public lands (what we have heard from the agencies);
   - CC&Rs (updated inventory; please see also the memorandum from Al Johnson regarding CC&Rs and case law/precedent);
   - Private open space, including golf courses (additional research)

b. TAC discussion: questions or clarifications

c. Presentation: Plan/Zone conflicts & residential capacity in Commercial and Mixed Use Designations

d. TAC discussion and action: does the TAC agree with the project team recommendation or suggest modifications to it?

3. UGB Analysis Base Case — 9:40 AM

Information and action

a. Presentation: Introduction to the Base Case — Becky Hewitt

b. TAC discussion and action: questions or clarifications; does the TAC agree with the project team recommendation or have modifications to it?

4. Break — 10:15 AM

5. Efficiency Measures – Opportunity Areas — 10:20 AM

Information and preliminary direction

a. The TAC will continue its review of each quadrant of the City, using materials included in the TAC 3 packet (these materials will not be distributed again unless requested) and additional information specific to the Juniper Ridge site. The remaining areas for discussion are: Northeast area – Juniper Ridge, Northwest area, and Southwest area. — Brian Rankin and Becky Hewitt

   The discussion questions are:

- What urban form opportunities does the TAC see for each of these areas?
- Are the potential efficiency measure strategies listed in the table reasonable? Are there any that are not appropriate or others that should be considered?

6. Efficiency Measures – Development Code 11:20 AM

Information and preliminary direction

a. Presentation: potential development code amendments that can improve residential land use efficiency. Brian Rankin and Becky Hewitt
b. TAC discussion and action: questions or clarifications; does TAC approve the recommendations for use in the upcoming workshop and UGB analysis or suggest modifications? (Note: Approval means they are appropriate for further evaluation; it does not mean they will be automatically implemented. That will depend on further analysis and discussion.)

7. Public Comment 12:15 PM

8. Project News 12:25 PM

a. Announcements and updates
b. Workshop planning

9. Adjourn 12:30 PM

Memorandum

November 10, 2014

To:	Residential Lands Technical Advisory Committee
From:	Bend Staff APG Consulting Team
Re:	Residential Buildable Lands Inventory – Follow up on Private Open Space and Golf Courses

INTRODUCTION

The October 7, 2014 memorandum to the Residential Lands Technical Advisory Committee (Residential TAC) provided an issue summary and recommendation for how private open space and private rights of way are categorized in the Buildable Lands Inventory (BLI), among other issues. Residential TAC members requested additional information on certain categories of private open space in order to make a recommendation on how they should be treated in the BLI. This memorandum provides additional information on three categories of private open space about which there were some questions at the last Residential TAC meeting:

1. Common areas that do not have HOAs or similar organizations listed as the owners and are not identified as part of an approved subdivision in the available assessor's data
2. Land identified in the October memorandum as "Other Open Space"
3. Golf Courses

COMMON AREAS & OTHER PRIVATE OPEN SPACE

Summary of Additional Information

Upon refining the GIS data to better identify taxlots associated with approved subdivisions, only two parcels identified as Common Areas were neither owned by a Homeowners Association (HOA) or similar association nor part of an approved subdivision. Both of these appear to be small, remnant parcels like those described below as "unbuildable".

The "other private open space" category summarized in the October memorandum includes land identified in the county assessor's data as "unbuildable" – small, oddly shaped remnant parcels – as well as the Pilot Butte Airstrip and a pond.

Team Recommendation

Based on the additional information summarized above, the project team recommends that all land identified as Common Areas and Unbuildable be categorized as developed / unavailable for residential uses.

GOLF COURSES

This section identifies the existing golf courses within the Bend City limits and summarizes their status and how this might affect the land need for the UGB.

Existing Golf Courses

There are currently five golf courses within the city limits of Bend. Below is a description of each golf course.

Awbrey Glen Golf Club

The Awbrey Glen golf course was developed in conjunction with the Awbrey Glen Homesites beginning in 1992. The golf course was proposed and approved by the City as part of their land use approval for the Awbrey Glen PUD. However, the golf course was not platted as part of the homesite development. The golf course property was retained by the developer Brooks Resources as a remnant of the original development parcel. The golf course is now owned by the Awbrey Glen Golf Club membership as Awbrey Glen Golf Club, Inc. The Awbrey Glen Golf Course is located in the northwest corner of the city adjacent to the urban growth boundary. The course consists of a total of 185.59 acres which includes 26.13 acres that lies outside of the city limits/UGB.

Owner Name	Tax Map and Tax Lot	Land Area	Value
Awbrey Glen Golf Club, Inc	1711240000300	117.27 acres	$1,112,320.00 w/ structures
	1711240000300 Outside City limits	26.13 acres	$136.420 no structures
	171125BA00100	13.32 acres	$115,400.00 w/ structures
	171124CA02900	5.33 acres	$86,230.00 w/structures
	171125A00105	23.54 acres	$1,003.630.00 w/ club house

Awbrey Glen Golf Course allows public play, but also offers memberships with annual dues. Membership is not restricted to residents of the Awbrey Glen Homesites. Given the corporate membership structure of ownership, the likelihood of Awbrey Glen Golf Club redeveloping the course into homesites is minimal.

Back Nine

In 1984 J.L. Ward developed a nine-hole golf course on property that he owned. Several years later he expanded the course to 18 holes, built a club house and constructed a driving range. This work was completed in 1991. In 2002 J.L. Ward stopped irrigating the course. The Home Owners Association filed a law suit against J.L.Ward and went to trial in 2005. (See Mountain

High Homeowners Association v. J.L. Ward Case No. 03 CV 0451AB) Prior to trial, J.L. Ward recorded a restrictive covenant on the original nine-hole course as "open space, natural area, golf course, park, play ground or recreation site." This remedy satisfied the court and the judge ordered J.L.Ward to reconstruct, maintain and operate the nine-hole golf course for 15 years. This decision was appealed by Ward in 2009 (See File No. A133744). The Appeals Court upheld the earlier court decision.

The Back Nine operates as a family friendly nine-hole golf course. The remainder of the property north of China Hat Road and adjacent to the Back Nine is approximately 23 acres and is undeveloped.

Owner Name	Tax Map and Tax Lot	Land Area	Value
Ward, JL Construction	1812200000100	70.38 acres	$602,320.00 w/ structures
JL Ward Construction	1812200000300	26.67 acres	$259,610.00 w/ Pro Shop

Given the history of the property, the undeveloped portion (approximately 23 acres) will likely be redeveloped with some type of residential development in the future.

Bend Golf Club

Bend Golf & Country Club was established in 1925. The Bend Golf and Country Club encompasses 231 acres in South East Bend. Residential homes border the property on all sides. The Bend Golf and Country Club facilities have frontage along Country Club Drive.

Owner Name	Tax Map and Tax Lot	Land Area	Value
Bend Golf and Country Club	1812170002400	231.28	$3,501,610. w/ Club House and recreation facilities

Bend Golf and Country Club is the only full-service, member-owned 18-hole golf course. The Bend Golf and Country Club is owned by the club members, who have determined the future of their investment for generations. Member input has led to decisions that resisted becoming like the many other development or real estate driven courses in Central Oregon, thus letting the members enjoy the true park like setting of the course. Bend Golf & Country Club is a private / members only golf club with a classic golf course, a full service facility with, tennis, pool, fitness center and private restaurants. Given the Club's long standing history in Bend and the fact that it is a member-owned golf course makes it difficult to redevelop. The Bend Golf and Country Club will continue long into the future.

Broken Top Club

The Broken Top development, located on the western edge of the city, was approved under county jurisdiction as a planned development and was subsequently annexed into the city limits.

The golf course was approved with the overall development and was platted separately in 1997 as Golf Tracts at Broken Top Plan plat #858 and recorded as CS12905. There are eight parcels described on the plat totaling 208.67 acres in size. The golf course property has changed hands four different times since platted and is currently owned by Gold Ring Holdings, LLC of Minnesota. The Broken Top Club is a membership golf and fitness facility that is open to both residents of Broken Top and others from outside the development. The Broken Top Club is an attractive amenity for the million dollar homes located in the area. The status as a platted golf course makes redevelopment very difficult and unlikely.

River's Edge Golf Course

The River's Edge development is located centrally in town. The development was approved in 1987 as a Planned Unit Development with homesites and a hotel / restaurant. The golf course satisfied the open space and amenity requirements for approval as a PUD. The River's Edge Development recorded the first phase plat in 1988 and began constructing homes and the golf course. The golf course was not platted as open space tracts on the plat, but instead was recorded as a separate deed in vol. 159, page 2022 and page 2023. The Rivers Edge Golf Course has a total area of 178 acres. The majority of the course, 160.3 acres is owned by the Rivers Edge Investments, LLC. The remaining 17.8 acres is owned by WWC Investments, LLC. The 17.8 acre holding includes area near the convention center.

Owner Name	Tax Map and Tax Lot	Land Area	Value (RMV)
Rivers Edge Investments, LLC	171220DC04600	4.58 acres	$122,510.
	171220DC04800	8.74 acres	$132,830.
	171229A000604	10.65 acres	$107,930
	171229A000605	13.75 acres	$205,830
	171229B000101	4.90 acres	$82,490
	171229B000102	7.39 acres	$390,180.
	171229B000102	53.93 acres	$694,350.
	171229B000103	56.36 acres	$611,250.
WWC Investments, LLC	171229A000600	8.09 acres	$3,675,340.
	171229A000606	9.71 acres	$164,220.

The River's Edge Golf course is a public course that offers annual membership benefits. The golf course provides a desirable amenity for the Riverhouse Hotel patrons and residents of Rivers Edge. It is unlikely that the golf course will redevelop.

In Summary

Successful golf courses in Central Oregon are desirable for economic development and tourism. The status and potential for redevelopment is uniquely different for each course.

Of the five existing golf courses, none of them have redeveloped during the look back period of 1998-2008 (per ORS 197.296(4)). The **Back Nine** owned by the JL Ward Company is more likely than other golf courses to redevelop in the future. The undeveloped portion (approximately 23 acres) will likely be redeveloped with some type of residential development in the future; however, the restrictive covenant recorded for the original nine-hole course will prevent it from redevelopment. **Awbrey Glen** and the **Bend Golf Club** are member owned courses making any change to the status of the course very challenging. **Broken Top Club** is protected by dedication on the Broken Top plat as a "golf course tract". Although not impossible to replat, there are legal implications as noted in the legal suit brought against JL Ward by the residents that border the golf course fairways. Similarly, **River's Edge** is dedicated through a separate agreement and could have legal challenges if the status of the golf course were to change. The golf courses discussed above which were approved through a land use approval as a planned development portrayed the golf course as a recreational amenity which met the requirement for open space and approval as a PUD. In addition, golf courses provide monetary and intrinsic value to the communities in which they are located and will likely continue their current use into the future.

Team Recommendation

Given the information presented above, the project team recommends treating the undeveloped portion of the Back Nine golf course as vacant and available for residential use, but considering all remaining existing golf courses, including the original Back Nine course itself, as developed / unavailable for residential uses.

Memo re Housing Needs and Capacity Analysis
From: Al Johnson, Residential Lands TAC member
To: Brian Rankin, Damian Syrnic, consulting team, RTAC members
Date: November 5, 2014

Keeping it real:

Oregon's land use laws put the burden of proving compliance with Oregon's Needed Housing statutes, goals, and rules squarely on local governments. They also make local governments the initial factfinders and record-makers concerning all of the relevant facts that have to be based on evidence.

These evidentiary issues include population projections, land availability, capacity, and suitability, development histories and trends, constraints, and the probable effectiveness of efficiency measures adopted to increase absorption capacities of existing urban lands.

State law also requires local governments to set forth the reasons how and why their factual determinations have contributed to the conclusions they have reached.

With this in mind, here is some of the reasoning that I feel is important in finalizing the housing supply analysis:

Efficiency measures: As a result of the remand and associated delays, together with the expected timeline for adoption, resubmittal, and LCDC approval, the city will have at best, only about 10 years, or half of what Oregon's needed housing statutes assume, in which to project probable buildout figures and to begin to implement any efficiency measures it relies on to meet its buildable land supply obligations.

Implications for redevelopment: Under LCDC's needed housing rule, the city probably will be able to little if any added housing capacity from "redevelopment," because state rules require proof of a "strong likelihood" that any such redevelopment will actually occur by 2028, during the truncated implementation period that remains. Findings on other development projections need only be "likely," or "more probable than not," under the preponderance of the evidence standard used by the city as initial factfinder.

Covenants, Conditions, and Restrictions (Deed Restrictions) and Plat Restrictions

The city's findings should include a more detailed explanation of why and how deed and plat restrictions on density, use, and land division make it unlikely that affected lands will be developed at higher densities than allowed by the private restrictions. It should be pointed out that such restrictions will generally be enforced by the courts notwithstanding land use regulations allowing higher densities. For example, in ***Cadbury v Bradshaw***, 43 Or App 33, 602

P2d 289 (1979), the Oregon Court of Appeals held that restrictions in a 1946 deed recorded with an attached proposed subdivision referred to "parcels" as shown on the plat. This meant that subsequent parcel owners could not divide or develop those parcels contrary to the following deed restrictions, regardless of what applicable land use regulations might allow:

> "1. All parcels in the tract shall be known, used and described as residential parcels.
>
> "2. No structure shall be erected, altered, placed or permitted to remain on any parcel other than one detached single-family dwelling or one semi-detached single-family dwelling, not to exceed two stories in height, and a private garage for not more than three cars, and other outbuildings incidental to residential use of the parcel, including servants quarters."

On the meaning of "parcel," the court said that

> "We do not agree that the covenants are ambiguous. Paragraph 2 states that only one dwelling unit can be located on any "parcel." The word "parcel" appears frequently in the restrictions and is used in several places to refer specifically to the numbered units of property shown on the recorded map."

On the permissibility of further land divisions, the court said that

> "Defendants are also mistaken in contending that resubdivision is permissible. Paragraph 1 requires all of the parcels to be "used * * * as residential parcels," and paragraph 2 prohibits the building of more than one dwelling on a parcel. It would be inconsistent with these provisions for fractional parcels to be created where no residential use can occur. We conclude that the restrictions prohibit resubdivision by necessary implication."

A recent Colorado case, ***Estate of McIntyre v. Lionsridge #4***, 124 P3d 860 (CO 2006), follows Cadbury and offers a helpful survey of similar decisions from Oregon and other states. A copy is attached.

Another Oregon case, ***Albino v. Pacific First Federal Savings and Loan Association*****,** 257 OR 473, 479 P2d 760 (1971), shows that such restrictions are not easily set aside. In ***Albino***, the Oregon Supreme Court ruled that deed restrictions limiting development to single-family residential still had "substantial value" to benefitted lot owners and would be enforced even though 7 of 31 lots in the original subdivision had already been rezoned G-3, the surrounding area had built up with additional apartments and businesses, and there was substantial increased traffic.

These restrictions are enforceable by owners of other lots in the same subdivisions and planned unit developments, and usually may not be amended without unanimous consent of all lot owners. Oregon's Planned Community Act reduces the requirements for Homeowner Association voting from unanimity to supermajority on some issues, but retains the requirement of unanimity for deed restrictions, including land division and density restrictions. Here is the relevant text:

> **94.590 Amendment of declaration by owners.**
> (1)(a) **The declaration may be amended only with the approval of owners representing at least 75 percent of the total votes in the planned community or any larger percentage specified in the declaration.**
> **(b) An amendment under this section may not:**

(A) Limit or diminish any right of a declarant reserved under ORS 94.580 (3) or (4) or any other special declarant right without the consent of the declarant. A declarant may waive the declarant's right of consent.

(B) **Change the boundaries of any lot or any uses to which any lot or unit is restricted** as stated in the declaration under ORS 94.580 (2)(m) or change the method of determining liability for common expenses, the method of determining the right to common profits or the method of determining voting rights of any lot or unit **unless the owners of the affected lots or units unanimously consent to the amendment.**

(c) Any changes to the plat, including required approvals or consents of owners or others, are governed by the applicable provisions of ORS 92.010 to 92.192.

(2)(a) Unless otherwise provided in the declaration, an amendment to the declaration may be proposed by a majority of the board of directors or by at least 30 percent of the owners in the planned community.

ORS 92.010 to 92.192, referenced in the Planned Community statute, strictly limit the vacation and modification of partition and subdivision plats and their restrictions.

In my career as an Oregon land use lawyer before my retirement in 2010, I never came across an example of the amendment, removal, or setting aside of a private density restriction. Frankly, I find it hard to imagine a situation where a majority, much less a supermajority of lot owners, would be likely to agree to such a change. Privately-enforceable restrictions on density, land divisions, and housing types are part of what people are buying when they buy a house or a lot and are considered part of the value of a home.

Memorandum

November 10, 2014

To: Residential Lands Technical Advisory Committee

Cc: Bend Staff

From: APG Consulting Team

Re: Residential Buildable Lands Inventory Policy Issues, Part 2

INTRODUCTION

The October 7, 2014 memorandum to the Residential Lands Technical Advisory Committee (Residential TAC) provided background on the Buildable Lands Inventory (BLI), identified five remaining policy issues, listed below, and provided issue summaries and recommendations for the first three issues. This memorandum addresses issues 4 and 5 below. For further context and general background on the BLI, please see the October 7th BLI memorandum.

1. Definition of public land; specifically, how to handle special district ownership.
2. How land that meets the definition of "Developed with Infill Potential" for which restrictive CC&Rs are recorded is categorized; specifically, whether the evidence is sufficient to show why such lands are not available for further development during the planning period.
3. How private open space and private rights of way are categorized.
4. **How to address conflicts between the plan designation and the zone, where one is residential and the other is non-residential.**
5. **How employment land (including mixed use designations) where residential development is allowed is treated in the residential BLI.**

REMAINING BLI ISSUES FOR TAC DIRECTION

Overview

The issues addressed in this memorandum both capture the relationship between the Residential BLI and the Employment BLI. While these need not be entirely mutually exclusive, it is important to ensure that land is not "double-counted" so that residential and employment capacity estimates are coordinated.

This section provides a brief explanation of the issue and relevant legal considerations, estimates of the approximate acreages affected by the issue; and a working team recommendation on how to address the issue.

Plan/Zone Conflicts

Issue Summary

State statute identifies buildable lands for residential purposes as including vacant and partially vacant land "planned **or** zoned for residential use" (emphasis added).[1] The LCDC Remand notes that "the city's BLI is properly based on plan districts rather than zoning districts, as permitted by OAR 660-008-0010,"[2] which states: "The local buildable lands inventory must document the amount of buildable land in each residential plan designation."[3] However, a footnote in the Remand on the previous statement clarifies that "although the BLI may categorize buildable lands by plan designation, it must include all lands that are planned *or* zoned for residential use. If land is zoned for residential use, but in a nonresidential plan designation, it still must be included in the BLI."[4] (Emphasis in original.)

It is worth noting that for land that is not vacant or partially vacant, the requirement is to include "lands that may be used for residential infill or redevelopment."[5] This does not explicitly address plan/zone conflicts for such land, but suggests that wherever a "strong likelihood" of redevelopment with residential uses exists, such land should be included in the residential BLI.

Land in Question

Table 1 identifies the number of parcels and acreages that have plan/zone conflicts where one is residential and the other non-residential, grouped by plan designation and then by zone (note: table excludes land in public ownership, which is generally not considered available for residential use regardless of zone/plan designation, as discussed in the October 7th memorandum). These lands are also shown on the attached map.

Table 1: Taxlots and Acreage with Plan/Zone Conflicts by Plan and Zone

Plan Designation	Zone District	# tax lots in UGB	Total acres in UGB	Existing Uses
Convenience Commercial (CC)	Medium Density Residential (RM)	1	0.05	Single Family Dwelling - Attached
General Commercial (CG)	Medium Density Residential (RM)	33	1.7	Condominium & Common Area
	Standard Density Residential (RS)	2	1.2	Automotive & Warehouse – Service Garage
Limited Commercial (CL)	Medium Density Residential (RM)	13	1.1	Condominium & Common Area

[1] ORS 197.296(4)(a)(A) and (B)

[2] LCDC Remand Order, page 22.

[3] OAR 660-008-0010

[4] LCDC Remand Order, page 22.

[5] ORS 197.296(4)(a)(D)

Plan Designation	Zone District	# tax lots in UGB	Total acres in UGB	Existing Uses
	Standard Density Residential (RS)	4	2.7	Motel, Private Road, Single Family Dwelling
Mixed Employment (ME)	Urban Area Reserve District (UAR)	2	51	Single Family Dwellings (2)
Public Facilities (PF)	Medium Density Residential (RM)	1	1.0	Utilities
	Standard Density Residential (RS)	136	69	Cemetery, Common Area, Private Road, Single Family Dwellings, Utilities, Vacant[6]
High Density Residential (RH)	Limited Commercial (CL)	9	2.7	Offices, Stores, Other Improvements
Medium Density Residential (RM)	Convenience Commercial (CC)	1	1.2	Common Area
	Limited Commercial (CL)	1	0.4	Vacant
	Neighborhood Commercial (CN)[7]	5	1.0	Store, Commercial with Residence, Single Family Dwellings
Standard Density Residential (RS)	Convenience Commercial (CC)	3	1.0	Benevolent/Fraternal, Single Family Dwelling
	Limited Commercial (CL)	2	0.1	Condominium
	Mixed-Use Riverfront (MR)	1	1.8	Utilities
	PO/RM/RS	4	0.7	Vacant, Single Family Dwelling
	Surface Mining (SM)	1	5.2	Vacant[8]
Surface Mining (SM)	Standard Density Residential (RS)	1	30	Vacant (Mined)
Total		220	172	

[6] The vacant land that has a PF designation and an RS zone is largely platted as part of residential subdivisions. The one large parcel (roughly 14 acres in southeast Bend) is under common ownership with adjacent vacant RS-designated land.

[7] The CN zone no longer exists; however, the Development Code states that CN zoned properties will remain as mapped recognizing neighborhood commercial properties established prior to the adoption of the current code.

[8] This is part of a larger parcel that extends outside the UGB and has mining operations.

Team Recommendation

Consider all land with residential plan or zone designations to be part of the residential BLI (subject to the BLI categories and definitions listed in the October 7th memorandum), with the following exceptions:

- For land with the UAR zone, which is primarily a holding zone and does not indicate availability for urban residential development, rely on the plan designation (affects roughly 51 acres).
- For land either planned or zoned for surface mining (SM), exclude from residential BLI unless specific information indicates that the land will be available for residential uses (affects roughly 35 acres).

Commercial and Mixed Use Zones and Designations

Issue Summary

State statute identifies buildable lands for residential purposes as including "Lands that may be used for a mix of residential and employment uses under the existing planning or zoning."[9]

In the BLI work to date, the city has evaluated the housing capacity of mixed-use zones independent of the capacity of residential zones. A summary of that analysis, which is explained in more detail in the revised BLI memorandum updated January 9, 2011[10] that was provided as an attachment to the October 9th memorandum, is provided below.

Bend has three mixed-use districts: the Mixed Employment District (ME), the Mixed Use Riverfront District (MR) and the Professional Office District (PO). Each of these allows some housing, as well as various combinations of retail, commercial, public/institutional, and light industrial uses. The city used historic development trends for each designation to estimate housing capacity. Based on their analysis of permit data and vacant land as of 2008, the city concluded that the PO district and the ME district should appropriately be considered as part of the employment BLI, and do not provide any meaningful likelihood of residential development. Some residential capacity was estimated for the MR zone, which is applied in the Old Mill District, based on historic trends. No issues specific to housing capacity in mixed use zones were raised by LCDC in the Remand.

All four of the city's commercial zones (CB, CC, CL, and CG) allow new residential use outright as part of a mixed-use development.[11] The city has not addressed housing capacity in commercial zones as part of the BLI work to date except for assuming 500 units of residential development as part of the Central Area Plan as an efficiency measure in 2008, based on

[9] ORS 197.296(4)(a)(C)

[10] Memorandum to UGB Remand Task Force, titled: "Draft Buildable Lands Inventory – Sub-Issue 2.2", Revised January 9, 2014, pages 17-18.

[11] Within mixed use development in commercial districts, either "vertical" or "horizontal" mixed use is allowed (the uses do not necessarily have to occupy the same building as long as they are part of the same development), and residential uses can occupy no more than 80% of the total floor area of the development.

redevelopment of the 3rd Street corridor. The Remand required greater specificity from the city on efficiency measures, including the assumptions about the Central Area Plan, but otherwise did not address the issue of assumptions for residential capacity in commercial zones.

Land in Question

Table 2, below, identifies the number of parcels and acreages within each of the mixed use and commercial zones, broken out by the existing land use identified on the parcel. (Note: publicly owned land is excluded from Table 2, since it is generally not considered available for residential use regardless of zone/plan designation.)

Table 2: Taxlots and Acreage in Commercial and Mixed Use Zones by Plan Designation and Existing Land Use

Plan Designation & Zone[12]	Existing Use	# tax lots in UGB	Total acres in UGB	Approx. # existing units built since 1998[13]
Mixed Employment (ME)	Vacant	18	35	N/A
	Residential Uses	2	3	0
	Other	40	58	N/A
Mixed Use Riverfront (MR)	Vacant	28	44	N/A
	Residential Uses	274	10	137
	Other	149	142	N/A
Professional Office (PO)	Vacant	1	1	N/A
	Residential Uses	0	0	0
	Other	0	0	N/A
Central Business District (CB)	Vacant	8	2	N/A
	Residential Uses	131	3	31
	Other*	173	31	13
Limited Commercial (CL)	Vacant	40	68	N/A
	Residential Uses	249	27	55
	Other	426	259	N/A
Convenience Commercial (CC)	Vacant	13	14	N/A
	Residential Uses	37	6	0
	Other*	134	63	3
General Commercial (CG)	Vacant	72	85	N/A
	Residential Uses	106	28	2
	Other*	301	477	3

*Includes mixed use commercial/residential.

[12] Includes only land where plan and zone both match the designation listed.

[13] Estimated based on 2014 Deschutes County assessor's data for year primary structure built and estimated number of units on each site.

Team Recommendations

- Continue to assume that the ME and PO designations are part of the employment BLI only and do not provide housing capacity.
- For the MR zone, assume potential for a mix of uses, including residential. For the "base case", rely on historical trends to establish an estimate for housing development in the MR zone, as reflected in the city's BLI memorandum. (Note: efficiency measures that would encourage additional residential development in this zone may be evaluated if appropriate.)
- For the CB and CL zones where there has been at least a small amount of recent residential development, assume potential for a mix of uses, including residential. For the "base case", rely on historical trends to establish an estimate for housing development in each zone (further work will be needed to set those estimates). (Note: efficiency measures that would encourage additional residential development in these zones may be evaluated.)
- For the CC and CG zones where there has been virtually no recent residential development, assume the land is part of the employment BLI only and does not provide housing capacity. (Note: efficiency measures that would encourage additional residential development in these zones may be evaluated.)

Medical District Overlay Zone

Issue Summary

The Medical District Overlay Zone (MDOZ) is a special planned district applied to land around the St. Charles Medical Center intended to "allow for the continuation and flexible expansion of the hospital, medical clinics and associated uses in a planned and coordinated manner."[14] The underlying zones where the MDOZ is applied are nearly all residential (RM and RH). The residential, public, and institutional uses permitted or conditionally allowed in the base zone are subject to the same regulations in the MDOZ. In addition, hospitals are allowed in the RH zone within the overlay, and other limited commercial uses, including offices, are allowed or conditionally allowed in all zones within the MDOZ. Becase of the intent of the overlay and the pattern of existing development there, the Employment Opportunities Analysis treated lands inside the MDOZ as employment land in order to capture the likelihood of medical employment use on those lands. LCDC did not challenge this assumption as part of the Remand; the Director's Report appears to reflect agreement that this land is fairly considered "non-yielding" for residential purposes:

> *"... the department has determined that approximately 215 acres of the 341 RH inventory is included within the Medical District Overlay Zone, which is anchored by St. Charles Hospital. ... A review of existing land uses within the overlay zone's RH-designated area shows that a majority is devoted to the hospital and related medical uses, including satellite facilities and offices, as well as what appears to be a potential hospital expansion area. Most of the assisted living and nursing home units within the overlay district are actually located on medium density (RM) designated and zoned*

[14] Bend Development Code, Section 2.7.510.A.

land. Very little high density housing is found in the approximately 215-acre area of RH. This is partially confirmed by the 2008 BLI, which shows only 29 nursing home dwelling units in the city's RH inventory. It can be fairly concluded from this data that these approximately 215 acres of RH lands have and will yield very little actual multi-family housing."[15]

(An updated estimate of the vacant acres by plan designation and the number of housing units built in the MDOZ since 1998 is shown in Table 3.)

Land in Question

Table 3, below, identifies the number of parcels and acreages within each of the underlying plan designations in the MDOZ, broken out by the existing land use identified on the parcel. (Note: publicly owned land is excluded from Table 3.) The MDOZ plan designations and existing land uses are also shown on the attached map.

Table 3: Taxlots and Acreage in MDOZ by Plan Designation and Existing Land Use

Plan Designation[16]	Existing Use	# tax lots in MDOZ	Total acres in MDOZ	Approx. # existing units built since 1998[17]
Convenience Commercial (CC)	Vacant	1	0.5	N/A
	Residential Uses	0	0	0
	Other	3	4.6	N/A
High Density Residential (RH)	Vacant	24	34	N/A
	Residential Uses	38	24	29[18]
	Other	57	122	N/A
Medium Density Residential (RM)	Vacant	15	27	N/A
	Residential Uses	39	19	305[19]
	Other	6	10	N/A

Of the roughly 60 acres of vacant land with residential plan designations within the MDOZ, roughly 10 acres is owned by the hospital or other identifiable medical businesses and institutions or is part of a business park subdivision.

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[15] DLCD Director's Report, page 35.

[16] There are a few lots designated RM and zoned RH within the affected land, but no other plan/zone conflicts.

[17] Estimated based on 2014 Deschutes County assessor's data for year primary structure built and estimated number of units on each site.

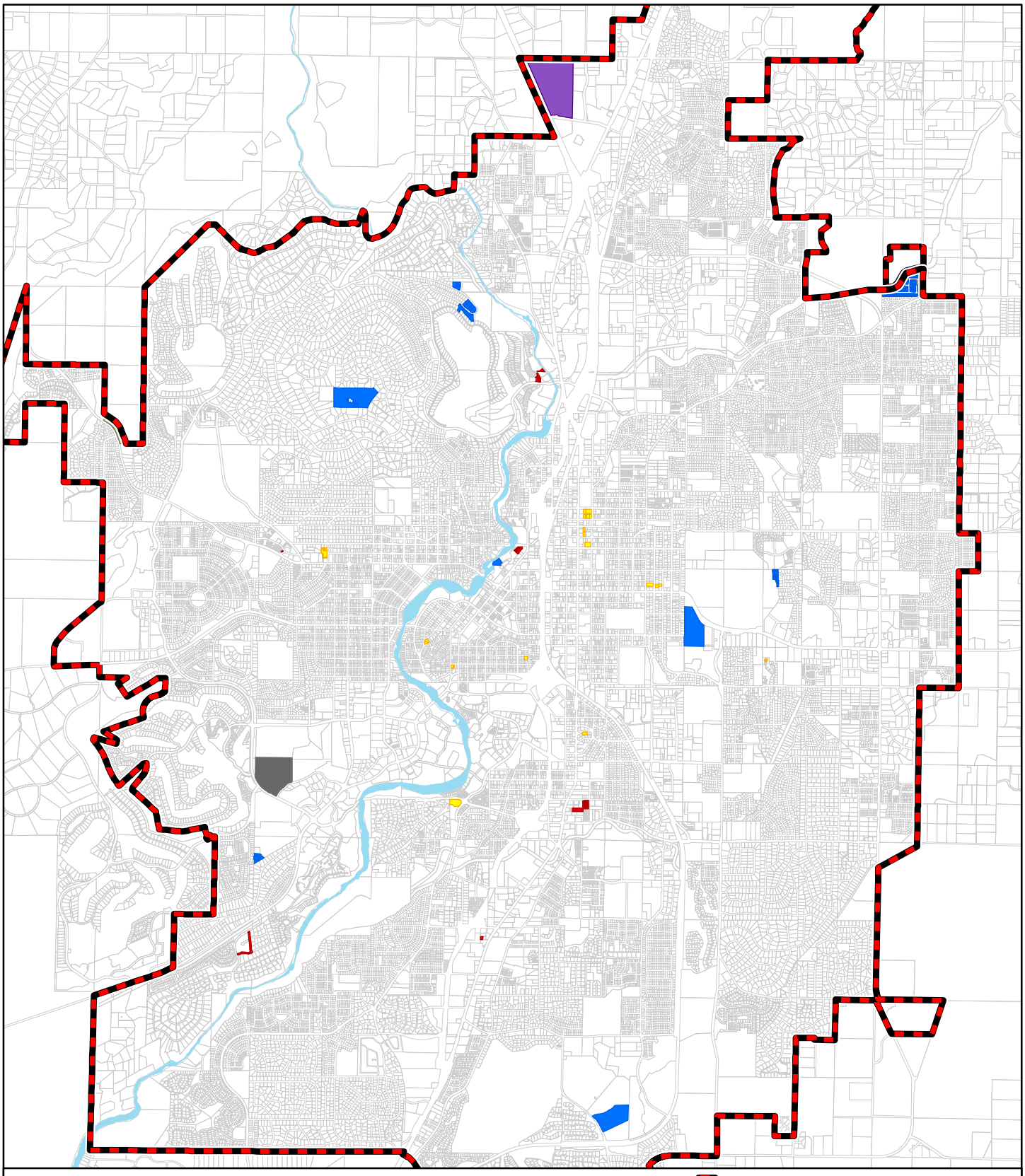
[18] These units all represent nursing home units. Two additional nursing homes and one transitional housing facility have been built in the RH zone since 1998 for which unit counts are not available.

[19] Of these units, about 80 are duplexes or apartments, and the remaining about 225 units are nursing home units.

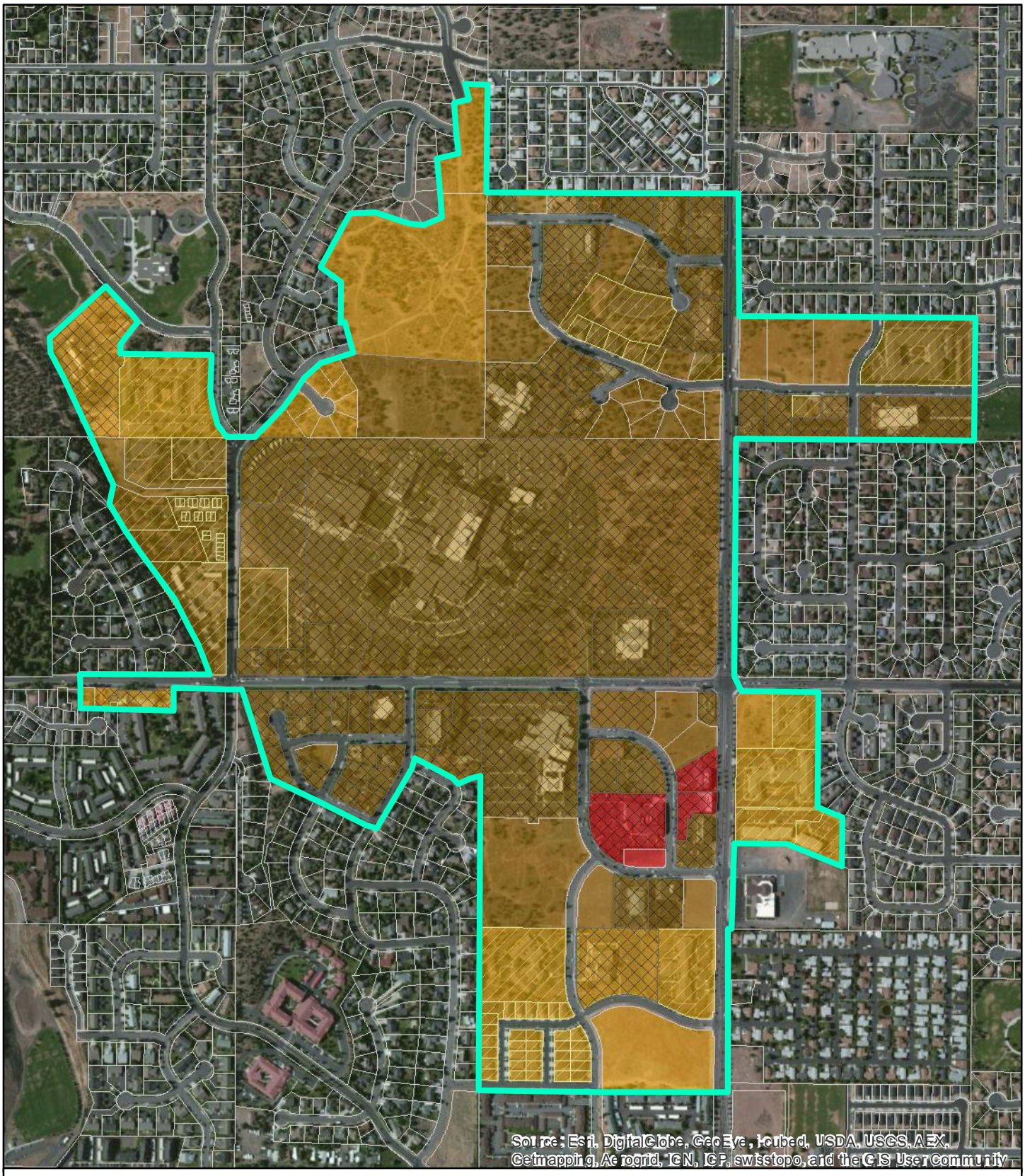
Team Recommendations

Treat all land within the MDOZ as employment land. Consistent with other employment land where residential uses are allowed and history shows some evidence that housing has been built since 1998, estimate the potential for housing development on the RH and RM zones within the MDOZ based on historical trends for the “base case”. (Note: efficiency measures that would encourage additional residential development in this zone may be evaluated if appropriate.)

Residential / Non-Residential Plan-Zone Conflicts Inside UGB



Medical District Overlay Zone



Prepared 10/29/2014

URBAN GROWTH BOUNDARY REMAND

BEND

MDOZ Boundary
Taxlot

Existing Use
Vacant
Residential
Other

General Plan
CC
RH
RM

NORTH

0 250 500 1,000
Feet

Memorandum

November 10, 2014

To:	Residential Lands Technical Advisory Committee Employment Lands Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	Base Case UGB Capacity Approach

INTRODUCTION

What is the "Base Case"?

The "Base Case" is a spatial projection of housing and employment growth through 2028 within the current UGB based on past trends and current policies, utilizing the Envision Tomorrow model. The Base Case represents the current UGB's remaining capacity **prior** to applying assumptions regarding new residential efficiency measures and measures to encourage additional redevelopment of employment areas. It does not identify housing or employment need; rather, it provides an estimate of how much of the identified need[1] we can expect to be met within the current UGB if no policy changes are made.

What is the purpose of the Base Case?

The reason to create a Base Case is two-fold: first, to understand the remaining UGB capacity as of 2014 if no policy changes were made; and, second, to compare the impacts of alternatives that incorporate efficiency measures for how they change UGB capacity, travel behavior (and vehicle miles traveled), and other indicators relevant to the Project Goals.

How does the Base Case relate to policy documents?

The team's working assumption is that the Base Case will be consistent with information on past trends documented in the draft Housing Needs Analysis (HNA), residential Buildable Lands Inventory (BLI), and Economic Opportunities Analysis (EOA). Exactly where the results of the Base Case get documented is yet to be determined – they may be captured in the HNA and

[1] Note that the housing and employment need for the period from 2014 through 2028 will need to be adjusted from the original 20-year projections to account for housing and employment growth that has occurred since 2008. That growth has met some portion of the need for various types of housing and jobs. The team will examine how much housing by type has been developed between 2008 and 2014, and then subtract these from the projected needed housing by type; the remaining need (the difference between the original projection and the increment added since 2008) is what will be compared against the UGB capacity. A similar update will be done for employment, subtracting the net job growth between 2008 and 2014 from the projected job growth through 2028 to estimate remaining employment growth.

EOA, or they may be summarized in an "Urbanization Report" that focuses on how the housing and employment needs identified in the HNA and EOA will be met.

Discussion Questions for Technical Advisory Committees

The Residential Lands Technical Advisory Committee (Residential TAC) and Employment Lands Technical Advisory Committee (Employment TAC) are asked to review the approach and general assumptions summarized below and endorse or suggest revisions to this approach.

BASE CASE ASSUMPTIONS

Land Base

The Base Case will utilize an updated 2014 buildable lands inventory, developed using the definitions and assumptions detailed in the two BLI policy issue memorandums (refined based on TAC direction as needed).

Assumptions about Future Residential Development

In general, assumptions about the amount, type and density of residential development expected within each zone will be based on analysis of "the amount and type of development that has occurred on the vacant and redevelopable lands since [the city's] last periodic review," as required by the Remand.[2] This analysis has largely been done for the 1998-2008 period (the period from the city's last period review to the time of the Remand) as part of the work to date to update the BLI and HNA. The city's continued reliance on the 1998-2008 data analysis is justified because the residential development in the city since 2008 has largely been limited to building individual homes on lots created before 2008, due to the economic downturn.[3] This means that the density for the development was set prior to 2008 for nearly all recent residential building activity.

Development in Residential Zones on Vacant Land

- **Vacant parcels that are large enough to be allowed to develop with more than one unit and are not subject to CC&Rs restricting infill**:
  - Rely on observed housing mix in each zone/plan designation for 1998-2008[4]
  - Rely on observed net density for each housing type in each zone/plan designation for 1998-2008 (or minimum density, where above observed density)[5]
  - Rely on gross-to-net acreage reductions in line with the right-of-way factor and other land needs factors established in the HNA and EOA (may vary by parcel size and/or zone)

[2] Land Conservation and Development Commission (LCDC) Remand Order, page 26.

[3] Land use permit data indicates roughly a dozen residential subdivisions and two multi-family development projects approved since 2008, all in 2013 and 2014, compared to between 600 and 700 single family homes built since 2008 on platted lots.

[4] See Attachment A to City's BLI memo.

[5] See Attachment A to City's BLI memo.

- **Vacant parcels that are not large enough to be allowed to develop with more than one unit or subject to CC&Rs restricting infill:** assume one unit per parcel

Development in Residential Zones on Land "Developed with Infill Potential"

- Use observed trend data to estimate % of these acres likely to experience infill by parcel size and zone
- Use observed trend data to estimate mix and density of infill development by parcel size and zone[6] (or minimum density, where above observed density)

Development in Residential Zones on "Partially Vacant" Land

- Use trend data to estimate % of these acres likely to experience additional development by zone[7]
- Observed net density for each housing type in each zone/plan designation (or minimum density, where above observed density)[8]

Development in Residential Zones on "Developed" Land

- Assume no redevelopment on land that is classified as developed – this land does not have additional capacity for growth based on the zoning, existing development, and/or restrictions such as CC&Rs.

Development in Commercial and Mixed Use Zones

- Use trend data to estimate amount of residential development expected through new development and/or redevelopment
- Observed net density for each housing type in each zone/plan designation[9]

Assumptions about Future Employment Land Development

In general, assumptions about the amount, type and density of employment land development on vacant land will be based on historical trends analysis for various sub-categories of land, except for redevelopment, which will be estimated as has been described in previous memos to the Employment TAC. Much of the historic trend work was done for the 1998-2008 period as part of the EOA and, with few exceptions, the Remand does not require that it be re-done.

Development on Vacant Employment Land

- Observed employment density & mix of employment types by plan designation[10]

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[6] See City's BLI memo, page 15. This analysis will need to be updated to account for exclusion of land with restrictive CC&Rs.

[7] See City's BLI memo, page 14. May need to be updated to estimate as a percent of land classified as Partially Vacant.

[8] See Attachment A to City's BLI memo.

[9] See City's BLI memo, pages 17-18. In addition to the MR and ME zones, which were addressed in the BLI memo, a new analysis of residential development in other employment zones will need to be done for the 1998-2008 period.

[10] See EOA Table 37, page 105.

- Factor in gross-to-net conversions based on assumptions from the EOA: 1) private and public rights-of-way, and 2) land for institutional, private open space, and other land, and 3) vacancy rate[11]

Redevelopment in Industrial / Mixed Employment and Commercial and Mixed Use Zones

- Updated redevelopment analysis by district based on current zoning and achievable rent levels, as described to the Employment Lands Technical Advisory Committee in other memos

TEAM RECOMMENDATION

The team recommends that the TAC approve the above-recommendations (or as modified by TAC discussion) for use in the Base Case analysis.

[11] See EOA pages 108-109 for assumptions on rights-of-way and lands for institutional/open space uses. Vacancy Rate was updated by the Remand Task Force (see July 28, 2011 Remand Task Force materials on Remand Subissue 5.6).

Memorandum

November 10, 2014

To: Residential Lands Technical Advisory Committee
Employment Lands Technical Advisory Committee

From: Bend Staff
APG Consulting Team

Re: Juniper Ridge Land Use Planning

This memorandum summarizes the master plan proposed for Juniper Ridge in 2008, and the subsequent land use actions creating the Juniper Ridge Overlay Zone.

JUNIPER RIDGE MASTER PLAN

The City initiated the master planning process for Juniper Ridge in 2003 with a set of guidelines endorsed by the Bend City Council for creating a new employment center in Central Oregon. The guidelines included:

- Light Industrial/Research Park;
- Mixed Use Development;
- Wide buffer areas;
- Future college campus;
- Pathways, parks and open space on over 10% of the site
- New transportation interchanges and;
- Incentives for sustainable development

Following a 16-month public process, a preferred plan for Phase 1 of Juniper Ridge emerged (see Figure 1). The city used this preferred plan as the basis for issuing a "Request for Qualifications" to hire a design team to deliver a master plan and future development opportunities for Juniper Ridge. The City hired the Juniper Ridge Partners to develop the Juniper Ridge Technology and Research Park.

The total land area within Juniper Ridge owned by the city is 1,500 acres. Approximately 494 acres is located within the existing City limits. The master plan developed by Juniper Ridge Partners included a plan for the entire 1,500 acres (see Figure 2). The goal of the master plan was to create a vibrant place with a variety of land uses including residential, industrial, office and commercial, a university and parks and open space interwoven in a mixed-use development. It was important that the new mixed-use community was walkable and provided a range of building types and densities.

Figure 1: Juniper Ridge Phase 1 Preferred Plan

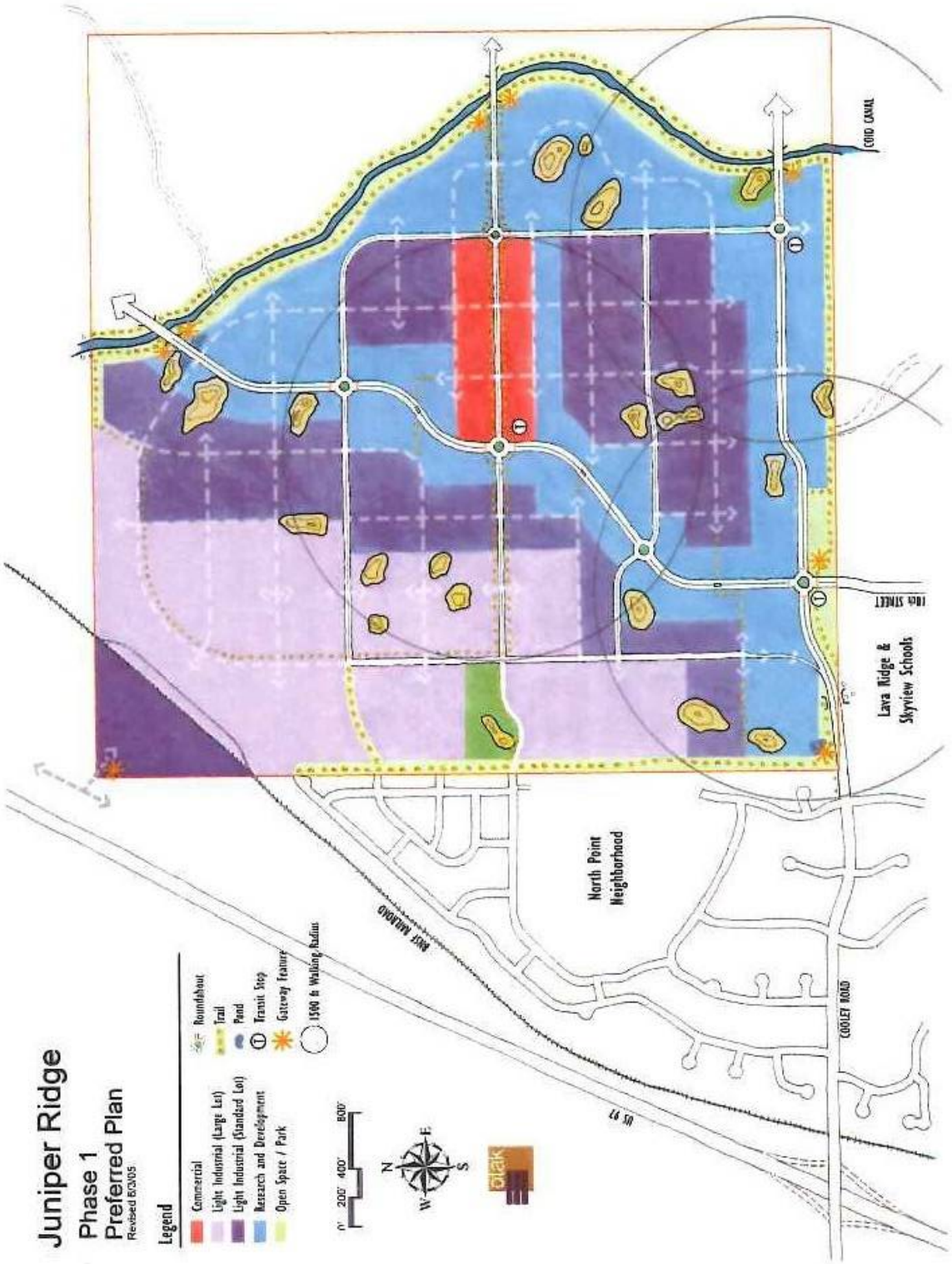


Figure 2: Juniper Ridge Master Plan

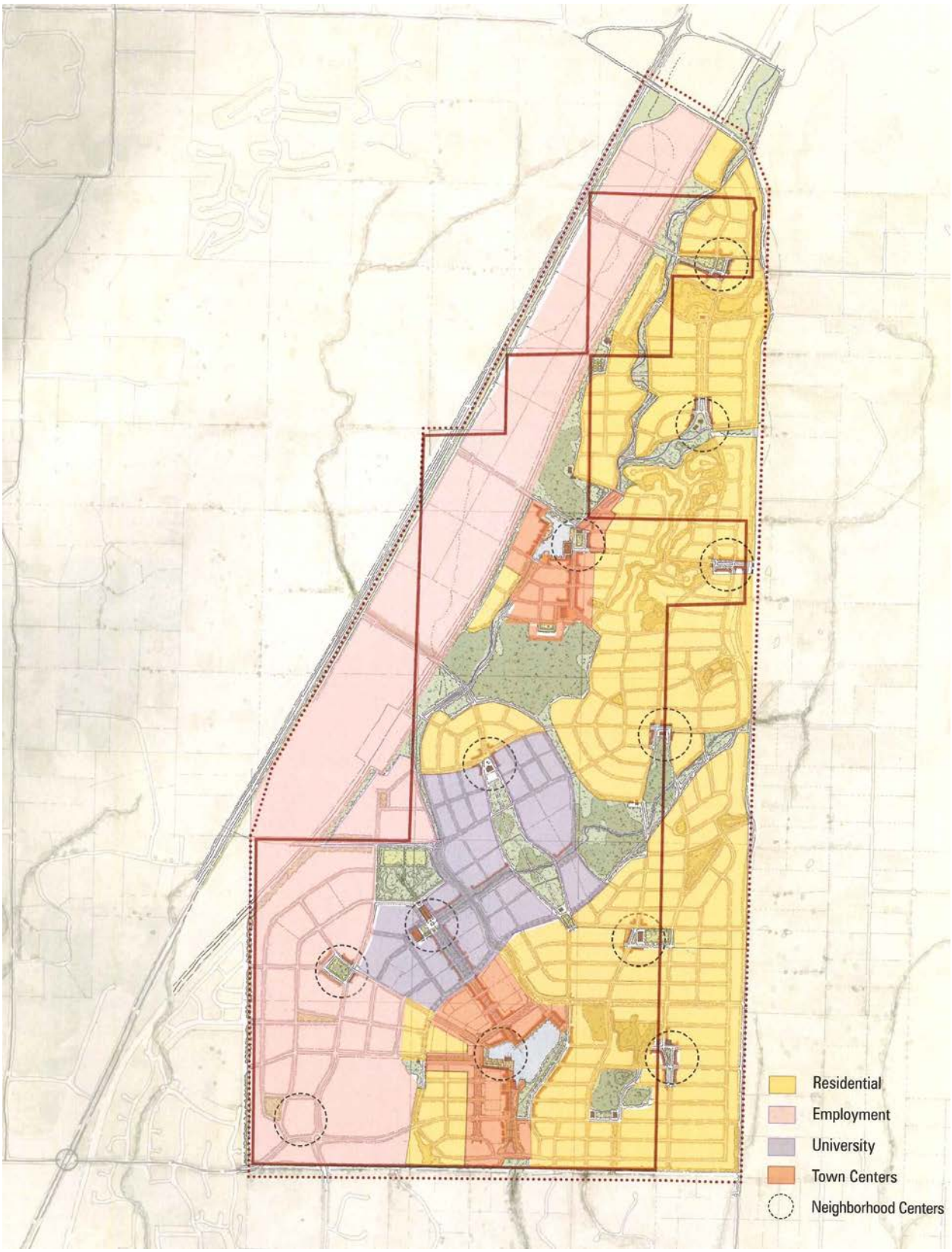
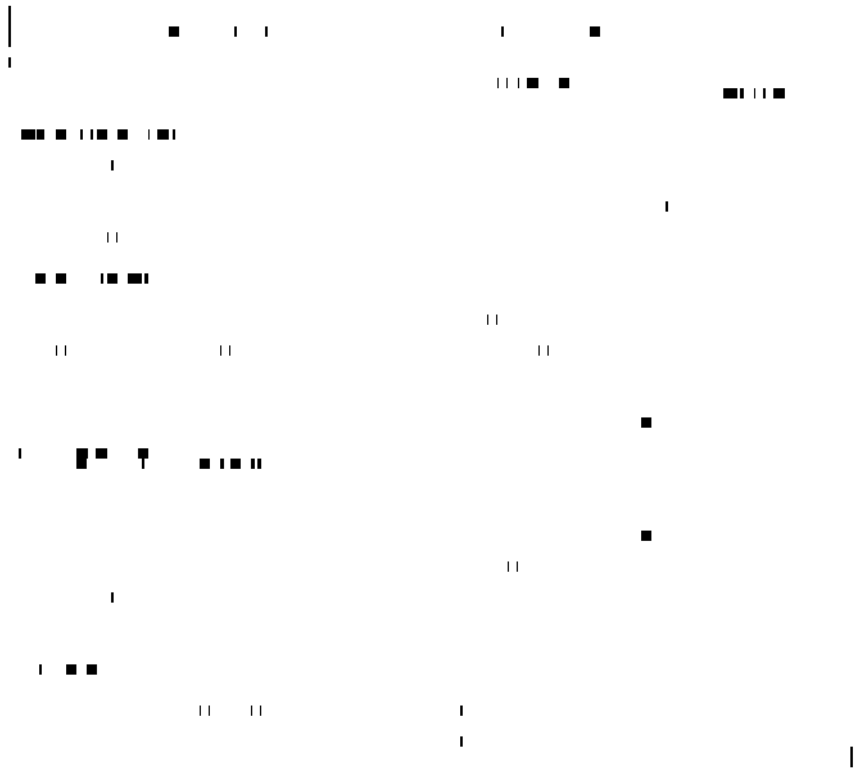


Table 1 lists the mix of uses and building types contemplated in the Master Plan and the approximate number of acres and the densities proposed.

Table 1: Juniper Ridge Master Plan Development Program

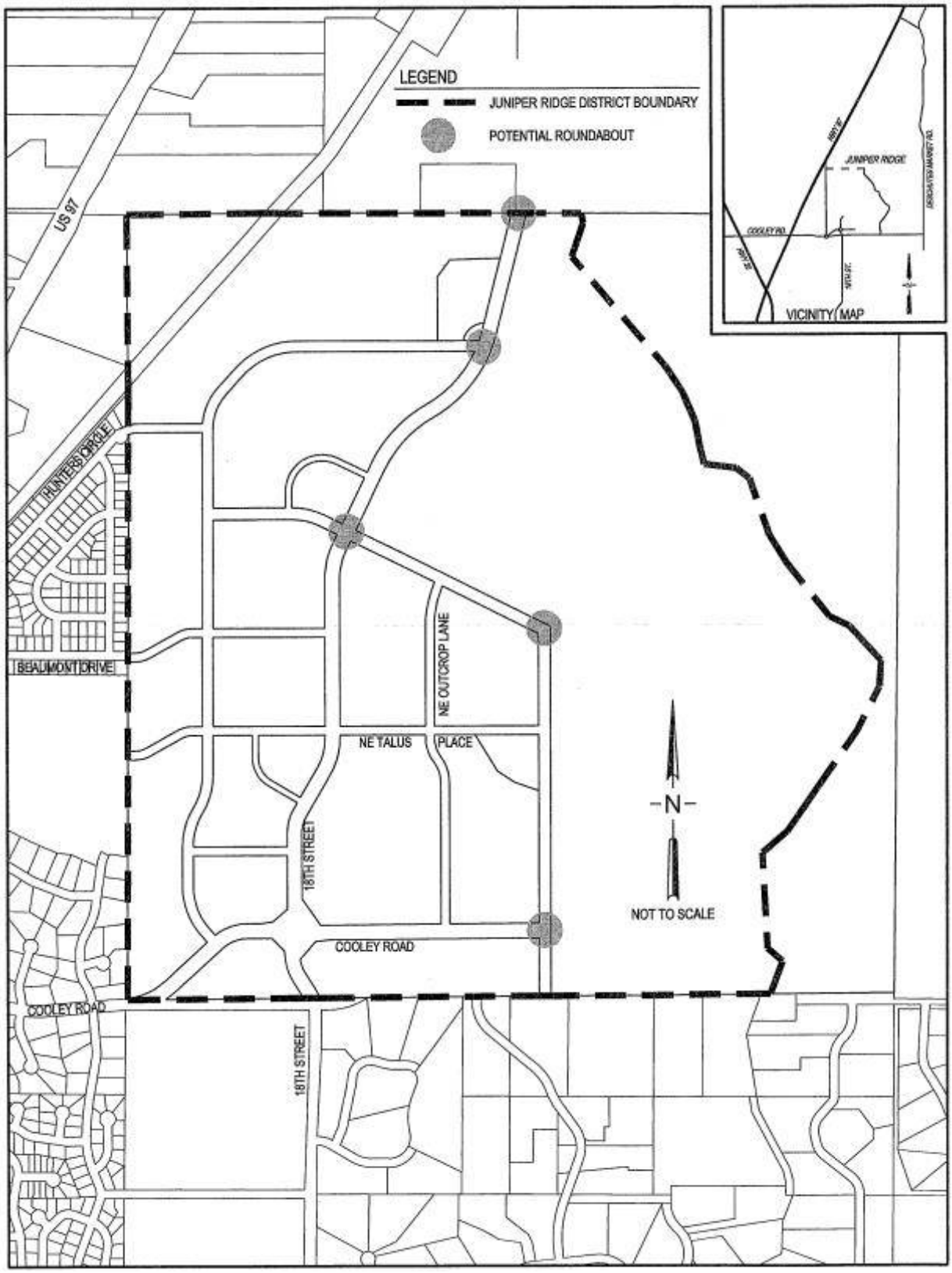


JUNIPER RIDGE OVERLAY

The Juniper Ridge Overlay Zone was adopted in 2010 to provide opportunities for the development of employment uses within the first phase of Juniper Ridge. The overlay zone encompasses 306 acres of land. The development layout is consistent with the master plan developed by Juniper Ridge Partners and discussed above (see Figure 3).

The Overlay Zone provides specific development standards including building setbacks, building heights, fencing and screening, street design standards and transportation mitigation. Unfortunately, the Special Planned District does not provide any guidance on the building prototype or provide for any design review.

Figure 3: Juniper Ridge Overlay Zone



EMPLOYMENT LAND CONSIDERATIONS FROM 2008 EMPLOYMENT OPPORTUNITIES ANALYSIS (EOA)

The 2008 EOA includes an analysis of industrial land supply, input from industrial and employment land developers and users, and recommendations regarding the distribution of supplies of industrial lands. The following briefly summarizes key points related to Juniper Ridge and industrial land supplies in the EOA for sake of background and discussion by the Residential and Employment TACs as they consider any potential changes to the type and mix of land uses for the portion of Juniper Ridge inside the current UGB.

Any changes to future plan designations at Juniper Ridge will have impacts on industrial land supplies and the location of new industrial areas inside the current UGB, or in any expansion areas. Simply put, if land with a plan designation of Industrial Light (the plan designation for land at Juniper Ridge inside the current UGB) is converted to another use like residential or commercial, then an equivalent amount of land would likely need to be provided elsewhere in any UGB expansion area.

Mentions of Juniper Ridge occur throughout the 2008 EOA. With respect to land supply, pages 91-99 illustrate that Juniper Ridge is one of a handful of vacant parcels over 20 acres inside the current UGB. At the time, it also represented 59% of the total land supply for industrial and mixed use employment land for the planning period. "Effectively, the entire supply of new large industrial sites in Bend would be in one location and under one ownership if no other industrial and mixed use lands are added to the UGB. This presents a number of potential problems. First, well documented transportation deficiencies near Juniper Ridge limit the marketability of this parcel for years. Second, many potential industrial site users may not find the Juniper Ridge location ideal form a number of standpoints. Third, the private sector has no opportunity to compete with the city in terms of price, location, and supply if no additional land is made available."[1] However, there may also be advantages of public ownership as well, including the possibility of low holding costs, and a patient land owners, or for the city to focus on encourage targeted industries to locate at Juniper Ridge.[2]

Policy input from stakeholders and decision makers at the time the EOA was written encouraged industrial lands to be distributed around the 2009 UGB expansion area to provide a greater mix of locations, ownerships, regulatory models and controls, flexibility and choice in the market, and decreased development limitations due to infrastructure shortfalls in specific locations.[3] The contested "market choice" factor was introduced in part to provide additional supplies of new industrial land outside of Juniper Ridge since the 2008 EOA predicted sufficient supplies of industrial land were available for the 20-year planning period.

While the final land need analysis for industrial land is not complete at this time, recent Employment TAC direction and USC approval to not apply a market choice factor suggests that

[1] Page 97 EOA.

[2] Page 64 EOA.

[3] Page 113 EOA.

significant new supplies of industrial and mixed use land are not likely to added to the expanded UGB. Changing the mix of future land uses at Juniper Ridge may be one way to create new industrial areas inside, and outside the current UGB.

PUBLIC INPUT ON JUNIPER RIDGE THROUGH METROQUEST

The Bend Urban Growth Boundary Remand MetroQuest Survey (survey) collected input from the public about the proposed project goals, their relative importance, and the level of support for project strategies among members of the community from July 31, 2014 through August 24, 2014.[4] One part of the survey asked users "Where should we guide growth and change to accomplish our strategies?" and instructed users to drag markers on the map to indicate where changes or improvements should happen over the next 15 years. A comment could be included with each pin as well. A land use tab asked users to indicate where they would like to see more:

- Housing (Apartments, Townhomes, 2-3-4-Plex Homes, Single Family Homes, Mixed Use)
- Shopping (Small Neighborhood Centers, Larger Retail Centers, Other)
- Employment (Small Industrial, Offices, Large Industrial, Other)
- Other

The most common uses identified for Juniper Ridge include large and small industrial, offices, single family homes, residential mixed use, and small neighborhood centers. A number of participants also mentioned Oregon State University (OSU) for this area. Nearly half of the pins on Juniper Ridge were for Employment uses (roughly 65 pins). Another 25% of pins were for residential uses (roughly 35 pins), with the remainder split between shopping and other (largely indicating OSU in comments).

[4] More detailed information about the survey can be found in the Metroquest Survey: Project Goals & Strategies report: http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=18710

Memorandum

November 10, 2014

To:	Residential Lands Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	Land Use Efficiency Measures through Development Code Changes

INTRODUCTION

Summary of Previous Work

The Residential Lands Technical Advisory Committee (Residential TAC) has been given an overview of a range of possible efficiency measures that Bend can or must consider and the legal requirements for consideration of efficiency measures in the "Introduction to Land Use Efficiency Measures" memorandum dated August 19, 2014. Measures focusing on increasing density on large blocks of vacant land were explored in the "Land Use Efficiency Measures Context and Opportunity Sites" memorandum dated October 7, 2014.

The October memorandum on efficiency measures also discussed the many objectives that efficiency measures can help achieve, in addition to meeting housing mix and density needs, including: realizing the project goals, advancing urban form principles, and reducing Vehicle Miles Traveled (VMT). In particular, goals like providing a mix of housing types within neighborhoods, offering a variety of high-quality housing options, and protecting the character of historic neighborhoods are all important to keep in mind in considering efficiency measures affecting residential land.

Focus for this Memorandum

This memorandum focuses on potential modifications to the development code that could be applied to residential zones throughout the city to encourage development of needed housing types and/or encourage more efficient use of residential land. It also includes one financial incentive that could be applied for certain types of development, regardless of location within the city.

The Director's Report from the Department of Land Conservation and Development (DLCD), which was referenced and endorsed in the Remand, requires the City to consider measures including the following:

- "measures to encourage needed housing types within additional areas of the city"[1]

[1] DLCD Director's Report (Bend UGB Order 001775), pages 39 and 46.

- "strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types"[2]

Additional measures identified by the project team and/or included in a workbook titled "Planning for Residential Growth: A Workbook for Oregon's Urban Areas" produced by DLCD were included in the initial list of potential measures for consideration in the August memorandum. A subset of those measures that could be addressed broadly through a change to the development code (as opposed to a site-specific change of plan/zone designations or other location-specific policies or incentives) is included in this memorandum, with additional detail on the nature of the potential code amendments. The potential code amendments are proposed to be grouped into two packages for the purposes of testing their impacts on the capacity of the current UGB (and other performance measures): a "conservative" package and an "aggressive" package.

Future Work: Analysis of Impacts

The discussion of potential code changes that could encourage development of needed housing types and/or encourage more efficient use of residential land feeds into the creation and testing of scenarios for the existing UGB using the Envision Tomorrow model. The next step for the project team will be to roughly estimate the magnitude of the potential impacts of each package, intentionally erring on the side of being optimistic, in order to determine the order of magnitude of their collective impact. This will be done by translating each of the measures in each package into revisions to the assumptions about future development that are built into the Base Case based primarily on professional judgment. If the preliminary estimate of the potential impact shows that they could substantially affect current UGB capacity if successful, it will be worth the effort to further research, quantify, and refine the assumptions about impact in order to show that the measures "demonstrably increase the likelihood of higher density residential development", as required by ORS 197.296(9) and to rely on them to help meet the city's housing need.

The development code efficiency measures will be combined with location-specific measures, such as zone changes and targeted incentives, to create scenarios for future development inside the existing UGB. These scenarios will be refined and narrowed; the preferred option or options will determine the residual land need to be met through UGB expansion (this may be a range).

POTENTIAL DEVELOPMENT CODE EFFICIENCY MEASURES

Summary of Draft Recommendations for Further Evaluation

The set of potential changes in Table 1 builds on the information provided in the August memorandum, offering specific ideas for how existing regulations could be modified in order to implement certain efficiency measures. Measures are grouped into categories where they

[2] DLCD Director's Report, pages 39 and 46.

address a similar issue (column 1 reflects the category). The right-hand columns identify which measures and changes are preliminarily recommended to be included in each package.

Density Standards: Multiple Options

One of the measures identified in Table 1, increasing minimum gross density standards in RS and RM zones, merits additional discussion of alternative approaches to achieve the same objective. Currently, the RS, RM and RH zones span the range of densities from 2.2 to 43 units per gross acre with three zones and no gaps. As a result, minimum density standards are fairly low in the RS and RM zones, and both zones allow a wide range of gross densities.

- Standard Density Residential (RS): 2.0 – 7.3 units/gross acre
- Medium Density Residential (RM): 7.3 – 21.7 units/gross acre

Based on data from 1998-2008 included in the draft BLI, average density of development (for all housing types) in the RS and RM zones for that period was close to the mid-point of the allowed density range:

- RS: 4.9 units per acre
- RM: 13.4 units per acre

In order to get new development to consistently build in the upper end of the density range, there are three main options:

1. raising minimum densities in the RS and RM zones
2. splitting each of the RS and RM zones into two zones with different density ranges (e.g. RS-1 and RS-2, RM-1 and RM-2)
3. keeping the current RS and RM zones with their current density ranges, but adding a variant of each zone with a higher minimum density (e.g. RS-2 and RM-2)

Raising minimum densities could be done across the city and would apply only to new development and redevelopment (it would not make existing development non-conforming). However, it would leave “gaps” of densities that are not permitted to be built within the city any more (the range between the existing minimum and the new minimum in each zone). It could also increase the contrast between infill areas and existing development (existing neighborhood compatibility standards could limit this effect).

Splitting the RS and RM zones into a total of four zones, with each covering a different but smaller density range would allow all densities from 2.0 to 43 to continue to be possible somewhere in the city. The zones could be applied to respond to existing development patterns, topography, infrastructure capacity, and/or other factors. It would also better protect areas currently developed near the bottom of the density spectrum where infill is determined not to be appropriate by limiting the maximum potential density to closer to what exists today. However, this approach would require rezoning most of the city to select the appropriate sub-zone for each area, even if changes are not proposed for the area. Creating a version of RS-1 that covers just the low end of the density range might also allow this new zone to be applied to certain areas currently designated RL, to facilitate slightly higher density development patterns

without allowing as great a contrast from the existing density range in the RL zone as if the current RS zone were used.

Keeping the existing zones but also creating variants with higher minimum density would allow stable developed areas to retain their existing zoning, but would allow the higher minimum density versions to be applied to areas with more (re)development potential.

The project team's working recommendation is the third option – keeping the existing zones but also creating variants with a higher minimum density to be applied in areas with more vacant land or land with infill/redevelopment potential, and to support existing or emerging Urban Form considerations.

Density Needs Good Design

As the community considers options to increase infill potential and residential density of new development, additional design standards, particularly for single family development in infill situations and on small lots, may be needed in order to ensure that new development is attractive and does not result in too much of a single building style in one place. (There are existing architectural design standards for duplexes and triplexes, townhomes, accessory dwellings and multifamily housing, but not for single family detached homes.) The design standards could focus on building design elements such as roof pitch, windows, setback variations, massing and height variations, and architectural elements rather than using tools like setbacks and larger lots to provide compatibility. Such design standards are not included in Table 1 because they are not an efficiency measure in themselves; however, they may need to be included in any package of code amendments that does include efficiency measures. If the Residential TAC believes this is an important consideration, the project team suggests policy recommendations for design standards be included with policy recommendations supporting more infill or higher density development. The current scope of work does not include the timing or resources for design standard code development, but such work could take place on the heels of the UGB adoption process.

Discussion Questions for Residential TAC

The Residential TAC is asked to provide feedback on the draft packages of efficiency measures indicated in the right-hand columns of the table:

- Are the right measures included in each package?
    - Is the conservative package too conservative?
    - Are any of the measures included in the "aggressive" package too unpalatable to analyze further?

At this stage, the Residential TAC is not being asked to endorse either or both packages of code changes, but rather to help the project team refine which measures are appropriate to include in the packages for further testing as described previously.

In addition, the Residential TAC is asked for input on which approach to addressing density standards in the RS and RM zones should be pursued.

Table 1: Potential Efficiency Measure Code Changes and Packages

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
Density Standards	(1) Increase minimum density standards in RS and RM zones	a) Increase minimum gross density from 2.0 to 4-5 DU/acre for RS (or RS-2)	✓ (4 DU/ac min)	✓ (5 DU/ac min)
		b) Increase minimum gross density from 7.3 to 10-12 DU/acre for RM (or RM-2)	✓ (10 DU/ac min)	✓ (12 DU/ac min)
	(2) Limit and clarify exceptions to minimum density standards	a) Revise exemptions in 2.1.600.B.7 and 8 to be limited to exempting a single family home on an existing platted lot, rather than exempting any redevelopment or infill within an existing pattern of development (but consider allowing a lower minimum density for small infill sites, e.g. under an acre)	✓	✓
Permitted Housing Types	(3) Allow Accessory Dwelling Units (ADUs) in all single family zones	a) Permit ADUs outright rather than conditionally in SR 2 1/2, RL and RS zones on lots created prior to December 1998 subject to ADU and design standards		✓
	(4) Allow cluster / cottage housing development	a) In RS zone, allow cluster / cottage housing up to gross density of 8-10 units/acre (vs 12 in NW Crossing), otherwise same standards as for NW Crossing	✓ (8 DU/ac max)	✓ (10 DU/ac max)
		b) In RM zone, allow cluster / cottage housing at gross densities allowed in the RM zone, otherwise same standards as for NW Crossing	✓ (14-16 DU/ac max)	✓ (16-21 DU/ac max)

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	(5) Allow duplexes & triplexes in single family zones	a) Allow duplexes & triplexes outright rather than conditionally **on corner lots** in RL & RS zones, subject to existing standards (could also include new ones, such as orientation of entrances, etc.)	✓	
		b) Allow duplexes and triplexes outright rather than conditionally **throughout** RL & RS zones, subject to existing standards		✓
	(6) Preserve the RH zone for attached housing types[3]	a) Prohibit new Single Family Detached housing in the RH zone		✓
Dimensional Standards	(7) Decrease minimum lot size/dimensions in order to allow building at higher densities with single family (attached or detached) homes	a) Decrease minimum lot size in RM zone for Single Family Detached from 3,000 to 2,500 square feet		✓
		b) Decrease minimum lot size in RH zone for Single Family Detached (if allowed, see (6)a)) from 2,500 to 2,000 square feet		✓
		c) Decrease minimum lot size in RH zone for Single Family Attached from 2,000 to 1,500 square feet		✓
		d) Reduce minimum lot dimensions in RH zone for Single Family Attached from 20' (width) and 80' (depth) to 18' (width) and 75' (depth)		✓

[3] Note: it is currently not possible to build Single Family Detached housing in the RH zone at the minimum density for the zone unless other housing types are also included in the development that increase the density. Decreasing the minimum lot size (see (7)b)) might make it possible to meet the minimum density with Single Family Detached housing.

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	(8) Reduce setback requirements to allow greater utilization of small lots and make development on smaller lots more feasible	a) Reduce front setback from 10' to 5' in RH and RM zones for Single Family Detached and Single Family Attached. Retain garage setback of 20' to ensure any parking of vehicles does not extend into public rights of way (sidewalk).		✓
		b) Change building height threshold for increased side & rear setbacks in RH & RM zones from 20' to 25' and apply only to buildings abutting the RS zone, not existing single-family housing in other zones (setbacks increase by 0.5 ft for each foot by which the building height exceeds X ft. when abutting the RS Zone)		✓
	(9) Increase or eliminate maximum lot coverage standards to allow greater utilization of small lots	a) In the RS zone, increase maximum lot coverage for two-story Single Family Attached dwellings from 35% to 50%		✓
		b) In the RM zone, increase maximum lot coverage for Single Family Attached and Single Family Detached dwellings from 40% to 60%		✓
		c) In the RH zone, eliminate maximum lot coverage requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage		✓
Parking Requirements	(10) Reduce parking requirements to reduce development	a) ADUs: waive off-street parking requirement for ADUs added to an existing developed lot in some circumstances		✓

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	cost and allow more efficient use of land	b) Duplex and triplex: reduce parking requirements from 2 to 1.5 spaces per unit		✓
		c) Multifamily housing: reduce parking requirements for affordable housing by 0.5 spaces per unit for each unit size (i.e. from 1 to 0.5 spaces per unit for studio & 1-bedroom units, from 1.5 to 1 spaces per unit for 2-bedroom units, and from 2 to 1.5 spaces per unit for 3- or more bedroom units)		✓
Special Standards for Large and Small Sites	(11) Revise or eliminate design standards for neighborhood compatibility to increase development potential of infill sites	a) Remove restriction that no more than two new lots, parcels or portions thereof shall adjoin an existing abutting property boundary	✓	
		b) Reduce minimum lot size for lots abutting existing properties 20,000 square feet or greater from 15,000 square feet to 10,000 square feet	✓	
		c) Reduce minimum side and rear yard setbacks to be halfway between normal standard and existing setback on adjacent lot rather than matching adjacent lot	✓	
		d) Eliminate the residential compatibility standards under 2.1.300(G) entirely		✓
	(12) Adjust requirements for master planning to	a) Reduce threshold to require master planned neighborhood development per 4.5.400 from 40 acres to 20 acres[4]	✓	✓

[4] Section 4.5.300.A already states that properties totaling 20 acres or larger require a Master Neighborhood Development Plan in conformance with BDC 4.5.400; however, 4.5.400.A states that the applicability is to properties totaling 40 acres or larger.

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	further promote desired housing types and densities	b) Increase minimum required density for master planned developments from 60% of maximum density to 80% of maximum density for the zone	✓	✓
		c) Strengthen requirements for providing a mix of housing types (require a certain level of mixing of unit types)	✓	✓
		d) Strengthen requirements for providing neighborhood commercial and parks/open space (require a small amount of land be used for neighborhood commercial and parks/open space when consistent with urban form opportunities maps, other factors)	✓	✓
Financial Incentives	(13) Reduce SDCs for desired housing development	a) Reduce SDCs for ADUs or small infill projects where infrastructure is already available and adequate to serve the new housing units		✓

City of Bend
Residential Lands Technical Advisory Committee
Meeting Notes – Meeting #4
Date: November 17, 2014

The Residential Lands TAC held its regular meeting at 9:00 am on Monday, November 17, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 9:04 am by Tom Kemper.

Roll Call

- ☐ Kristina Barragan
- ☐ David Ford
- ☐ Kurt Petrich
- ☐ Gary Everett
- ☐ Don Senecal
- ☐ Sidney Snyder
- ☐ Kirk Schueler
- ☐ Stacy Stemach
- ☐ Scott Edelman for Gordon Howard
- ☐ Michael O'Neil
- ☐ Mike Tiller
- ☐ Laura Fritz
- ☐ Andy High
- ☐ Allen Johnson
- ☐ Thomas Kemper
- ☐ Katrina Langenderfer
- ☐ Lynne McConnell

Discussion

Base Case. Becky Hewitt of APG gave a presentation on the base case and its use in projecting the capacity of the current UGB (See memo at page 22 of packet). The discussion focused on the base case as a business as usual projection with comments regarding trends in lot sizes and densities. Joe requested TAC approval for the team recommendations at pages 23 and 24 of the packet. Sid moved and Laura seconded and the TAC unanimously approved the recommendations.

Buildable Land Inventory follow up, including Common Areas, Golf Courses, Plan/Zone conflicts, and Commercial and Mixed Use Designations. Becky reviewed these topics to update the TAC.

- Discussion on golf courses included Al Johnson's feedback to make sure any open space does not show up in a Goal 5 inventory. TAC consensus was good with team recommendation on golf courses (See page 8 of packet).
- Team recommendation on plan/zone conflicts (See page 13 of packet). After discussion TAC consensus was concur with team recommendations on plan/zone conflicts.
- Joe and team discussed commercial and mixed use designations (See pages 15-17 of packet). TAC concurred with going forward with team recommendations on this topic at top of page 17 of packet.
- Becky then addressed the Medical District Overlay Zone (MDOZ), including the team recommendations at page 19 of the packet. TAC had no objections with team recommendations on MDOZ at top of page 19 of meeting packet.

Opportunity sites (See page 26 of packet). This discussion picked up the TAC left off at the October 13, 2014 meeting. The TAC Reviewed Juniper Ridge, the sites in Northwest Bend, and several sites in Southwest Bend.

Juniper Ridge:

- Number of acres in current UGB, current development, transportation planning that's been completed, and the potential for more housing. For closer, Joe asked for a motion to keep residential on the table for Juniper Ridge, keeping in mind, water, sewer, and transportation issues – Don moved, and Sid seconded. TAC voted aye with Andy as lone nay

Northwest Bend:

- No additional ideas for opportunity sites came up. TAC concurred with team direction on potential opportunities sites in Northwest.

Southwest Bend:

- SW-1; several issues were discussed including potential goals of the owner to retain large portions undeveloped and infrastructure issues.
- SW 2 – larger lots, steep slopes, flood plain issues, no sewer service and on a private road.
- SW 3 has some potential; along Highway 97.
- SW 4 owned by COID, discussion of COID selling to a private party for development. TAC provided input and good with team direction on evaluating these sites.

Efficiency Measures – through code changes and density (See page 33 of packet). TAC discussed team ideas, including splitting RS and RM into 2 new zones each. TAC direction to keep RS and RM zones as is today. Leave existing areas zoned RS and RM. Most of TAC supported Option 3; Andy opposed and also looking at infrastructure requirements. TAC discussion led to direction to team to consider two scenarios: one set of both code changes (Conservative plus Aggressive) with existing residential densities and one scenarios with both changes and higher residential densities.

Action Items/Next Steps

Action	Assigned To
Follow up with Kristina Barrigan on group quarters	APG and City
Modeling using all the code changes considered Conservative and Aggressive with (1) existing densities and (2) higher densities	APG team

Meeting adjourned at 12:35 pm by Joe Dills

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: Residential TAC #4

Date: November 17th 2014

Location: Bend City Hall Council Chambers

Name	Organization	Email Address
Sid Snyder		On file
Carol Jackson	property owner	" same
Scott "	" "	'jackson4@countrycablevision.net
Patrick Griffiths	COB	
MIKE TAYLOR	DSD	
Kurt Petrich	KAFP	
Lynne McConnell	Neighbor Impact	"
Laura Fritz	Planning Com.	
MIKE O'NEIL	SOLARIZ	
Krishna Barragan	Alzheimer Association	
Don Seneca	HLC	
Katrina Jangaard	HHBR	
Kirk Schueler		
Scott Edwards - 0	OCCD	
Dale VanVactor	Brook Res/Bowley	
John Russell	DSL	

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: _____

Date: _____

Location: _____

Name	Organization	Email Address
Toby Bayard	N/A	tobybayard@hotmail.com

Meeting Agenda

Employment Technical Advisory Committee – Meeting 4
Monday, November 17, 2014 2:30 PM – 5:00 PM
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Continue the discussion of, and prepare recommendations for, redevelopment on employment lands.
- Discuss and prepare recommendations for special site needs: large industrial sites, new hospital sites, university site.

At the October 13th Employment TAC meeting, the committee discussed an initial analysis of redevelopment and employment growth for 13 study areas in the City. Following up on that direction, the project team prepared an updated redevelopment analysis. The analysis brings together community input from the MetroQuest on-line outreach, site characteristics data and opportunities/constraints, residual land value analysis using the Envision Tomorrow model, and information for employment lands outside of the 13 study areas. Draft recommendations are provided for consideration by the TAC. In this meeting, our goal is to discuss the analysis and forward working redevelopment recommendations for use in the December workshop and subsequent scenario work for the existing UGB.

Special site needs – large industrial, new hospital, university – will also be discussed in the meeting. As with the redevelopment topic, our goal is to forward working recommendations (or options) for use in the December workshop and subsequent scenario work for the existing UGB.

The specific discussion questions, i.e. the feedback we would like from the TAC, are listed for each topic. They are a starting point for the agenda.

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

1. Welcome and Updates — 2:30 PM

a. Welcome and convene — Jade Mayer
b. Short report from the Residential TAC — Liaisons

2. Redevelopment Analysis — 2:40 PM

Information and action

a. Presentation: — Bob Parker, ECONorthwest
   - Short recap of framing issues – why we are analyzing redevelopment
   - Community input – the MetroQuest information
   - Principles of complete employment areas
   - Characteristics of the 13 study areas (updates)
b. TAC discussion: questions and clarifications
c. Presentation: Redevelopment potential as evaluated through residual land value analysis in the Envision model — Glen Bolen, Fregonese Associates
   - Assumptions and method
   - Findings
d. TAC discussion: questions and clarifications
e. Brief recap by staff and TAC discussion regarding redevelopment potential of lands outside the study areas
f. TAC discussion and action – does the TAC agree with the project team recommendations, or suggest modifications, regarding redevelopment rates?

3. Special Site Needs — 4:00 PM

a. Introduction and framing — Brian Rankin and Mary Dorman
b. Large industrial sites – presentation and TAC discussion
c. New hospital site – presentation and TAC discussion
d. University site – presentation and TAC discussion
e. TAC action: summary of recommendations regarding each of the special site needs.

4. Public Comment — 4:45 PM

5. Project News — 4:55 PM

a. Announcements and updates — Brian Rankin and Joe Dills
b. Workshop planning

6. Adjourn — 5:00 PM

Memorandum

November 11, 2014

To: Employment Lands Technical Advisory Committee

Cc: Bend Staff

From: APG Project Team

Re: Recommended Redevelopment Rate for Employment Lands

SUMMARY

The project team discussed the issue of redevelopment on employment lands at TAC Meetings 2 and 3. In the October memorandum to the TAC, the project team outlined a six-step process; we are now at step 4 in that process (use Envision Tomorrow tool to refine redevelopment rate assumption and provide documentation that supports the assumption used in the revised Economic Opportunities Analysis). At the conclusion of the October meeting, the TAC directed the project team to bring back a recommendation on an employment redevelopment rate at the next meeting.

The Envision Tomorrow model results identified potential for 1,358 additional jobs through redevelopment. Fifty-six percent of the redevelopment potential (768 jobs) exist within one of the 12 employment redevelopment study areas described in the October Employment TAC memorandum. The 2008 Economic Opportunities Analysis forecast a total increase of 20,599 non-shift employees for the 2008-2028 planning period. The model output suggests a base case potential for 1,359 new employees, which equates to 6.6% of total forecast employment. The 2008 EOA assumed 10%.

Based on these results, the project team recommends that the base case analysis use a redevelopment rate in the range of 6% to 7%. Note that this analysis did not model the potential impact of land use efficiency measures and new incentives designed to encourage redevelopment of employment lands—including the impact of strategies described in the Central 3rd Street Multimodal Mixed Use Area (MMA). The TAC also identified opportunities to change the plan designation of the East Downtown area from CG to CB as well as changing the plan designation of the Core Pine site from industrial to something more permissive. Having the TAC identify barriers to redevelopment will enable the UGB process to potentially remove such barriers or provide a policy basis to direct future work which will encourage redevelopment throughout the city, and in targeted areas.

The base case analysis of redevelopment potential presented in this memorandum provides a foundation for furthering discussions of specific measures the city should consider to increase employment redevelopment potential. Such an approach is consistent with community input as expressed through the Metroquest survey as well as direction provided in the Remand.

BACKGROUND

The project team discussed the issue of redevelopment on employment lands at TAC Meetings 2 and 3. In the October memorandum to the TAC, the project team outlined a six-step process; we are now at step 4 in that process (use Envision Tomorrow tool to refine redevelopment rate assumption and provide documentation that supports the assumption used in the revised Economic Opportunities Analysis). At the conclusion of the October meeting, the TAC directed the project team to bring back a recommendation on an employment redevelopment rate at the next meeting. This memorandum presents an evaluation of redevelopment potential for all employment lands in Bend and a recommended base case redevelopment rate for employment lands. The analysis focuses on 12 study areas identified by the Employment TAC and the project team. It also includes analysis of all employment land outside the 12 study areas.

In short, the analysis provides an answer to the question of "How much redevelopment capacity do existing employment lands that are classified as "developed" within Bend have?" The analysis of redevelopment potential is intended to provide evidence to support a redevelopment assumption for employment lands. The October memorandum to the TAC described the Remand requirements in detail.

The key discussion items for the November Employment TAC meeting are:

- Dees the TAC agree with the base (no efficiency measures) redevelopment rate assumptions for employment lands?
- Is the list of characteristics for "complete" employment areas complete?
- What categories of efficiency measures are appropriate for opportunity sites identified by the TAC?

As in previous meetings, these questions will be discussed in the context of urban form. The memorandum is organized into the following sections:

- **Metroquest Survey** summarizes some of the key public input and maps relevant to employment areas gathered through the on-line Metroquest survey.
- **Characteristics of complete employment districts** describes elements that would contribute to well-functioning employment districts.
- **Findings** presents the results of the residual land value analysis (using Envision) for the 12 study areas.
- **Recommendations** presents the project team's recommendations regarding a redevelopment rate assumption for employment land.

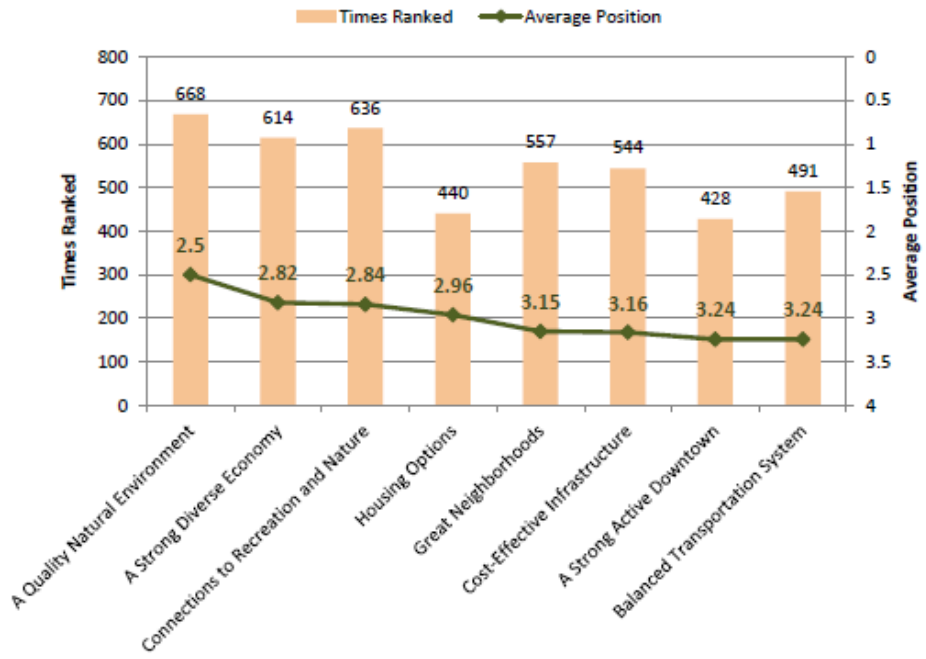
METROQUEST AND EMPLOYMENT LANDS

The city's strategy with respect to employment lands amounts to a major set of policy decisions. As such, having community support for those decisions will be essential for success. This section summarizes input received from the Bend Urban Growth Boundary Remand MetroQuest Survey

(survey) active from July 31, 2014 through August 24, 2014. More detailed information about the survey can be found in the Metroquest Survey: Project Goals & Strategies report.[1]

Goal Rankings. Respondents were asked to rank their top five project goals in order of importance. As shown in the figure below, "A Strong Diverse Economy" had the second-highest average ranking, somewhat below to "A Quality Natural Environment" and slightly above "Connections to Recreation and Nature." The combination of these three values might suggest that respondents favor employment types that do not harm Bend's natural and recreational assets.

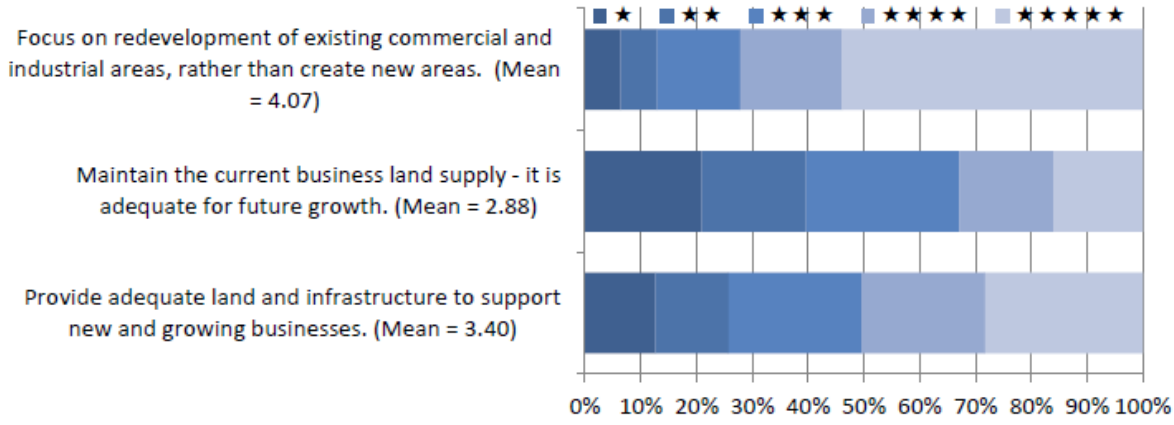
Figure 2. Project Goals Mean Rank and Times Ranked



Strategy Ratings. Respondents were asked to rate their level of support for strategies to meet these project goals. The strategies identified to attain the goal of a Strong Diverse Economy are shown in the figure below, along with their level of support among respondents. "Focus on redevelopment of existing commercial and industrial areas, rather than create new areas" received the highest average rating by a large margin. This strategy fits with the direction of the Bend UGB Remand project, which is focusing on redevelopment of existing commercial and industrial areas.

[1] http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=18710

Figure 8.Strategies: Strong Diverse Economy

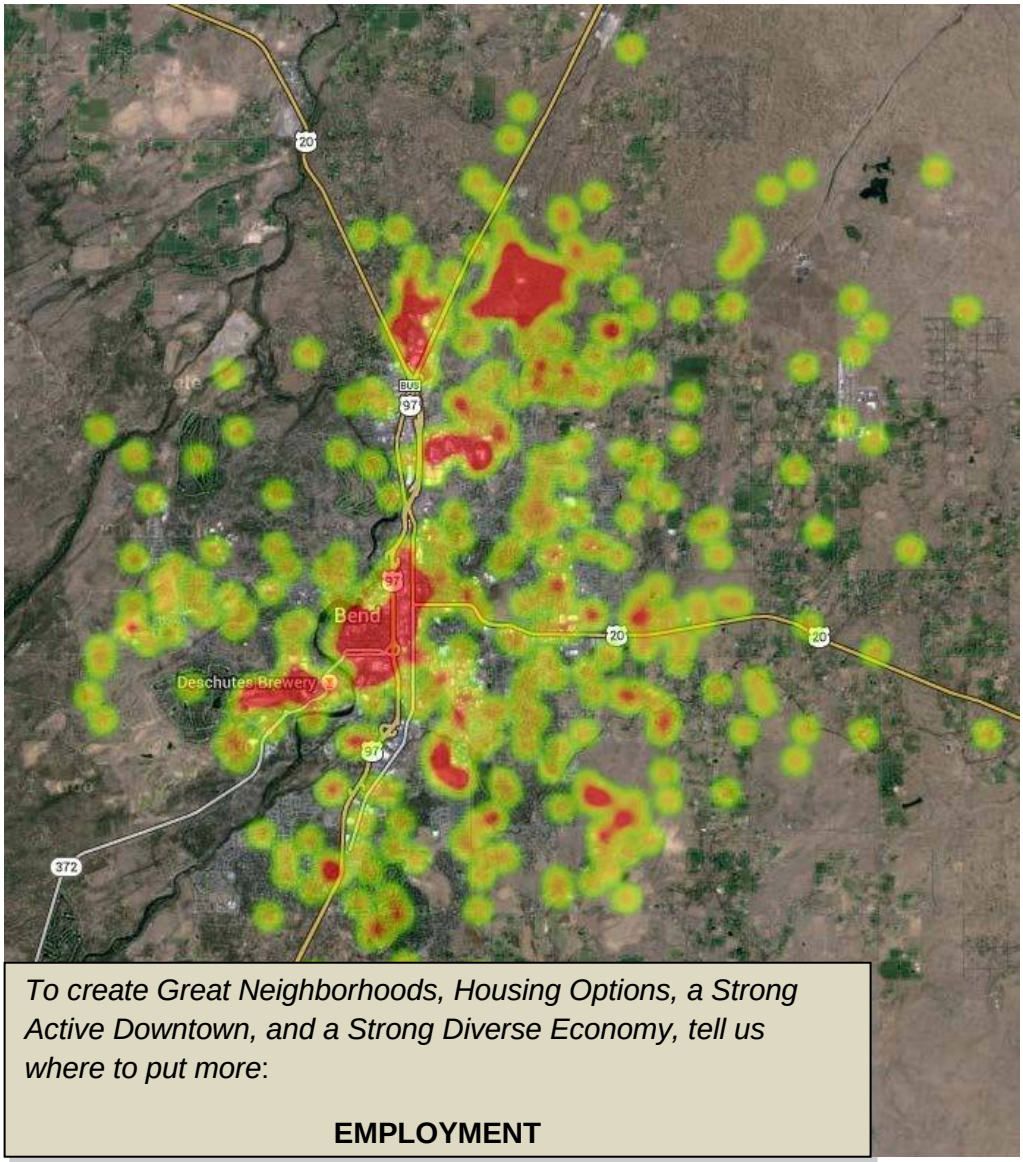


Places and Opportunities. Respondents were asked "Where should we guide growth and change to accomplish our strategies?" via a mapping exercise to place pins for Employment Land on a map, which are shown on the heatmap below. Pins could also be associated with comments.

There was clear interest among respondents for redevelopment of the 3rd street corridor (Area 3 on the Redevelopment Analysis Study Areas map) for small industrial and office uses, supporting and supported by significant multimodal transportation improvements along the corridor.

There was some interest in redevelopment in areas with access to the Bend Parkway, near the South 3rd Street Commercial area (Area 12 on the Redevelopment Analysis Map), and SW Century Drive (Area 8). The "Core Pine" area (Area 9) was called out for mixed use, office, and high-tech employment. Vertical mixed use in Galveston and Newport areas (Area 1) was mentioned, with multi-story residential above shopping.

Juniper Ridge was frequently called out for large-scale industrial uses. Areas near Cascade Village were mentioned for new employment opportunities due to their proximity to existing shopping and parkway access. There were many mentions of support for smaller-scale and locally-owned retail, as opposed to "box stores," particularly in the east side.

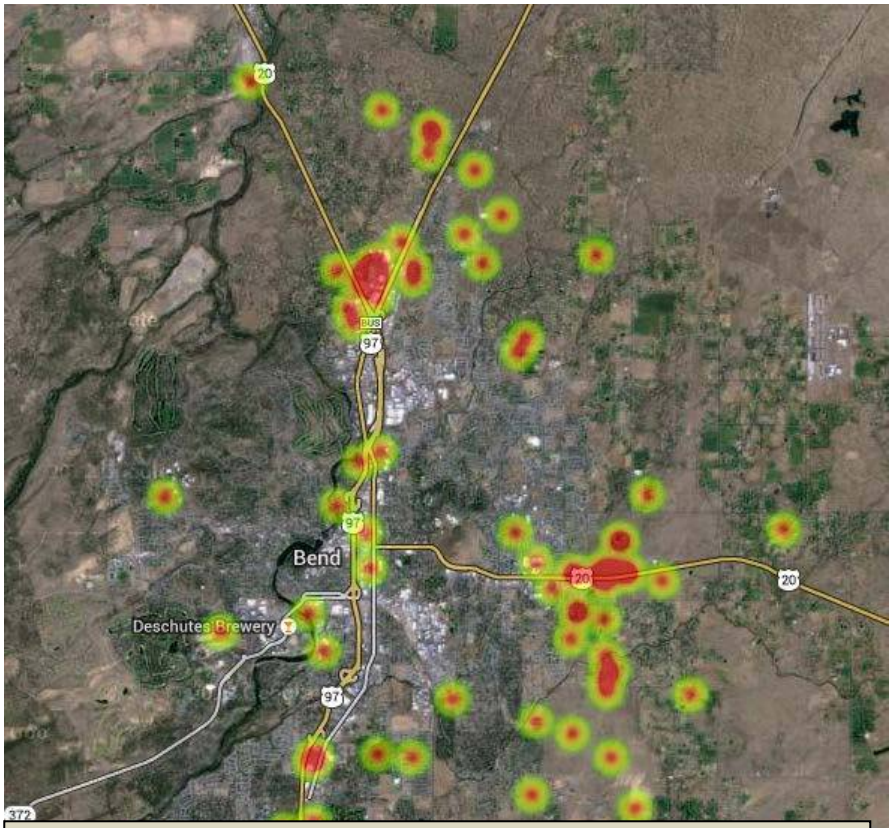


To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

EMPLOYMENT

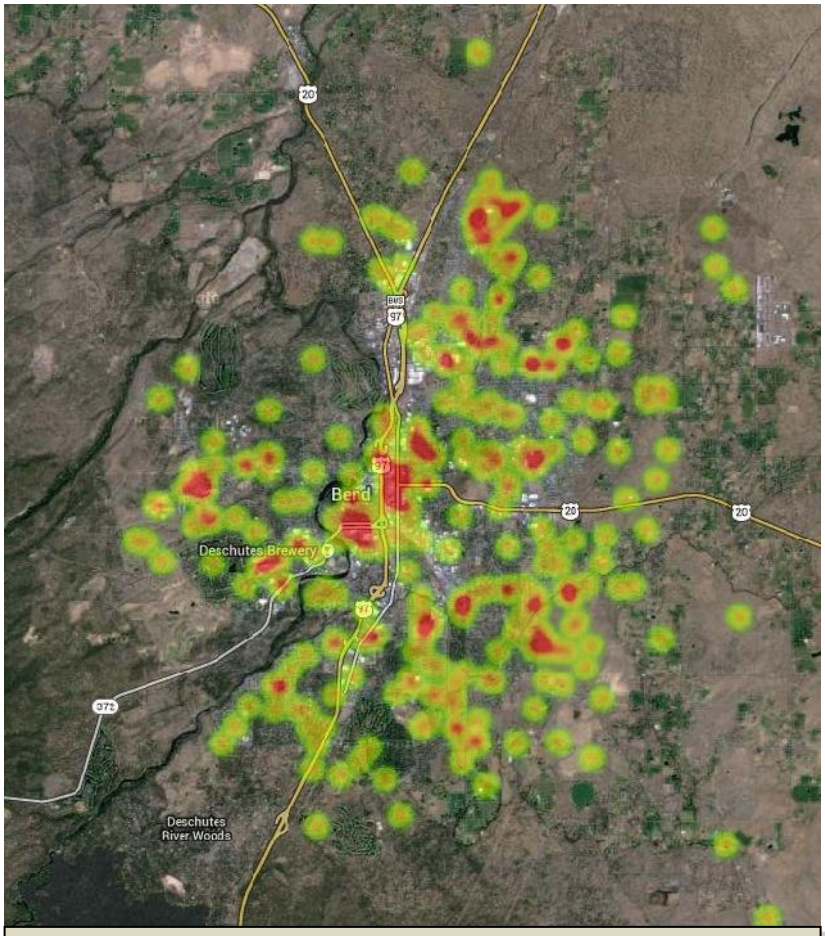
Natural Resources and Employment Conflicts. Potential conflicts arise when contrasting at least some respondents desire to increase employment lands in the western portions of the city (largely for traffic reasons) with other respondents' clear desire to protect natural areas to the west.

Shopping and Retail. Shopping and Retail suggestions were focused downtown and along 3rd Street, with frequent mention of the need for retail close to East Side residents. There were many respondents showing support for a grocery and local-serving shopping in nearly every Bend neighborhood. Shopping was often mentioned in the Old Mill district, along with multifamily housing for OSU students and bicycle/pedestrian/transit connections to campus.



To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

SHOPPING – Large Retail Centers



To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

SHOPPING – Small Neighborhood Centers

PRINCIPLES OF COMPLETE EMPLOYMENT AREAS

The TAC initiated a discussion about the broad policy intent of employment areas. The discussion built from the "complete neighborhood" concept, which is a variation on traditional neighborhood design (TND), smart growth, new urbanism, and other urban design concepts.[2]

During the October meeting, the TAC posed the practical question of "what constitutes a complete employment center?" Following are several considerations developed by the project team:

- Access: employment centers should be accessible by the full spectrum of transportation modes: auto, transit, pedestrian, bicycles.
- Connectivity: while employment centers, as defined, do not always include housing, they should have connectivity to adjacent residential areas.
- Services: employment centers should provide a range of services that are within the center or nearby. This could include restaurants, convenience stores, coffee shops and other services.
- Outdoor amenity: employment centers should have access to parks or trail systems.

The above principles establish a general framework for employment centers, but lack details on how to operationalize the principles. For example, what constitutes an employment center? This could be based on area (e.g., size), zoning, amount of employment, and other factors. The study areas identified in the following section suggest that employment centers exist in a range of sizes, locations, and functions. Other questions relate to basic measurement: how much access is adequate? How does the city determine if an employment center is well connected? How many services are needed?

These questions suggest a higher level review of objectives. What objectives does the city desire to achieve through complete employment areas? For example, reducing auto trips, providing access to employment opportunities, and reducing infrastructure costs are all potential outcomes of an employment center strategy.

The team recommends that once the character of the future development pattern of employment areas is identified (as discussed later in the memo) by the TAC, that the TAC and team consider how to enhance each employment area's chance for success by making targeted recommendations related to the urban form concepts discussed. Some of this work is already taking shape in Table 5, which will be further refined and improved over the course of the project.

[2] The Congress for New Urbanism is a good resource for information on these concepts. See http://www.cnu.org/.

FINDINGS

This section summarizes findings from the analysis of redevelopment potential. It provides general data on employment lands (e.g., amount of employment, industry, acres, etc.) for all lands and specific redevelopment study areas. It also summarizes the results of the Envision Tomorrow residual land value modeling.

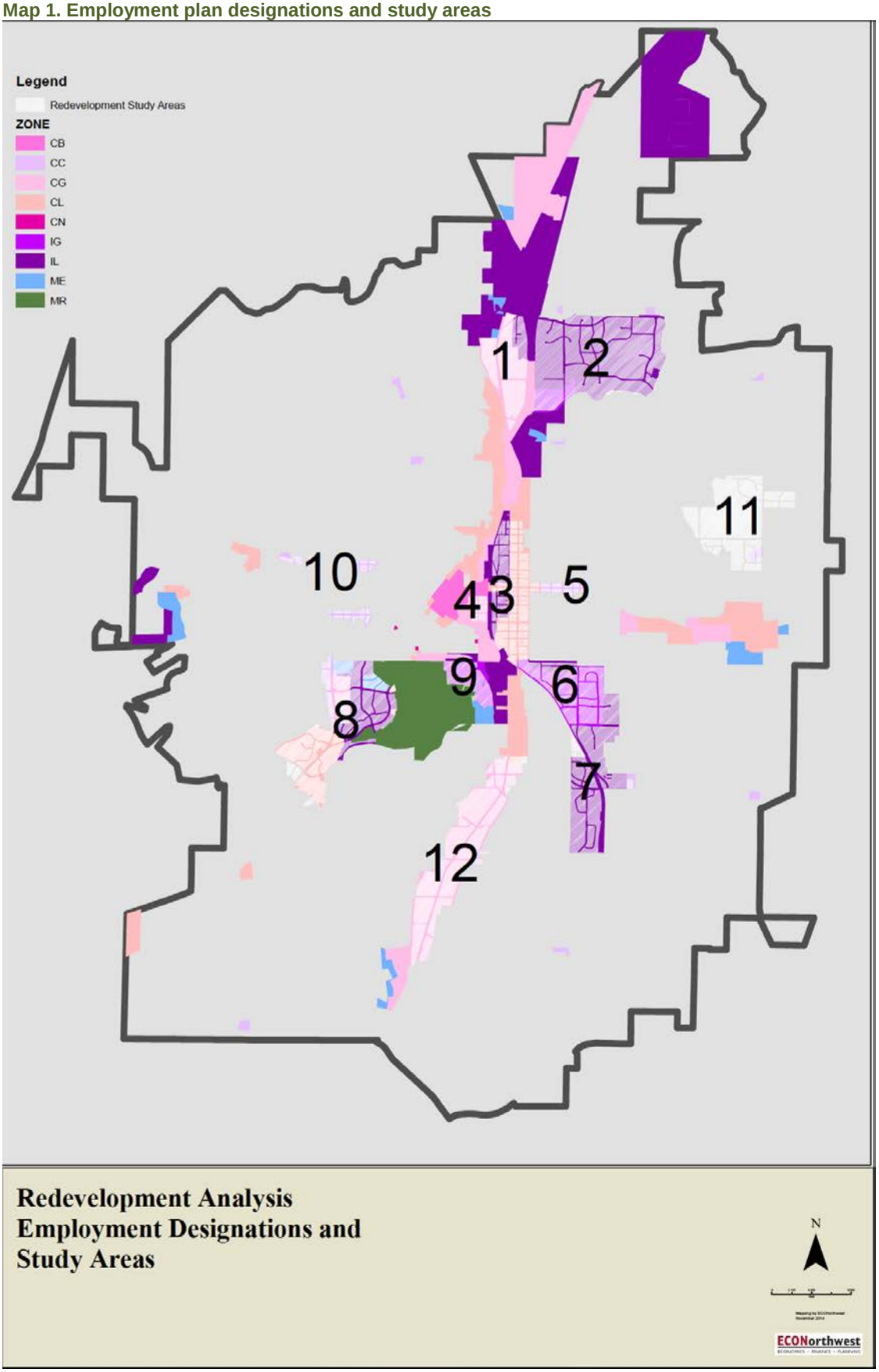
To provide context, we start with brief overview of employment citywide. According to Quarterly Census of Employment and Wage (QCEW) data, Bend had 53,084 covered employees in 2013 (Table 1). The data show that nearly half (48%) of employment is located in a study area.

Table 1. Covered employment by plan designation and location

	All Areas			Study Areas		
Plan Designation	**Firms**	**Emp**	**% of Emp**	**Firms**	**Emp**	**% of Emp**
Commercial						
CB - Central Business	272	3,206	6%			0%
CC	185	1,966	4%	165	1,766	7%
CG	564	8,169	15%	310	3,929	15%
CL	407	5,063	10%	223	2,763	11%
Subtotal	**1,428**	**18,404**	**35%**	**698**	**8,458**	**33%**
Industrial						
IG	113	1,639	3%	113	1,639	6%
IL	516	6,766	13%	435	5,555	22%
Subtotal	**629**	**8,405**	**16%**	**548**	**7,194**	**28%**
Mixed Employment						
ME	222	3,171	6%	74	614	2%
MR	261	3,131	6%	7	48	0%
Subtotal	**483**	**6,302**	**12%**	**81**	**662**	**3%**
Public Facilities (PF)	79	4,135	8%			0%
Residential						
RH	222	10,102	19%	114	9,242	36%
RL	127	286	1%			0%
RM	219	1,192	2%			0%
RS	954	4,232	8%	2	59	0%
Subtotal	**1,522**	**15,812**	**30%**	**116**	**9,301**	**36%**
TOTAL	**4,142**	**53,084**	**100%**	**1,443**	**25,615**	**100%**

Map 1 shows the location of employment plan designations and redevelopment study areas.

Map 1. Employment plan designations and study areas



Study Areas

At the second Employment TAC meeting, the TAC identified areas where redevelopment is likely over the 2008-2028 period. These areas are shown on Map 2. Note that while the areas identified in Map 2 represent specific districts the TAC, staff and the consulting team identified as having redevelopment potential, redevelopment can occur on any employment land within the UGB and is further evaluated later in this section.

Map 2. Areas to Evaluate for Redevelopment Potential

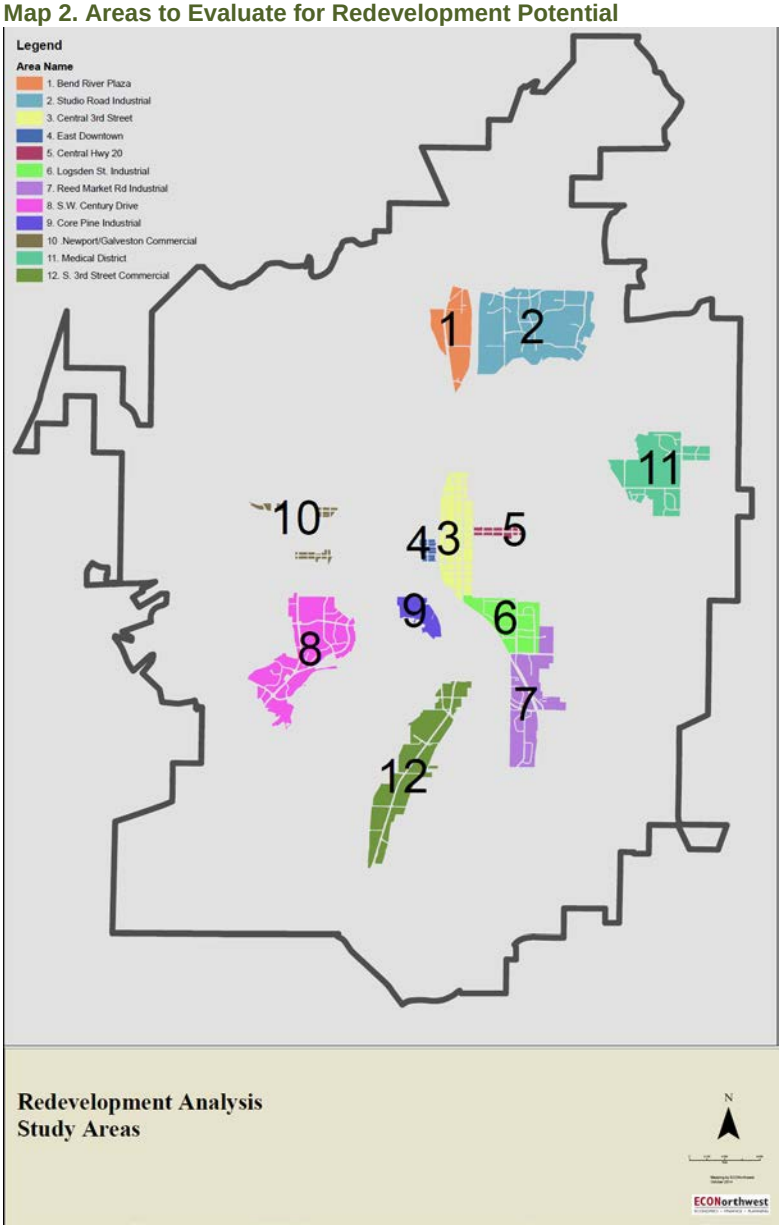


Table 2 summarizes key characteristics of the 12 study areas shown in Map 2, including number of tax lots, total acres in the study area, acres in tax lots that have employment, total employment, and employment per acre (for tax lots that have employment).

Table 2. Study Area Summary Data

Study Area	Name	Primary Use	Total Tax Lots	Total Ac	Acres w/Emp	Employment	Emp/Ac
1	Bend River Plaza	Commercial	79	115.2	78.7	1,557	19.8
2	N. Studio Road	Industrial	190	301.9	200.2	2,679	13.4
3	Central 3rd Street	Comm/Mixed Employment	326	128.4	69.5	2,229	32.1
4	East Downtown	Commercial	82	12.3	3.9	145	36.9
5	Central Hwy 20	Commercial	44	14.0	11.2	513	45.7
6	Logsden Street	Industrial	127	105.9	60.4	854	14.1
7	Reed Market	Industrial	193	164.0	100.6	1,195	11.9
8	SW Century Drive	Mixed	208	190.0	108.6	3,700	34.1
9	Mill District	Industrial	11	47.3	33.5	148	4.4
10	Newport/Galveston	Commercial	98	17.1	10.8	698	64.8
11	Medical District	Medical	95	154.5	118.2	9,579	81.0
12	S. 3rd Street	Commercial	187	206.8	134.9	2,318	17.2
	Total/Avg		**1640**	**1457.4**	**930.6**	**25,615**	**27.5**

The TAC requested more information on the plan designations and employment in the study areas. Table 3 shows acres and percent of acres by study area and plan designation. The figure below shows the titles for the abbreviations in Table 3.

- CB- Central Business District
- CC- Commercial Convenience
- CG- Commercial General
- CL- Commercial Limited
- IG- Industrial General
- IL- Industrial Light
- IP- Industrial Park
- ME- Mixed Employment
- MR- Mixed Riverfront
- PF- Public Facilities
- PO- Professional Office
- PO/RM/RS
- RH- Residential Urban High Density
- RL- Residential Urban Low Density
- RM- Residential Urban Medium Density
- RS- Residential Urban Standard Density
- SM- Surface Mining
- UAR- Urban Area Reserve

Table 3. Acres by study area and plan designation

Study Area	CC	CG	CL	IG	IL	ME	MR	PF	RH	RM	RS	Total
Acres by Plan Designation												
1. Bend River Plaza		98			18							115
2. N. Studio Rd. Industrial				29	273				0			302
3. Central 3rd St.			82			47						128
4. East Downtown		12										12
5. Central Hwy 20	11		3									14
6. Logsden St. Industrial				106								106
7. Reed Market Industrial	2				156			3		3		164
8. SW Century Drive	15	16	61		72	19	1			3	3	190
9. Mill District Industrial				47								47
10. Newport/Galveston Commercial	17											17
12. Medical District	5								149			155
13. South 3rd Commercial		201								6		207
Total	**51**	**326**	**145**	**182**	**519**	**66**	**1**	**3**	**150**	**12**	**3**	**1,457**
Percent of Acres by Plan Designation												
1. Bend River Plaza		85%			15%							100%
2. N. Studio Rd. Industrial				10%	90%							100%
3. Central 3rd St.			64%			36%						100%
4. East Downtown		100%										100%
5. Central Hwy 20	81%		19%									100%
6. Logsden St. Industrial				100%								100%
7. Reed Market Industrial	1%				95%			2%		2%		100%
8. SW Century Drive	8%	8%	32%		38%	10%	1%			2%	2%	100%
9. Mill District Industrial				100%								100%
10. Newport/Galveston Commercial	100%											100%
12. Medical District	3%								97%			100%
13. South 3rd Commercial		97%								3%		100%
Total	**3%**	**22%**	**10%**	**12%**	**36%**	**5%**	**0%**	**0%**	**10%**	**1%**	**0%**	**100%**

Table 4 shows covered employment by sector for each study area. The data suggest a high level of employment mixing by industry in many of the study areas. This suggests that plan designations are not restrictive in the types of employment they allow, and that the types of structures in many of the study areas can accommodate a broad range of employment categories.

Table 4. Covered employment by study area and sector

#	Study Area	Retail	Lodging and food	Services	Health care	Other commercial	Manufacturing	Industrial	Grand Total
Employment									
1	Bend River Plaza	616	317	484	39	86	15	-	**1,557**
2	Studio Road Industrial	67	115	547		405	1,068	477	**2,679**
3	Central 3rd Street	689	504	386	124	219	81	226	**2,229**
4	East Downtown			102	25	18			**145**
5	Central Hwy 20	72	60	64	306	11			**513**
6	Logsden St. Industrial	118	17	121	13	189	170	226	**854**
7	Reed Market Industrial	132	14	171	17	258	331	271	**1,194**
9	Core Pine			23		35	65	25	**148**
9	SW Century Drive	261	283	1,151	478	258	911	358	**3,700**
10	Newport/Galveston Commercial	236	276	61	87	10	28		**698**
11	Medical District	4	224	307	8,828	213	3		**9,579**
12	South 3rd Street Commercial	1,237	503	230	142	141	26	38	**2,317**
	Total	**3,432**	**2,313**	**3,647**	**10,059**	**1,843**	**2,698**	**1,621**	**25,613**
Percent of Employment by Sector									
1	Bend River Plaza	**40%**	20%	31%	3%	6%	1%	0%	100%
2	Studio Road Industrial	3%	4%	20%	0%	15%	**40%**	18%	100%
3	Central 3rd Street	**31%**	23%	17%	6%	10%	4%	10%	100%
4	East Downtown	0%	0%	**70%**	17%	12%	0%	0%	100%
5	Central Hwy 20	14%	12%	12%	**60%**	2%	0%	0%	100%
6	Logsden St. Industrial	14%	2%	14%	2%	22%	20%	**26%**	100%
7	Reed Market Industrial	11%	1%	14%	1%	22%	**28%**	23%	100%
9	Core Pine	0%	0%	16%	0%	24%	**44%**	17%	100%
9	SW Century Drive	7%	8%	**31%**	13%	7%	25%	10%	100%
10	Newport/Galveston Commercial	34%	**40%**	9%	12%	1%	4%	0%	100%
11	Medical District	0%	2%	3%	**92%**	2%	0%	0%	100%
12	South 3rd Street Commercial	**53%**	22%	10%	6%	6%	1%	2%	100%
	Total	**13%**	**9%**	**14%**	**39%**	**7%**	**11%**	**6%**	**100%**

Table 5 summarizes opportunities and constraints for the study areas as identified by the TAC, staff, or the consultant team. The opportunities/constraints notes were distilled from the August TAC meeting and supplemented with comments by the project team and staff.

Table 5. Study Areas, existing uses, and opportunities/constraints

Study Area	Existing Uses	TAC Identified Opportunities/Constraints/Characteristics	Plan Designation Conflict with Market?	Serviceability	Urban Form Opportunities
1. Bend River Plaza	Commercial	Has transportation constraints, could redevelop for additional light industrial or retail, needs sewer capacity, limited access and limited bike/ped connections. Could provide commercial and some residential uses.	No plan conflict.	Need additional guidance from TAC on this issue: serviceability defined now or in the planning period? All systems? Level of analysis (reconnaissance or modeling)?	Possibly more community serving and local serving with better bike and pedestrian access.
2. N. Studio Road	Industrial	Needs a small amount of commercial services to reduce transportation impacts (e.g. food carts); consider a change to allow a mix of more office.	No plan conflict.	See Study Area #1 for comment.	No major change, but targeted commercial uses could decrease auto oriented and provide amenities for local neighborhoods.
3. Central 3rd Street	Commercial / Mixed Employment	Good for more mixed use and employment, additional retail, additional residential component. Needs improved bike/ped/parking to facilitate additional mixed use development. Upzoning or more flexible uses and development standards would be an incentive. If this area is a priority, consider additional incentives. This is an emerging hot location in Bend. Appears to have sewer capacity and electrical capacity.	No plan conflict.	See Study Area #1 for comment.	Has potential to become a significant mixed-use area consistent with the Multimodal Mixed-Use plan. Potentially new community serving center.
4. East Downtown	Commercial	Current zoning and parcelization does not allow economics to work in favor of redevelopment. Consider upzoniong to CB and extend the CBD to the tracks/parkway.	Yes. More intensive designation may be required to incentivize redevelopment.	See Study Area #1 for comment.	Has potential to become part of the downtown central business district core and an extension of this regional center

Study Area	Existing Uses	TAC Identified Opportunities/Constraints/Characteristics	Plan Designation Conflict with Market?	Serviceability	Urban Form Opportunities
5. Central Hwy 20	Commercial	Could support a greater mix of retail, or small scale, mixed use. Area is emerging with more places to eat. Entertainment, restaurants, etc could be good.	No plan conflict.	See Study Area #1 for comment.	Continue to be neighborhood serving commercial district.
6. Logsden Street	Industrial	IG and IL area – keep and intensify more traditional industrial uses. Consider reducing landscape and stormwater requirements to get more lot coverage. Preserve this as industrial. Light industrial area may not have as much potential since it is built out. This is a well functioning industrial area.	No plan conflict.	See Study Area #1 for comment.	Continue current uses and protect for industrial uses. Consider more protections to preserve for industrial over time.
7. Reed Market	Industrial	Same evaluation as Logsden Street.	No plan conflict.	See Study Area #1 for comment.	Same as above.
8. SW Century Drive	Mixed	With siting of OSU consider more mixed use emphasis with strong influence of uses to serve the university, housing, retail, entertainment, etc.	Potentially, depending on the specific area. Commercial areas are not in conflict, but industrial, surface mining, and public facility designations may be in conflict with market.	See Study Area #1 for comment.	Major urban form considerations depending on long-term master planning and sub-area planning project, and legal challenges. From a new regional center to community serving center.
9. Mill District (Core Pine site and area)	Industrial	Big redevelopment opportunity. Consider moving the industrial uses to another location and creating a new mixed use, multi-story, retail, office, housing, entertainment district. Large property close in. Current industrial use is not a good fit for surrounding uses.	Yes. Mixed use or some type of non-heavy industrial designation would be the more appropriate plan designations.	See Study Area #1 for comment.	Potential new community or regional mixed use area.

Study Area	Existing Uses	TAC Identified Opportunities/Constraints/Characteristics	Plan Designation Conflict with Market?	Serviceability	Urban Form Opportunities
10. Newport/Galveston	Commercial	There is currently interest in redeveloping, adaptive reuse is taking place, but parking requirements are limiting actual redevelopment. Need to address parking issues and a parking management strategy. There is a streetscape project in the planning phases currently underway. Redevelopment to mixed use with a residential component could be appropriate. Redevelopment type and scale would need to consider the concerns of nearby residents, including compatibility, noise, parking, and similar issues.	No plan conflict.	See Study Area #1 for comment.	Continuation of its current function as a local serving commercial center.
11. Medical District	Medical	This site is mostly developed (still some vacant acres), but it is assumed the hospital will likely redevelop and intensify uses at this location.	No plan conflict.	See Study Area #1 for comment.	Continuation of current regional center for medical and retail (to the south).
12. S. 3rd Street	Commercial	The TAC didn't identify this area as being ripe for redevelopment. However, with urban renewal in place, and improvements to make the Murphy Crossing Refinement Plan area market ready, there may be potential in this area during the planning period.	No plan conflict.	See Study Area #1 for comment.	Continuation as commercial corridor with community serving commercial.

Envision Tomorrow Results

This section presents results from the Envision Tomorrow model. The results represent a "base case" scenario that assumes that the city would take no specific measures to encourage redevelopment in employment zones.

Envision Tomorrow (ET) is an open-access scenario planning package that allows users to analyze how their community's current growth pattern and future decisions impacting growth will impact a range of measures from public health, fiscal resiliency and environmental sustainability. The Fregonese team used the Envision Tomorrow suite of tools to identify potential redevelopment locations, feasible building types, and potential funding tools to help leverage development in underutilized and emerging market areas. Fregonese staff modeled a series of development scenarios that tested the feasibility of different building types based on 2014 rent and construction levels to determine the residual land value, or the amount a developer could pay for a property while achieving an internal rate of return of 10%. The specific model assumptions are described in Appendix A.

After inputting the cost and rent variables Envision Tomorrow modeled an IRR of 10% through adjustment of the acquisition cost. The resultant acquisition cost value then determines the residual land value. Negative residual land values suggest the parcel will not redevelop; positive residual land values indicate redevelopment potential.

The project team analyzed the 12 study areas as well as all other lands outside the study areas with employment plan designations (See Map 1). The model outputs are acres redeveloped and jobs. In the context of the statewide planning program, we are only interested in redevelopment that leads to additional employment capacity (e.g. has higher employee per acre ratios).

Table 6 shows the results for the 12 study areas. The results suggest relatively low redevelopment potential overall—763 jobs, or a 3% increase from 2013 employment. The model output only resulted in redevelopment potential in three study areas: N. Studio Road, SW Century Drive, and S. 3rd Street.

Table 6. Envision Tomorrow results for employment study area redevelopment

		Existing Conditions, 2013			Envision Tomorrow Model Output				
Study Area	Name	Total Acres	Coverend Employment	Emp/Acre	Redeveloped Acres	Additional Employment Capacity	Total Emp w/Redev	Emp/Acre w/Redev	% Increase over 2013 Emp
1	Bend River Plaza	115.2	1,557	13.5	0.0	0	1,557	13.5	0.0%
2	N. Studio Road	301.9	2,679	8.9	10.5	484	3,163	10.5	18.1%
3	Central 3rd Street	128.4	2,229	17.4	0.0	0	2,229	17.4	0.0%
4	East Downtown	12.3	145	11.8	0.0	0	145	11.8	0.0%
5	Central Hwy 20	14.0	513	36.7	0.0	0	513	36.7	0.0%
6	Logsden Street	105.9	854	8.1	0.0	0	854	8.1	0.0%
7	Reed Market	164.0	1,195	7.3	0.0	0	1,195	7.3	0.0%
8	SW Century Drive	190.0	3,700	19.5	5.4	250	3,950	20.8	6.8%
9	Mill District	47.3	148	3.1	0.0	0	148	3.1	0.0%
10	Newport/Galveston	17.1	698	40.9	0.0	0	698	40.9	0.0%
11	Medical District	154.5	9,579	62.0	0.0	0	9,579	62.0	0.0%
12	S. 3rd Street	206.8	2,318	11.2	0.6	29	2,347	11.3	1.3%
	Total/Avg	**1457.4**	**25,615**	**17.6**	**16.6**	**763**	**26,378**	**18.1**	**3.0%**

Table 7 presents a summary of the Envision Model results for lands outside the 12 study areas. Consistent with the model output for the study areas, the results suggest relatively low redevelopment potential—596 jobs or a 3.5% increase over 2013 employment. The results suggest that the CG (general commercial) and ME (mixed-employment) designations have the most potential.

Table 7. Envision Tomorrow results for redevelopment of employment lands outside study areas

	Existing Conditions, 2013			Envision Tomorrow Model Output				
Plan Designation	Total Acres	Coverend Employment	Emp/Acre	Redeveloped Acres	Additional Employment Capacity	Total Emp w/Redev	Emp/Acre w/Redev	% Increase over 2013 Emp
CB	40	3,206	79.8	5.5	93	3,299	82.1	2.9%
CC	29	200	7.0	0.0	-	200	7.0	0.0%
CG	327	4,240	13.0	5.1	234	4,474	13.7	5.5%
CL	199	2,300	11.5	0.6	10	2,310	11.6	0.4%
IG	4	-	0.0	0.0	-	-	0.0	0.0%
IL	269	1,211	4.5	1.0	46	1,257	4.7	3.8%
ME	268	2,557	9.6	6.1	213	2,770	10.4	8.3%
MR	220	3,083	14.0	0.0	-	3,083	14.0	0.0%
Total	**1,356**	**16,797**	**12.4**	**18.3**	**596**	**17,393**	**12.8**	**3.5%**

The results in Tables 6 and 7 presented the employment increment over the base 2013 employment. For purpose of a redevelopment rate assumption we are interested in the percentage of new employment that would be accommodated through redevelopment. This is employment that would not require any new land and results in an overall deduction of land need for the 2008-2028 period due to redevelopment.

Table 8 summarizes redevelopment potential for all employment lands in Bend (e.g., both lands inside study areas and lands outside study areas) by plan designation. Note that Bend had 53,084 covered employees in 2013; the approximately 20,000 employees not shown in Table were located in residential and public facility zones. About half of that employment was in the medical district.

Table 8. Envision Tomorrow Results for redevelopment of employment lands

	Existing Conditions, 2013			Envision Tomorrow Model Output				
Plan Designation	Total Acres	Coverend Employment	Emp/Acre	Redeveloped Acres	Additional Employment Capacity	Total Emp w/Redev	Emp/Acre w/Redev	% Increase over 2013 Emp
CB	40	3,206	79.8	5.5	93.0	3,299	82.1	2.9%
CC	83	1,966	23.7	0.0	0.0	1,966	23.7	0.0%
CG	681	8,169	12.0	5.7	263.0	8,432	12.4	3.2%
CL	374	5,063	13.6	0.6	10.0	5,073	13.6	0.2%
IG	197	1,639	8.3	0.0	0.0	1,639	0.0	0.0%
IL	856	6,766	7.9	11.5	530.0	7,296	8.5	7.8%
ME	334	3,171	9.5	11.6	463.0	3,634	10.9	14.6%
MR	221	3,131	14.2	0.0	0.0	3,131	14.2	0.0%
Total	**2,786**	**33,111**	**11.9**	**34.8**	**1,359**	**34,470**	**12.4**	**4.1%**

The 2008 Economic Opportunities Analysis forecast a total increase of 20,599 non-shift employees for the 2008-2028 planning period. The model output suggests a base case potential for 1,359 new employees. This equates to 6.6% of total forecast employment. The 2008 EOA assumed 10%.

Based on these results, the project team recommends that the base case analysis use a redevelopment rate in the range of 6% to 7%. Note that this analysis did not model the potential impact of land use efficiency measures designed to encourage redevelopment of employment lands—including the impact of strategies described in the Central 3rd Street Multimodal Mixed Use Area (MMA). The TAC also identified opportunities to change the plan designation of the East Downtown area from CG to CB as well as changing the plan designation of the Core Pine site from industrial to something more mixed use and commercial in nature..

The base case analysis of redevelopment potential presented in this memorandum provides a foundation for furthering discussions of specific measures the city should consider to increase employment redevelopment potential. Such an approach is consistent with community input as expressed through the Metroquest survey as well as direction provided in the Remand.

The manner in which the final redevelopment rate is expressed in practical terms will be a combination of reducing the UGB expansion for employment lands based on redevelopment assumptions, new recommendations on code, financial, and other policies which encourage redevelopment, and to inform the strategy on providing a short-term land supply. In Phase 2 of the project, it may be advisable to turn the TAC's attention on helping the city prioritize areas for redevelopment which can then help focus investments in additional planning work related to implementation and funding (SDCs, financial incentives), and importantly, coordinating public investment in infrastructure.

APPENDIX A: METHODS

All developed employment land has the potential to redevelop, at some point in the future. Redevelopment potential can be thought of as a continuum—from more redevelopment potential to less redevelopment potential over the 2008 to 2028 period. The factors that affect redevelopment are complicated and include location, surrounding uses, current use, land and improvement values and other factors. The analysis identifying potentially redevelopable land presented in this memorandum is designed as a first step to identify developed land that *may* redevelop during the planning period.

Broadly, two approaches exist to establish a redevelopment assumption. One is to address redevelopment from the *demand* side by making assumptions about the percentage of new employment that may locate in areas with existing development; the other from the *supply* side by identifying parcels or districts with redevelopment potential. Theoretically, both yield similar results – land with redevelopment potential is deducted from overall land need.

While supply side approaches look more closely at individual land characteristics, they are not necessarily superior to demand-based approaches. Because real estate economics is so location dependent, standard data sources are limited and coarse in their predictive capacity. Moreover, showing the location of redevelopable lands on a map is not advisable since cities do not control private property and are typically careful and limited in the use of available legal options for land acquisition. In the consulting team's view, approaches that look at both supply and demand factors are superior to approaches that focus more narrowly on supply or demand. This approach (e.g., looking at both supply and demand indicators) is what the project team recommends.

Based on a literature review, there is no preferred model or method to identify redevelopment opportunities (or estimate a redevelopment rate). The consulting team and city staff discussed a variety of indicators of redevelopment potential. We propose to use a multi-step approach to evaluating redevelopment potential. The approach is as follows:

Step 1: conduct initial assessment of redevelopment potential for study areas (TAC meeting 3--October)

Step 2: prioritize redevelopment study areas (TAC meeting 3--October)

Step 3: identify strategies to encourage redevelopment in high priority study areas (TAC meeting 4--November)

Step 4: use Envision Tomorrow tool to refine redevelopment rate assumption and provide documentation that supports the assumption used in the revised Economic Opportunities Analysis (TAC meeting 4--November)

Step 5: Ground truth Envision Tomorrow results (TAC meeting 4/5)

Step 6: refine strategies to encourage redevelopment, including plan map amendments, code amendments, incentives and other approaches (TAC meetings 4/5)

The project team has generally worked through the steps up to step 4. The remainder of this appendix describes the Envision Tomorrow model and assumptions.

The Envision Tomorrow Model

This section outlines the project team's approach to developing a feasibility model to identify optimal uses, building forms, and price points for the 12 study areas as well as all land in employment designations outside the study areas.

Background

The scenarios build on analyses completed by Leland Associates, ECONorthwest and Fregonese Associates to identify probable rates of redevelopment on currently developed non-residential lands based on development of building types currently allowed by city regulations and supported by the market.

Approach

The scenarios were implemented using Envision Tomorrow (ET) software, which begins with a set of prototypical buildings of various development types (office, retail, employment, etc.) and populates underutilized properties with new development based upon pro forma evaluation of each building's financial feasibility within subareas within Bend.

Subareas

The twelve subareas selected for testing are identified in Map to of the memo

Prototype Buildings

Prototype buildings are the building blocks of Envision Tomorrow development scenarios and represent a range of existing and aspirational product types. Fregonese Associates developed a library of prototype buildings, customized to conform with City of Bend zoning and market conditions. These prototypes include detailed achievable rent and construction cost data and represent a range of existing and potential building types specific to the Bend real estate market. A list of the prototypes used for this analysis can be found in Table A-1 below.

Table A-1: Building Prototype Library

Building Name	Lot Size (Sq Ft)	Building Lot Coverage	Landscaping Lot Coverage	Parking Lot Coverage	Height (Stories)	Floor Area Ratio (FAR)
Mixed-Use Office 15	40,000.00	85%	15%	0%	15	7.48
Mixed-Use Office 5	40,000.00	28%	50%	22%	5	1.95
Office 5	40,000.00	25%	27%	48%	5	2.01
Office 5	40,000.00	48%	15%	37%	5	3.32
Office 3	40,000.00	48%	15%	37%	3	1.76
Suburban Office 3	40,000.00	33%	15%	52%	3	0.71
Office 1	20,000.00	43%	15%	42%	1	0.37
Flex/Tech Office 2	40,000.00	24%	15%	61%	2	0.43
Light Industrial / Warehousing 1	80,000.00	32%	19%	49%	1	0.25
Heavy Industrial 1	217,800.00	31%	15%	54%	1	0.27
Regional Retail / Mall	435,600.00	30%	15%	55%	1	0.27
Lifestyle Retail / Suburban Main Street Retail	217,800.00	35%	15%	50%	1	0.31
Arterial Commercial	80,000.00	33%	13%	53%	1	0.27
Traditional Main Street Retail	10,000.00	61%	4%	35%	1	0.55
Hotel 15	40,000.00	51%	15%	34%	15	6.36
Hotel 5	40,000.00	31%	15%	54%	5	2.40
Hotel 3	40,000.00	30%	15%	55%	3	1.46
Hotel 1	40,000.00	42%	15%	43%	1	0.38

Envision Tomorrow

Envision Tomorrow (ET) is an open-access scenario planning package that allows users to analyze how their community's current growth pattern and future decisions impacting growth will impact a range of measures from public health, fiscal resiliency and environmental sustainability. The Fregonese team used the Envision Tomorrow suite of tools to identify potential redevelopment locations, feasible building types, and potential funding tools to help leverage development in underutilized and emerging market areas. Fregonese staff modeled a series of development scenarios that tested the feasibility of different building types based on 2014 rent and construction levels to determine the residual land value, or the amount a developer could pay for a property while achieving an internal rate of return of 10%.

The Tipping Point

When achievable rents do not cover purchase, construction and operating costs, lots remain underutilized. The difference between the cost of redevelopment and potential operating income determines whether or not projects will "pencil."

Achievable Rents

For each of the 12 study areas, the project team assembled current market rents for retail, office, and industrial product types from RS Means and the commercial real estate service Costar using data acquired during August 2014.

1. Construction Cost (HARD COSTS ONLY):

All costs are listed on a per square foot basis

Table A-2: Construction Costs

Retail	Urban	$135
	Suburban	$100
Office	Urban	$140
	Suburban	$130
Industrial	Urban Flex	$85
	Suburban Large Format	$80

For Retail and Office products there will be a tenant improvement (TI cost) that is likely to be $10 per square foot or more on top of the hard costs listed above. Costs are listed on a per square foot basis.

2. Rent assumptions (All product types based on a triple-net lease)

Rents listed below are annualized on a per square foot basis.

Table A-3: Achievable Rent Assumptions

Retail	Urban	$18
	Suburban	$12
Office	Urban	$21
	Suburban	$16
Industrial	Urban Flex	$11
	Suburban Large Format	$8

Process

1. Assign Building Prototypes to Zone Districts

Table A-4 below shows which building types are allowed by the regulations found in Bend's zoning ordinance.

Table A-4: Building Types and Zones

		Commercial				Industrial		Mixed-Employment		
	Building Type	CB	CC	CL	GC	IG	IL	ME	MR	PO
1	Mixed-Use Office 15	x								
2	Mixed-Use Office 5	X		x						
3	Office 5	x		x						
4	Office 5	x		x						
5	Office 3		x	x	x			x	x	x
6	Suburban Office 3		x	x	x			x	x	x
7	Office 1		x	x	x			x		
8	Flex/Tech Office 2		x				x			
9	Light Industrial / Warehousing 1					x	x			
10	Heavy Industrial 1						x			
11	Regional Retail / Mall									
12	Lifestyle Retail / Suburban Main Street Retail									
13	Arterial Commercial		x		x					
14	Traditional Main Street Retail									
15	Hotel 15	x								
16	Hotel 5	x								
17	Hotel 3		x	x	x			x	x	x
18	Hotel 1		x	x	x			x	x	x

2. Determine Residual Land Value

After inputting the cost and rent variables the goal seek function within MS Excel was utilized to set an IRR of 10% through adjustment of the acquisition cost. The resultant value then determines the residual land value. In many cases the buildings were shown to have a negative residual land value. In other words, it is not economically feasible to build them without financial subsidy worth at least as much as the market value of the land and improvements.

3. Identify Lands For Designation

For building prototypes with a positive residual land value, the Envision Tomorrow tool was used to select and assign building types to parcels within GIS. Lands were first identified by testing for zoning and parcel size and then assigned with a building prototype that could "afford" the total land and improvement value of the property. In cases where multiple buildings were feasible, the team chose the prototype with the highest residual land value that could be utilized.

4. Summarize by Subarea

Using the spatial analysis functions within GIS and ET the redevelopment rates and representative numbers of employees were summarized and reported based on the previously identified subareas.

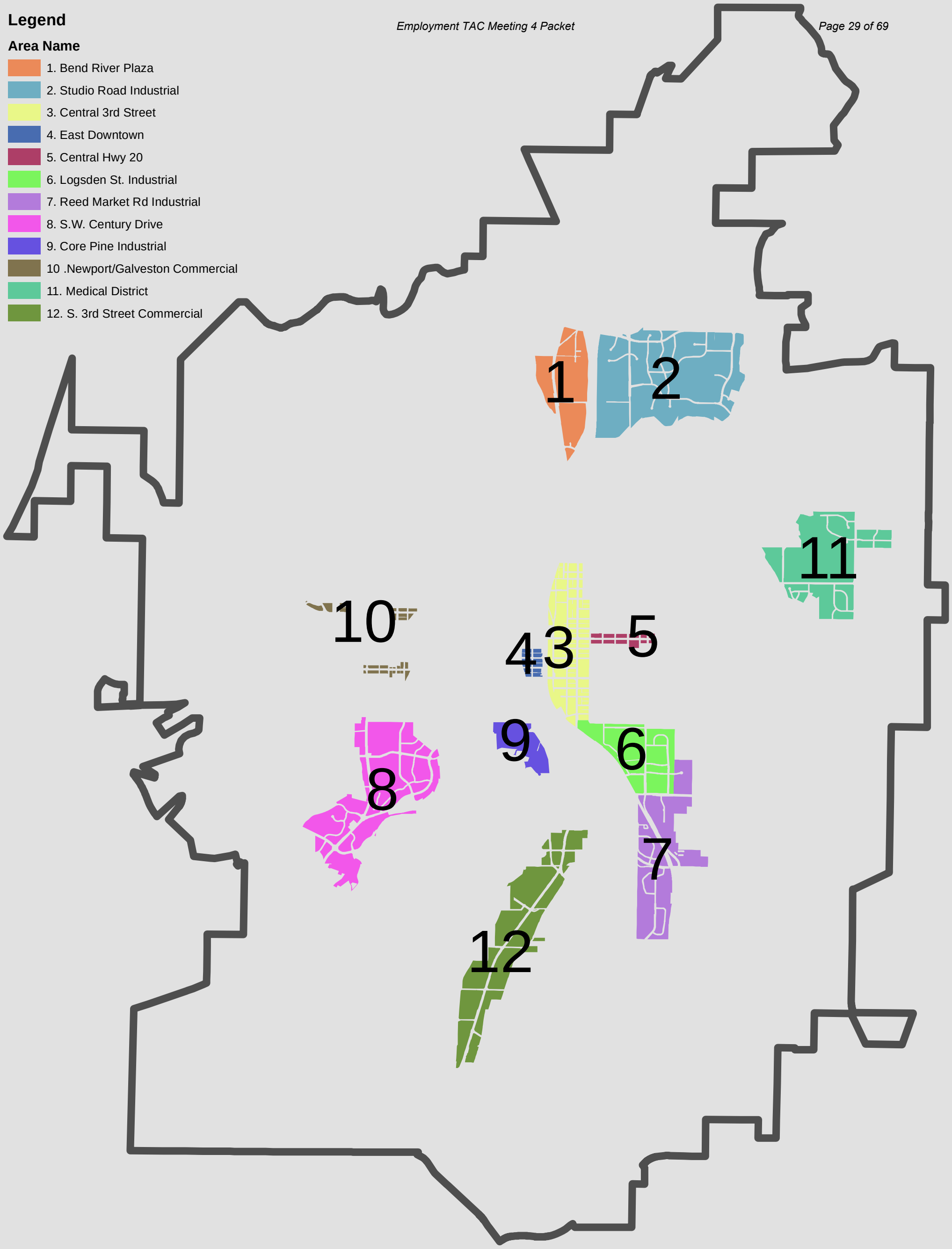
APPENDIX B: STUDY AREA DATA

Appendix B includes maps for the 12 employment study areas. It presents two maps for each study area. The first is a base map that shows the study area taxlots over an aerial photo. The second shows plan designations and includes tables that provide basic data about the study area such as acres, employment, and employment by category.

Legend

Area Name

- 1. Bend River Plaza
- 2. Studio Road Industrial
- 3. Central 3rd Street
- 4. East Downtown
- 5. Central Hwy 20
- 6. Logsden St. Industrial
- 7. Reed Market Rd Industrial
- 8. S.W. Century Drive
- 9. Core Pine Industrial
- 10 .Newport/Galveston Commercial
- 11. Medical District
- 12. S. 3rd Street Commercial



Redevelopment Analysis
Study Areas

N

0 2,125 4,250 8,500
Feet

Mapping by ECONorthwest
October 2014

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Employment Redevelopment Analysis Study Area 1 Bend River Plaza

Legend

Plan Designation

- CG
- IL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

Mapping by ECONorthwest
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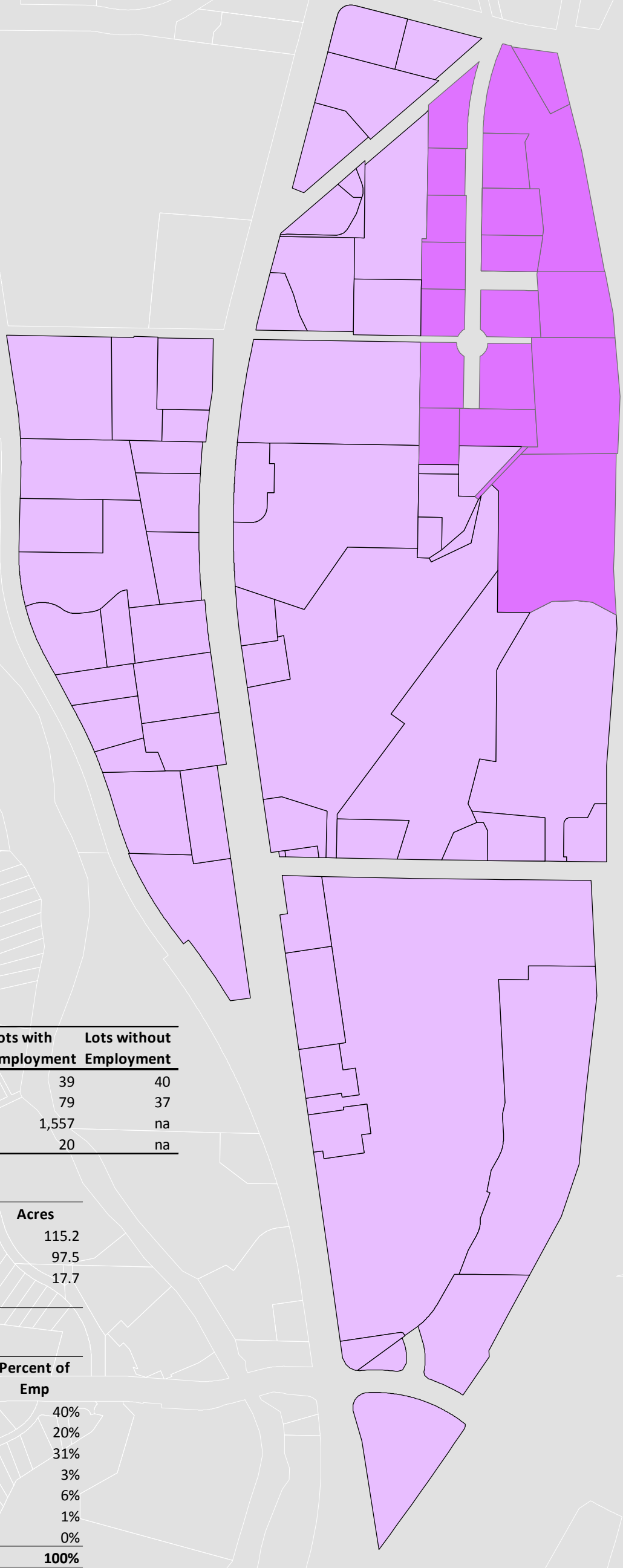

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	79	39	40
Acres	115	79	37
Covered Employment (2013)	1,557	1,557	na
Employees Per Acre	14	20	na

Land Use Summary

	Tax Lots	Acres
Total Acres	79	115.2
Commercial / Mixed Use	61	97.5
Industrial / Mixed Employm	18	17.7
Vacant Acres	FILL IN	

Employment Summary

Sector	Employees	Percent of Emp
Retail	616	40%
Lodging and food	317	20%
Services	484	31%
Health care	39	3%
Other commercial	86	6%
Manufacturing	15	1%
Industrial	0	0%
Grand Total	**1557**	**100%**

Employment Redevelopment Analysis Study Area 1 Bend River Plaza

Legend

Plan Designation

- CG
- IL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 2 N. Studio Road

Legend

Plan Designation

- IL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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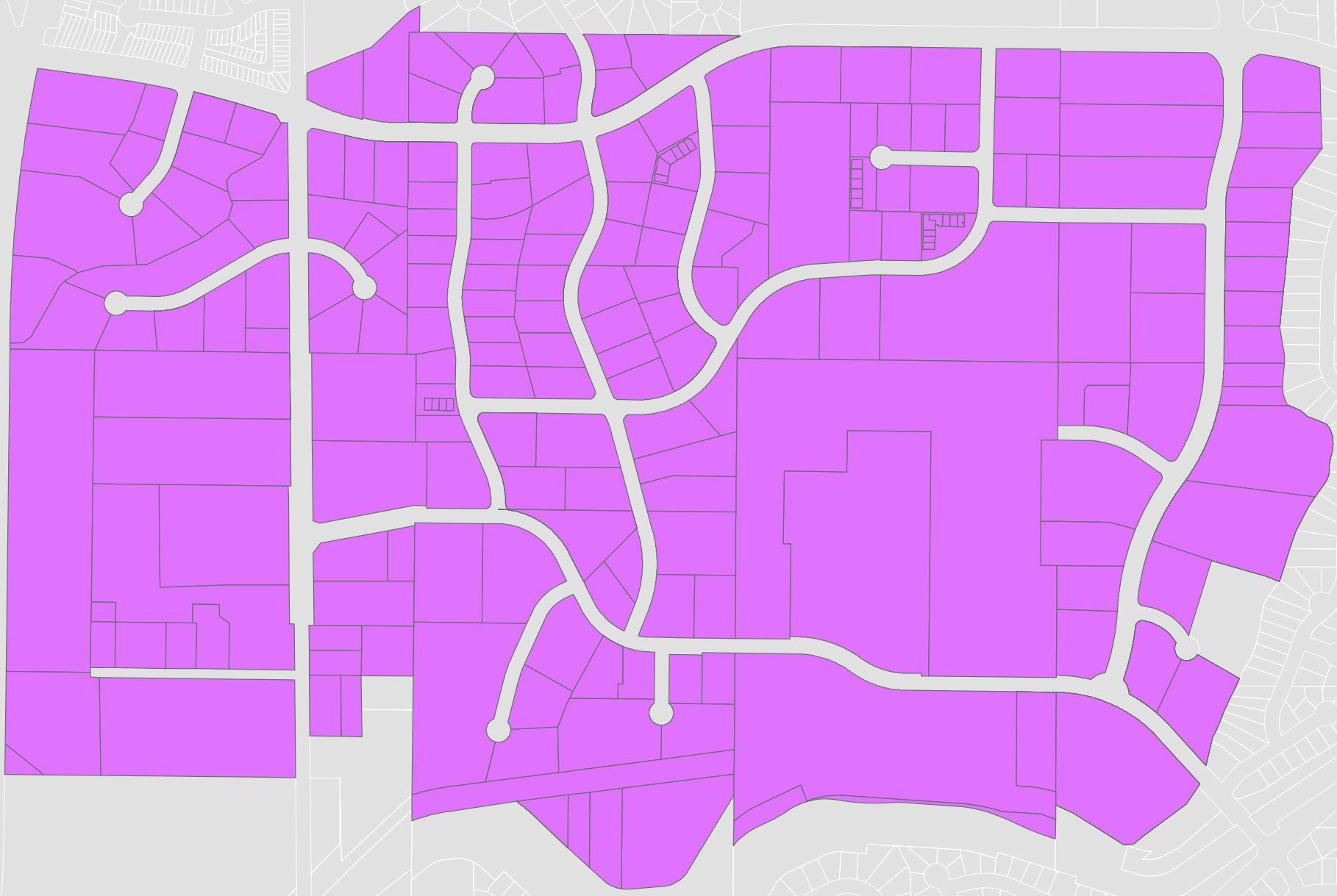

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	190	97	93
Acres	302	200	102
Covered Employment (2013)	2,679	2,679	na
Employees Per Acre	9	13	na

Land Use Summary

	Tax Lots	Acres
Total Acres	190	301.9
Industrial / Mixed Employment	183	301.7
Residential	7	0.2
Vacant Acres	22	64.4

Employment Summary

Sector	Employees	Percent of Emp
Retail	67	3%
Lodging and food	115	4%
Services	547	20%
Health care	0	0%
Other commercial	405	15%
Manufacturing	1068	40%
Industrial	477	18%
Grand Total	**2,679**	100%

Employment Redevelopment Analysis Study Area 2 N. Studio Road

Legend

Plan Designation

- IL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 3 Central 3rd Street

Legend

GEN_PLAN

- CL
- ME
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

Mapping by ECONorthwest
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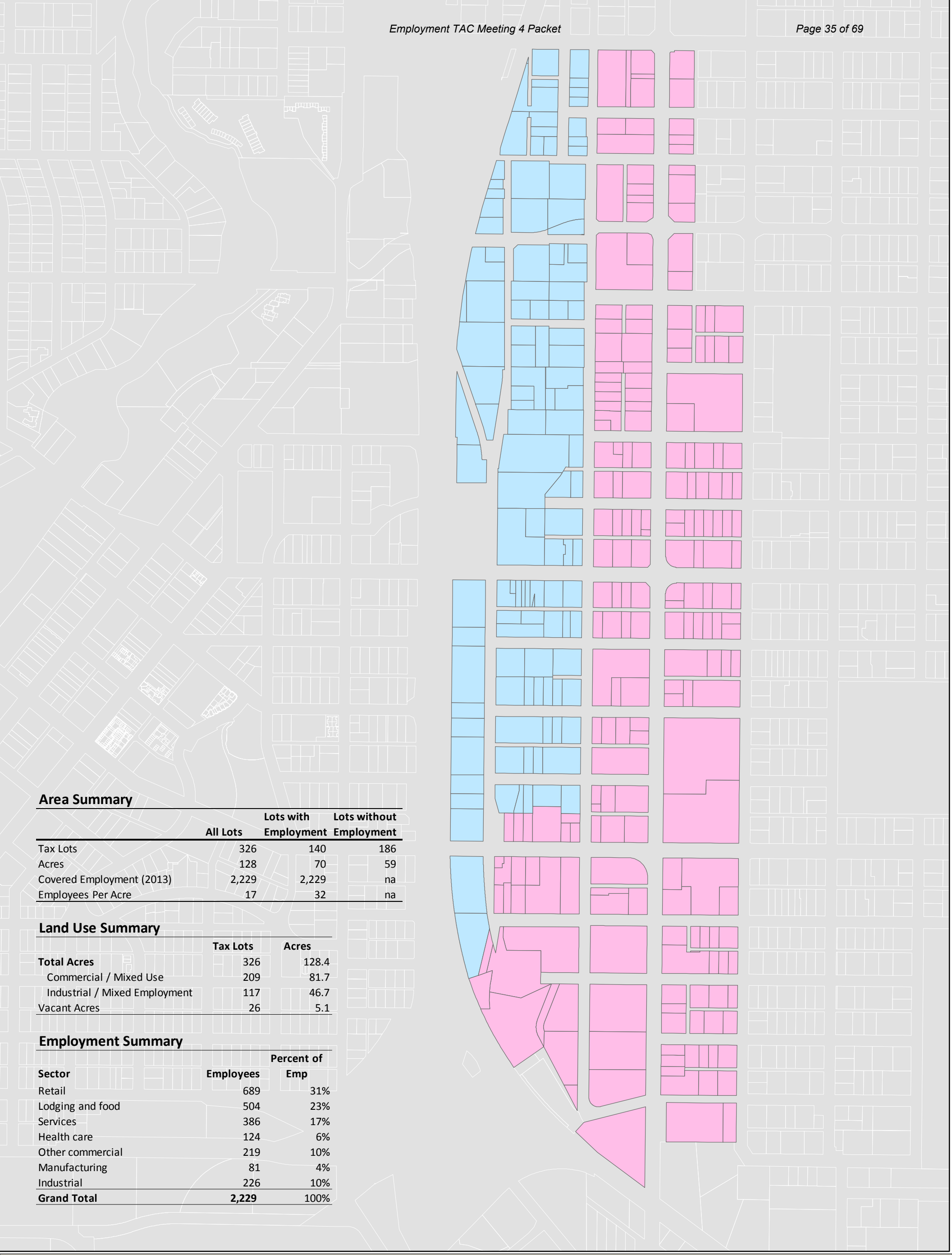

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	326	140	186
Acres	128	70	59
Covered Employment (2013)	2,229	2,229	na
Employees Per Acre	17	32	na

Land Use Summary

	Tax Lots	Acres
Total Acres	326	128.4
Commercial / Mixed Use	209	81.7
Industrial / Mixed Employment	117	46.7
Vacant Acres	26	5.1

Employment Summary

Sector	Employees	Percent of Emp
Retail	689	31%
Lodging and food	504	23%
Services	386	17%
Health care	124	6%
Other commercial	219	10%
Manufacturing	81	4%
Industrial	226	10%
Grand Total	**2,229**	100%

Employment Redevelopment Analysis Study Area 3 Central 3rd Street

Legend

GEN_PLAN

- CL
- ME
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 4 East Downtown

Legend

GEN_PLAN

- CG
- Vacant Land
- BendTaxLots

N

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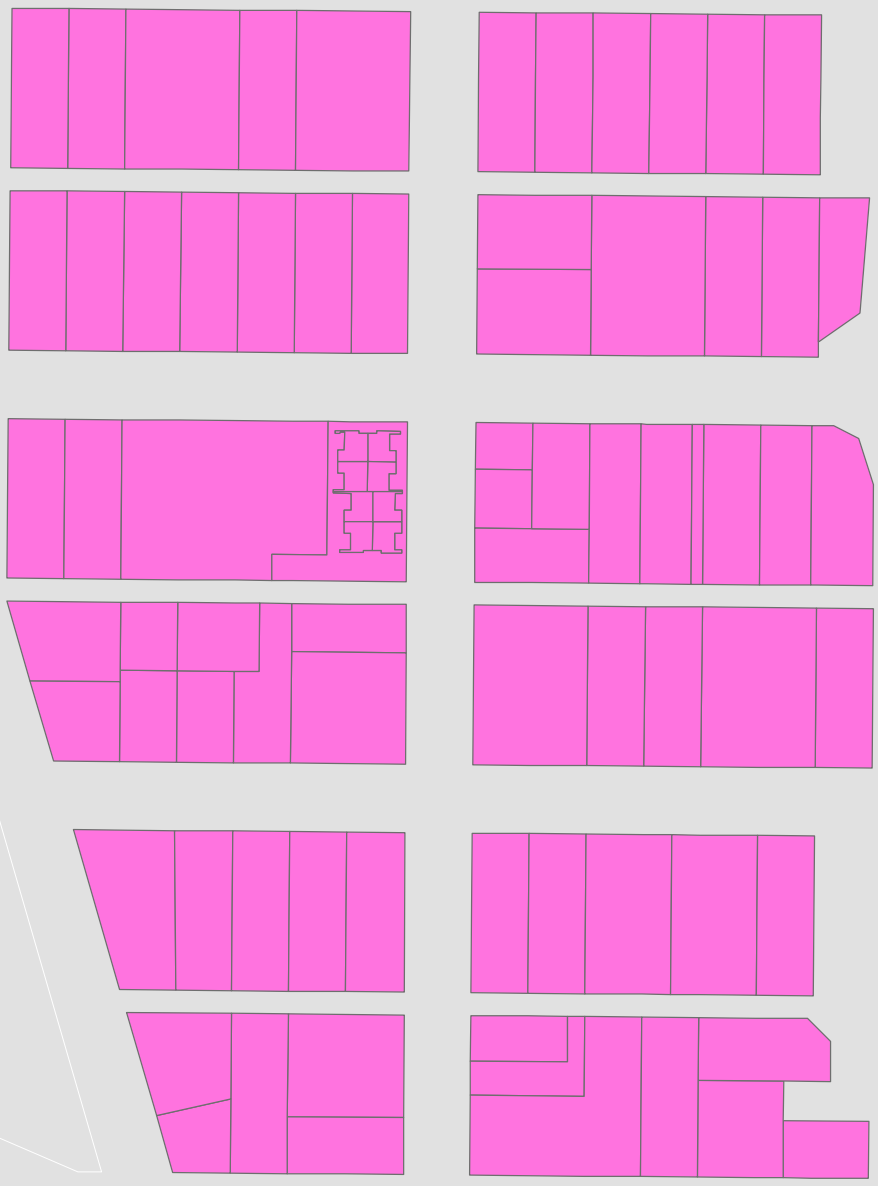

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	82	21	61
Acres	12	4	8
Covered Employment (2013)	145	145	na
Employees Per Acre	12	37	na

Land Use Summary

	Tax Lots	Acres
Total Acres	82	12.3
Commercial / Mixed Use	82	12.3
Vacant Acres	4	0.4

Employment Summary

Sector	Employees	Percent of Emp
Retail	0	0%
Lodging and food	0	0%
Services	102	70%
Health care	25	17%
Other commercial	18	12%
Manufacturing	0	0%
Industrial	0	0%
Grand Total	**145**	100%

Employment Redevelopment Analysis Study Area 4 East Downtown

Legend

GEN_PLAN

- CG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 5 Central Highway 20

Legend

Plan Designation

- CC
- CL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	44	32	12
Acres	14	11	3
Covered Employment (2013)	513	513	na
Employees Per Acre	37	46	na

Land Use Summary

	Tax Lots	Acres
Total Acres	44	12.3
Commercial / Mixed Use	44	12.3
Vacant Acres	1	0.0

Employment Summary

Sector	Employees	Percent of Emp
Retail	72	14%
Lodging and food	60	12%
Services	64	12%
Health care	306	60%
Other commercial	11	2%
Manufacturing	0	0%
Industrial	0	0%
Grand Total	**513**	100%

Employment Redevelopment Analysis Study Area 5 Central Highway 20

Legend

Plan Designation

- CC
- CL
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 6 Logsden Street Industrial

Legend

Plan Designation

- IG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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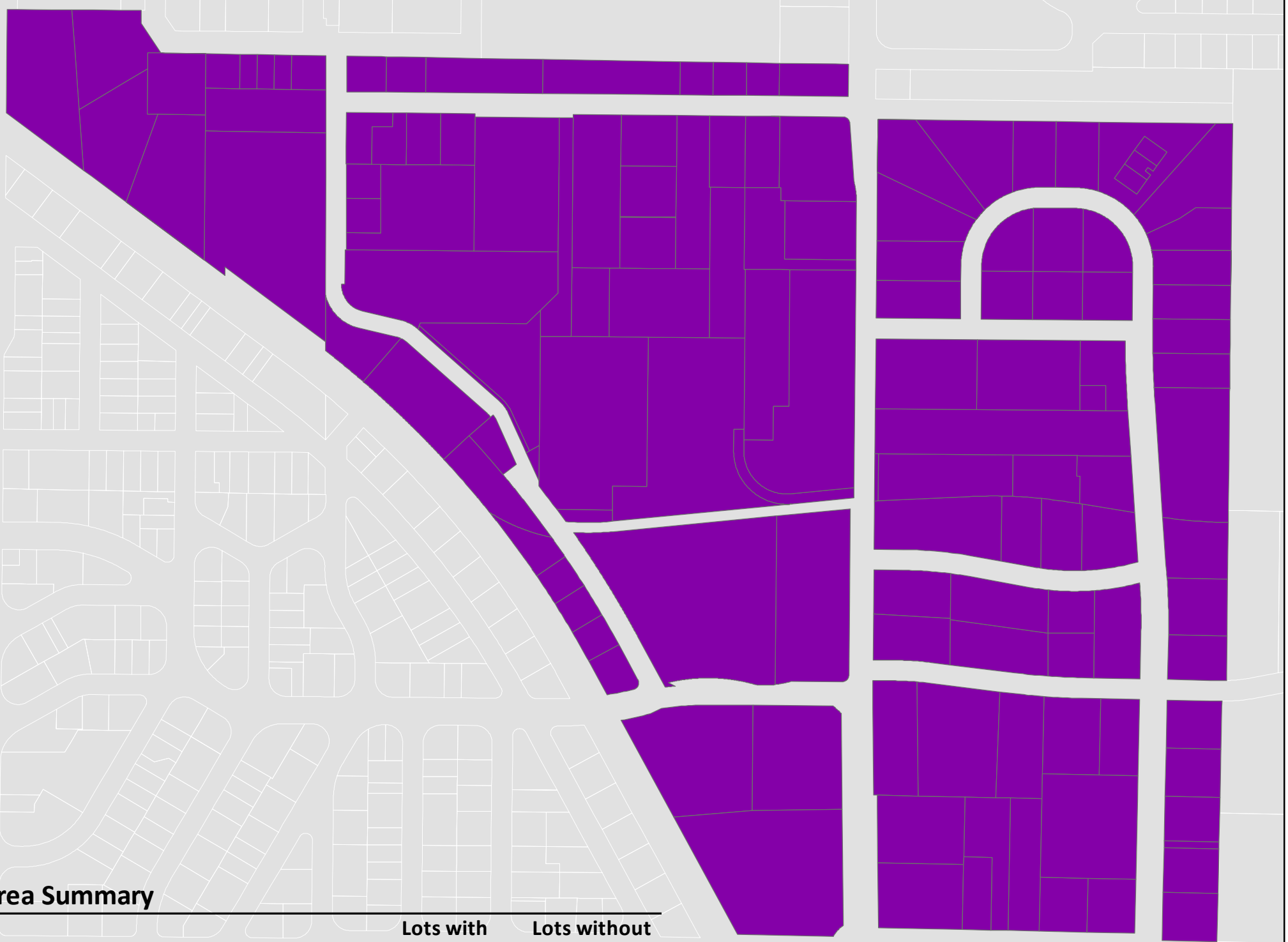

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	127	58	69
Acres	106	60	46
Covered Employment (2013)	854	854	na
Employees Per Acre	8	14	na

Land Use Summary

	Tax Lots	Acres
Total Acres	127	145.0
Industrial / Mixed Employment	127	145.0
Vacant Acres	11	3.2

Employment Summary

Sector	Employees	Percent of Emp
Retail	118	14%
Lodging and food	17	2%
Services	121	14%
Health care	13	2%
Other commercial	189	22%
Manufacturing	170	20%
Industrial	226	26%
Grand Total	**854**	100%

Employment Redevelopment Analysis Study Area 6 Logsden Street Industrial

Legend

Plan Designation

- IG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment
Redevelopment Analysis
Study Area 7
Reed Market Road Industrial

Legend

Plan Designation

- CC
- IL
- PF
- RM
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

Mapping by ECONorthwest
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Area Summary

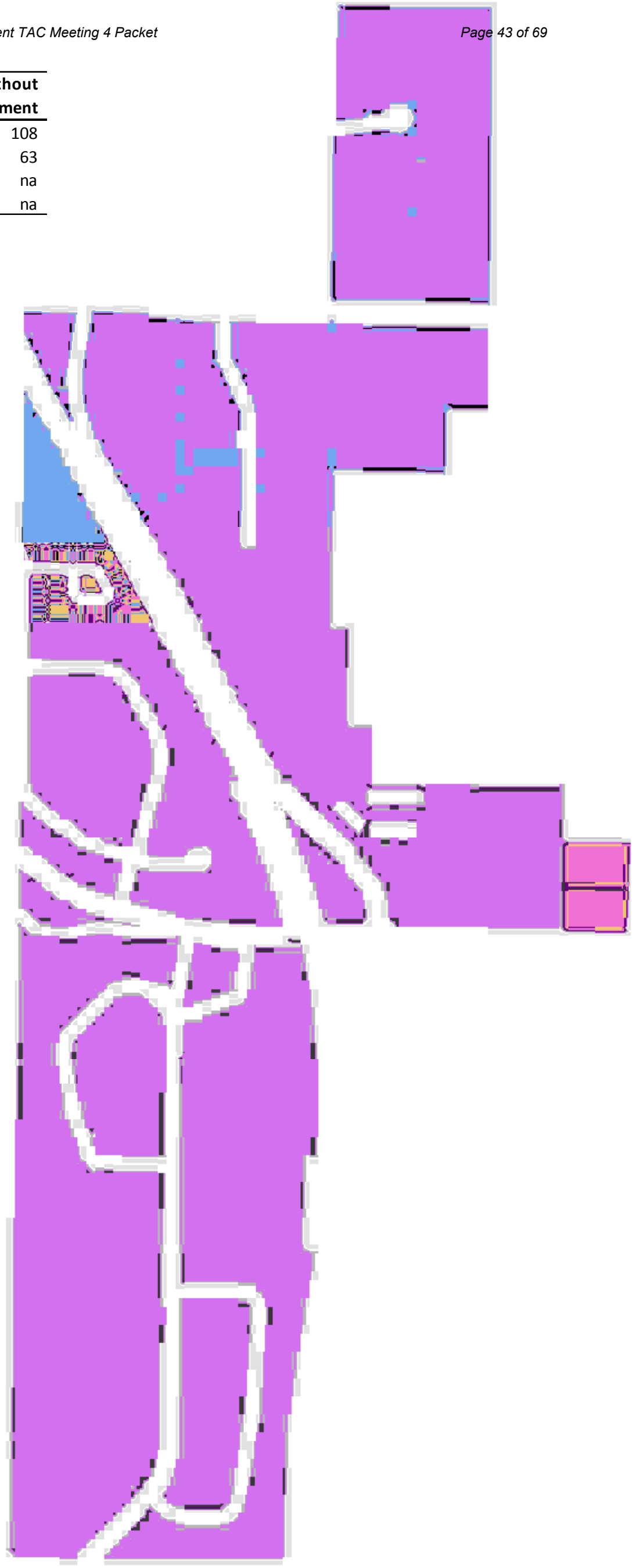
	All Lots	Lots with Employment	Lots without Employment
Tax Lots	193	85	108
Acres	164	101	63
Covered Employment (2013)	1,195	1,195	na
Employees Per Acre	7	12	na

Land Use Summary

	Tax Lots	Acres
Total Acres	193	164.0
Commercial / Mixed Use	2	2.4
Industrial / Mixed Employment	151	156.1
Public Facilities	1	2.9
Residential	39	2.6
Vacant Acres	0	0.0

Employment Summary

Sector	Employees	Percent of Emp
Retail	132	11%
Lodging and food	14	1%
Services	171	14%
Health care	17	1%
Other commercial	258	22%
Manufacturing	331	28%
Industrial	271	23%
Grand Total	**1,194**	**100%**



Employment Redevelopment Analysis Study Area 7 Reed Market Road Industrial

Legend

Plan Designation

- CC
- IL
- PF
- RM
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 8 SW Century Drive

Legend

Plan Designation

- CC
- CG
- CL
- IL
- ME
- MR
- RM
- RS
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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October 2014

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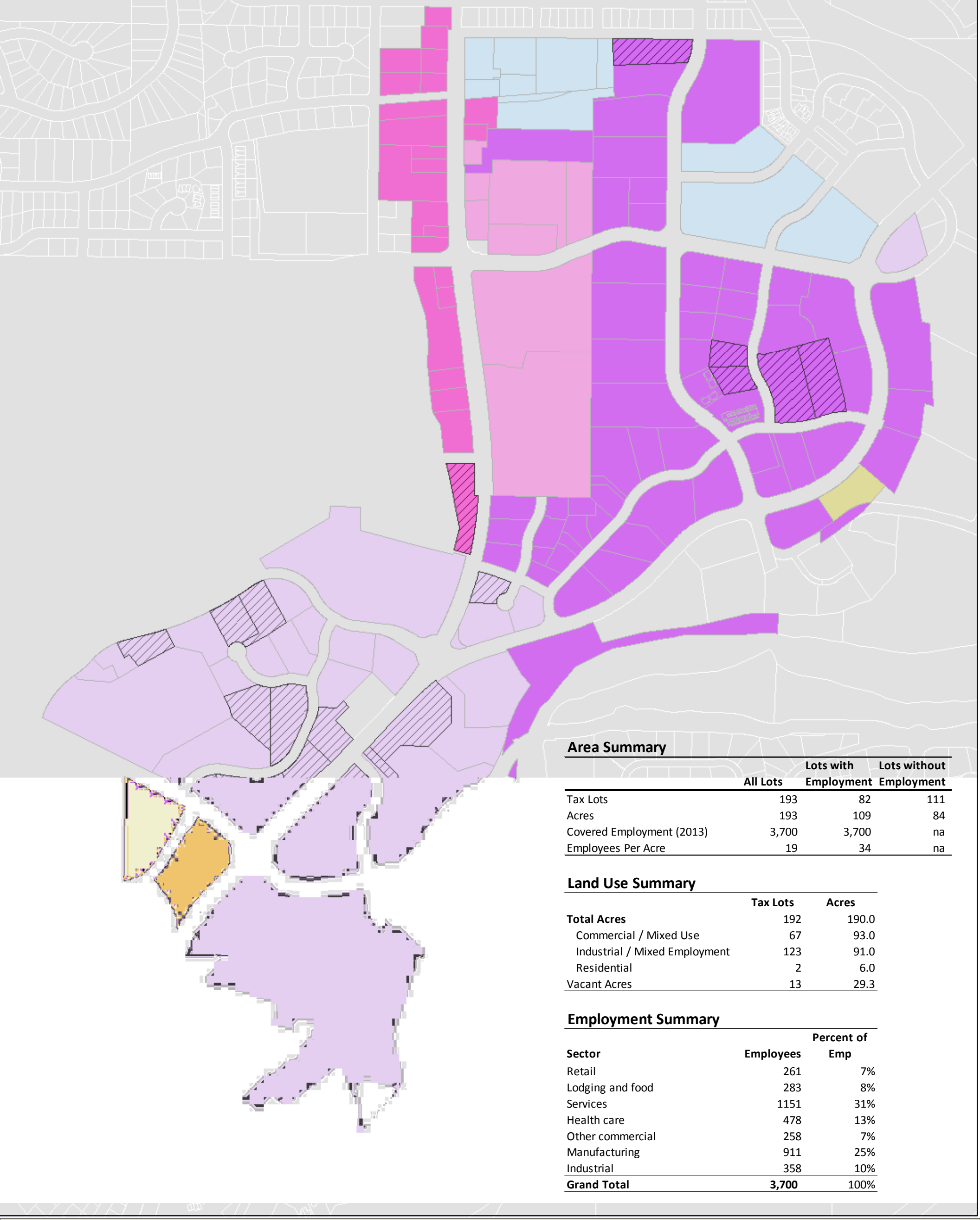

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	193	82	111
Acres	193	109	84
Covered Employment (2013)	3,700	3,700	na
Employees Per Acre	19	34	na

Land Use Summary

	Tax Lots	Acres
Total Acres	192	190.0
Commercial / Mixed Use	67	93.0
Industrial / Mixed Employment	123	91.0
Residential	2	6.0
Vacant Acres	13	29.3

Employment Summary

Sector	Employees	Percent of Emp
Retail	261	7%
Lodging and food	283	8%
Services	1151	31%
Health care	478	13%
Other commercial	258	7%
Manufacturing	911	25%
Industrial	358	10%
Grand Total	**3,700**	100%

Employment Redevelopment Analysis Study Area 8 SW Century Drive

Legend

Plan Designation

- CC
- CG
- CL
- IL
- ME
- MR
- RM
- RS
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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Employment Redevelopment Analysis Study Area 9 Core Pine

Legend

GEN_PLAN

- IG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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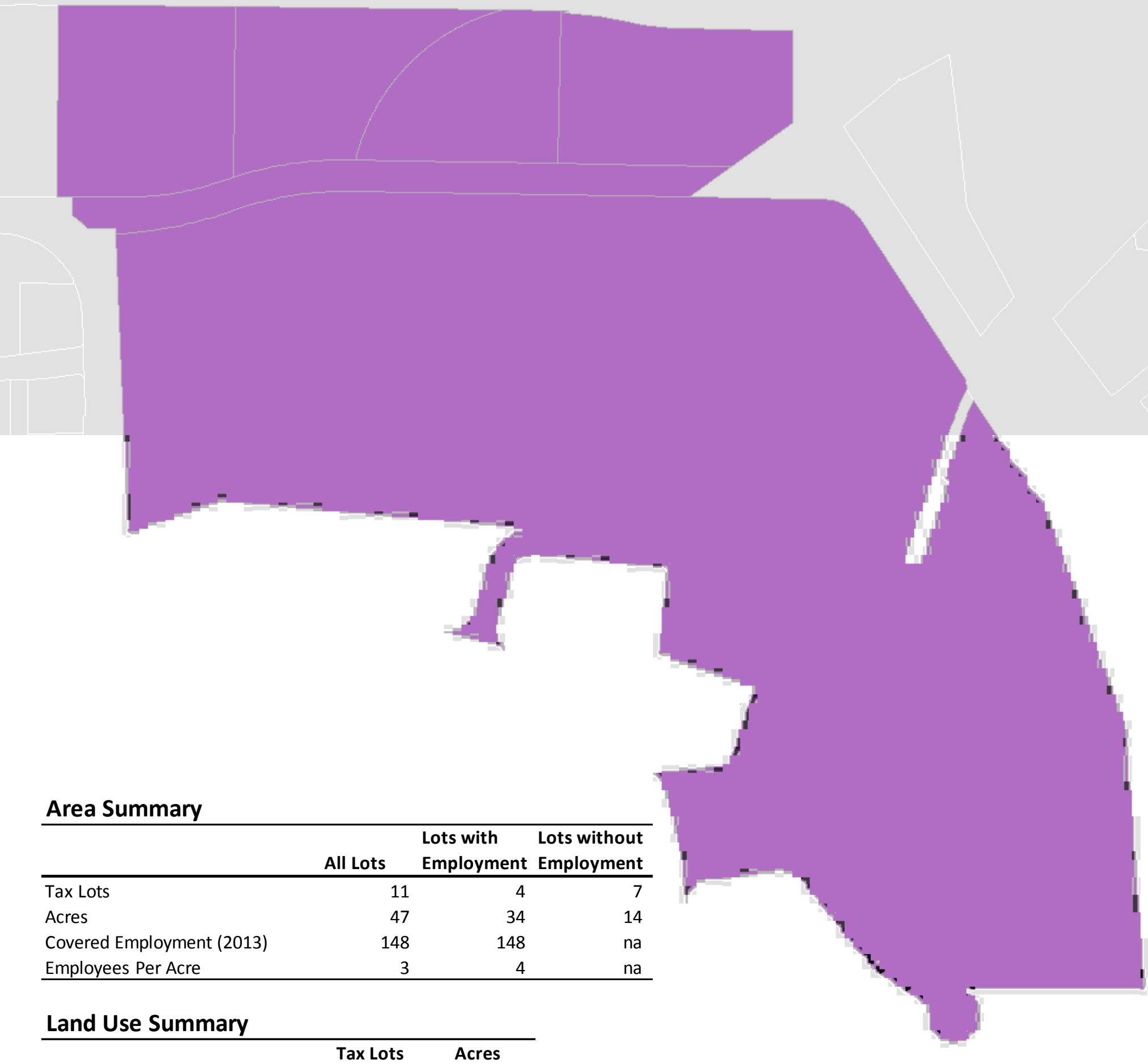

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	11	4	7
Acres	47	34	14
Covered Employment (2013)	148	148	na
Employees Per Acre	3	4	na

Land Use Summary

	Tax Lots	Acres
Total Acres	4	13.8
Industrial / Mixed Employment	4	13.8
Vacant Acres	0	0.0

Employment Summary

Sector	Employees	Percent of Emp
Retail	0	0%
Lodging and food	0	0%
Services	23	16%
Health care	0	0%
Other commercial	35	24%
Manufacturing	65	44%
Industrial	25	17%
Grand Total	**148**	100%

Employment Redevelopment Analysis Study Area 9 Core Pine

Legend

GEN_PLAN

- IG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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Employment Redevelopment Analysis Study Area 10 Newport/Galveston

Legend

GEN_PLAN

- CC
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

Mapping by ECONorthwest
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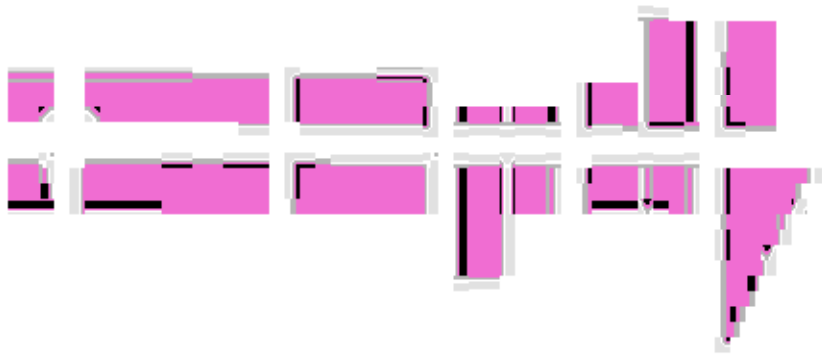
Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	98	40	58
Acres	17	11	6
Covered Employment (2013)	698	698	na
Employees Per Acre	41	65	na

Land Use Summary

	Tax Lots	Acres
Total Acres	98	17.1
Commercial / Mixed Use	98	17.1
Vacant Acres	6	0.8



Employment Summary

Sector	Employees	Percent of Emp
Retail	236	34%
Lodging and food	276	40%
Services	61	9%
Health care	87	12%
Other commercial	10	1%
Manufacturing	28	4%
Industrial	0	0%
Grand Total	**698**	100%

Employment Redevelopment Analysis Study Area 10 Newport/Galveston

Legend

GEN_PLAN

- CC
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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Employment Redevelopment Analysis Study Area 11 Medical District

Legend

Plan Designation

- CC
- RH
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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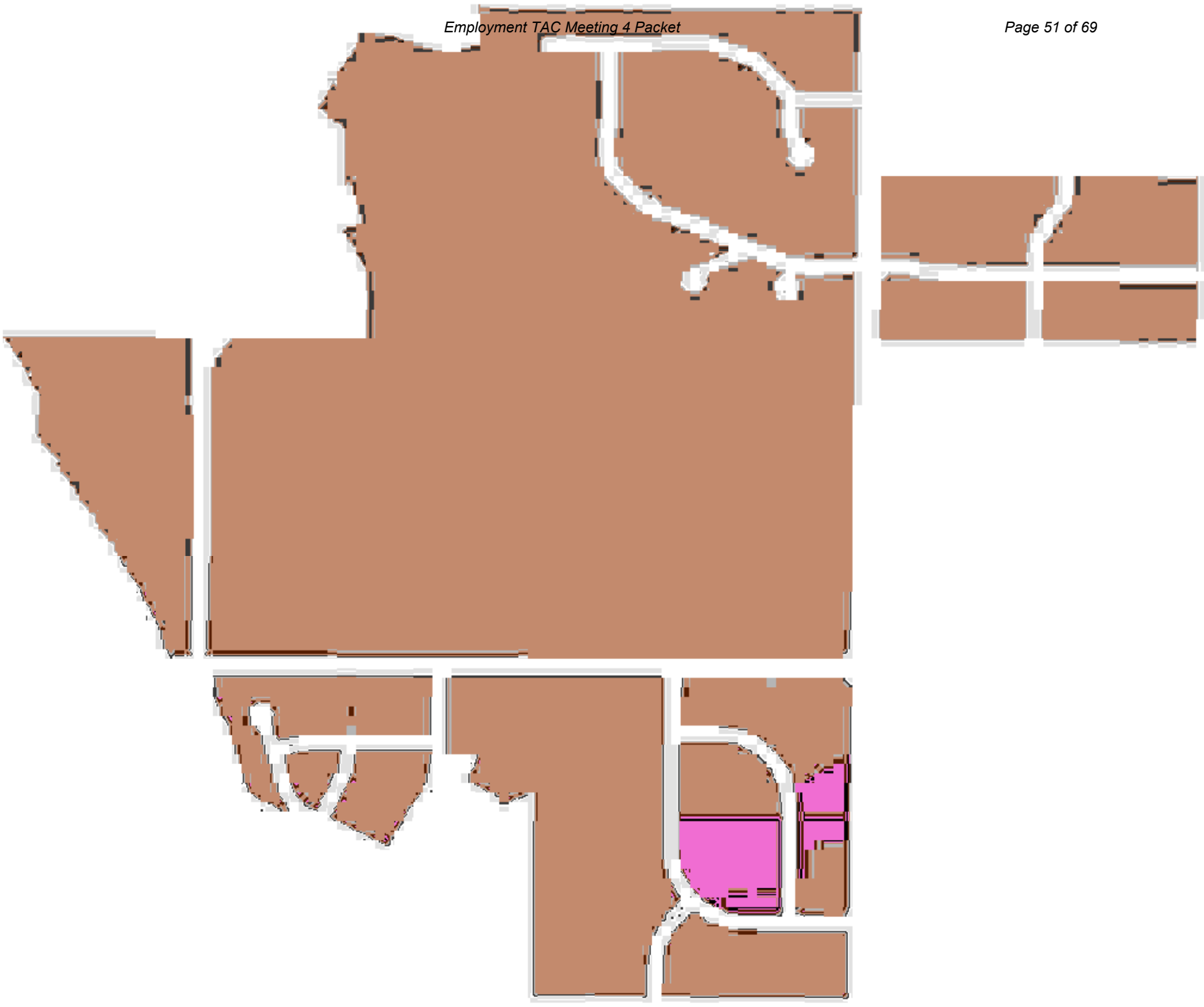

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	95	40	55
Acres	155	118	36
Covered Employment (2013)	9,579	9,579	na
Employees Per Acre	62	81	na

Land Use Summary

	Tax Lots	Acres
Total Acres	95	154.5
Medical	95	154.5
Vacant Acres	5	7.1

Employment Summary

Sector	Employees	Percent of Emp
Retail	nd	0%
Lodging and food	224	2%
Services	307	3%
Health care	8828	92%
Other commercial	213	2%
Manufacturing	nd	0%
Industrial	0	0%
Grand Total	**9,572**	100%

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Employment Redevelopment Analysis Study Area 11 Medical District

Legend

Plan Designation

- CC
- RH
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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Employment Redevelopment Analysis Study Area 12 S. 3rd Street/Murphy Crossing

Legend

Plan Designation

- CG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500 Feet

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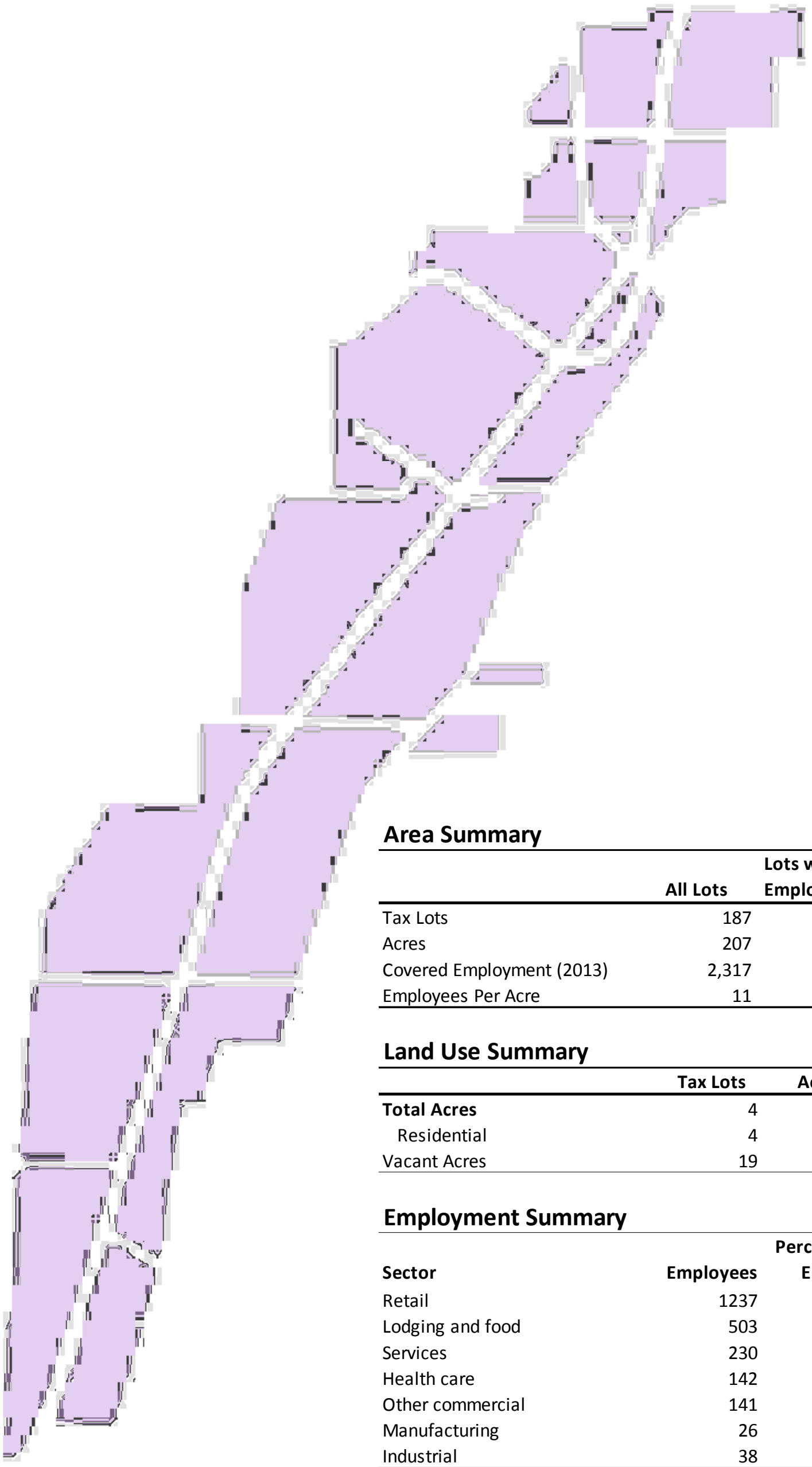

Area Summary

	All Lots	Lots with Employment	Lots without Employment
Tax Lots	187	79	108
Acres	207	135	72
Covered Employment (2013)	2,317	2,317	na
Employees Per Acre	11	17	na

Land Use Summary

	Tax Lots	Acres
Total Acres	4	6.2
Residential	4	6.2
Vacant Acres	19	24.9

Employment Summary

Sector	Employees	Percent of Emp
Retail	1237	53%
Lodging and food	503	22%
Services	230	10%
Health care	142	6%
Other commercial	141	6%
Manufacturing	26	1%
Industrial	38	2%
Grand Total	**2,317**	100%

Employment Redevelopment Analysis
Study Area 12
S. 3rd Street/Murphy Crossing

Legend

Plan Designation

- CG
- Vacant Land
- BendTaxLots

N

0 2,125 4,250 8,500
Feet

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October 2014

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Memorandum

November 11, 2014

To: Employment Lands Technical Advisory Committee
Cc: Bend Staff
From: APG Consulting Team
Re: SPECIAL SITE NEEDS FOR EMPLOYMENT LANDS

INTRODUCTION

This memorandum provides background information for Meeting 4 of the Employment Lands Technical Advisory Committee (TAC); specifically, a brief summary of Remand issues and follow up requirements related to "special site needs" for employment land.

LCDC determined that the City's findings and 2008 Economic Opportunities Analysis (EOA) established an adequate factual basis and policy rationale for including lands beyond the minimum (*e.g.* 20-year) estimate based on projected employment in Scenario A. The following special site needs were approved by LCDC:

- 112 acres for two large industrial sites (east of the UGB);
- 112 acres for a new hospital site (south of the UGB); and
- 225 acres for a new university site at Juniper Ridge (northeast of the UGB).

The Framework Plan Map for the 2008 UGB proposal is attached to this memo and shows the location of the special sites.

As noted in the Remand Order, however, the city has not evaluated whether there are sites within the UGB that could reasonably accommodate these particular site needs. On remand, the City agreed to make findings under Goal 14 that the special site needs could not reasonably be accommodated on vacant or developed land within the prior UGB.

INFORMATION IN THE RECORD

Existing information in the record (primarily from the 2008 EOA) is briefly summarized below for each approved special site need.

Large Industrial Site (112 acres)

For industrial lands, the city documented a need for two large industrial sites (56 acres each). The 2008 EOA states the supplies of economic lands are shrinking and threaten to limit economic growth.[1] As of 2008:

- Bend has only a handful of industrial parcels over 10 acres, less than 30 parcels between 2-10 acres, and over 100 parcels between 0.5 and 2 acres. This illustrates Bend has a severe shortage of medium to large sized industrial/mixed employment parcels in its current inventory.
- The majority of the city's industrial land supply inside the current UGB is located on one parcel called Juniper Ridge. This parcel is 494 gross acres and is owned by the City of Bend.

Employment Shifts and Land Needs - Manufacturing

Uses that have traditionally located in Bend's industrial zones – heavy manufacturing, warehousing, transportation, utilities and communications and wholesale trade – have been among those businesses most affected by changing market conditions. Job growth in most of these industrial occupations has slowed due to consolidation of firms, automation, exporting jobs to other countries, and environmental concerns. In general, as job growth in these sectors has slowed, there has been a corresponding decline in land needed to support the larger industrial manufacturing and warehousing uses.

Fortunately, the manufacturing sector in Bend is now much more diverse than in the past, with the decline in local lumber and wood product employment being offset by many small manufacturing firms. Prospects for future expansion across a variety of light manufacturing industries appear excellent as increasing numbers of small manufacturers are attracted by the livability factor and the existence of a rapidly-growing labor force.

Since the market demand has been so strong for smaller lots, private landowners have had little incentive to create or hold industrial lots of 15, 10 or even 5 acres in size. The lack of industrial lots in this size range has made it difficult – and expensive – for local firms to expand. In addition, the lack of large lots in the inventory has hindered efforts to attract larger manufacturing or warehousing firms. Although the demand for large parcels is limited, there is a need to have a few large parcels in the city's inventory for firms that require a bigger site. It is probably most appropriate for a public agency to be the party holding large lots in reserve for future development. The city, county, state, and federal government all have large holdings next to the urban growth boundary.[2]

[1] City of Bend Economic Opportunities Analysis (2008), Executive Summary.

[2] Bend EOA (2008), pages 40-41.

General Site Requirements for Industrial Land

In planning for continued economic growth, it will be important for Bend to keep in mind the characteristics of suitable employment land. These characteristics, including access to public infrastructure, site size, and flat topography, are catalogued in Section 4 of the 2008 EOA. In general, industrial firms seek land with the following characteristics[3]:

- **Flat topography.** Key components of many industrial processes include truck ingress and egress, product handling, manufacturing, and warehousing – all of which require flat sites on which vehicles and products can move smoothly and efficiently.
- **Adequate parcel sizes.** Sites must accommodate low-density buildings as well as generous areas for truck circulation and loading, and parking. Tenants also look for sites that are large enough to accommodate multiple phases and provide for expansion. Small industrial users may require no more than 1,000 to 3,000 square feet within a larger building complex, while it is not uncommon for large industrial users to seek 20 acres or more on which to operate.
- **Proximity to high-quality surface transportation.** Multiple transportation modes may be desirable. For most employers, the most desirable are truck and auto transportation facilities. After that, demand for other modes, including air, rail, and water transportation will be determined by the type of business and its shipping and distribution needs.
- **Serviced by utilities**, including energy, communications, sewer, water, storm water, and possibly others.
- **Buffered from incompatible uses.** This factor is more important for "heavy industrial"/manufacturing firms than for "light industrial" firms because the noise, odor, light, and other impacts produced by the former type tend to impose more of a nuisance on residents and other nearby uses.
- **Price.** Because industrial firms often need large buildings and sites in which to operate, they are very sensitive to changes in the cost of built space and land (usually measured in dollars per square foot).

As shown on the Framework Plan Map, the 2008 UGB proposal identified two, contiguous 56-acre sites located north of Highway 20 and south of Neff Road to accommodate the special large-site industrial need. The sites are consistent with the general characteristics and suitability requirements noted above for industrial land, although full urban services are not currently available with the location outside the current UGB. The special industrial site (total of 112 acres) is not contiguous with the UGB and is currently designated for Agriculture.

The sector targeting work in the EOA calls for attracting secondary wood products, renewable energy resources, aviation, recreation equipment and specialty manufacturing, and information technologies. The 2008 EOA and findings indicated that the special industrial site(s) will be

[3] Bend EOA (2008), pages 60-61.

reserved for these uses and will create the land base needed to attract some of Bend's targeted employment sectors.

The project team notes that recent court decisions pertaining to Newberg and Woodburn UGB expansion(s) are relevant to the issue of site characteristics for large-site industrial needs in Bend. Specifically, LUBA found that land price is not relevant as a site characteristic. LUBA also found that while all industries need appropriate access, relatively flat topography, and public facilities, an EOA must determine what attributes are "reasonably necessary" for each "particular industrial use."[4] To address these cases, the project team believes it will be necessary to focus more specifically on the necessary site characteristics for the targeted sectors: secondary wood products, energy resources, aviation, recreation equipment and specialty manufacturing, and information technologies.

The portion of Juniper Ridge that is within the UGB (about 500 acres) and designated for Light Industrial uses is likely the only site within the UGB that will need to be evaluated to determine if it could accommodate the identified large-site industrial need. The EOA concludes that Juniper Ridge is expected to be a popular location for industrial firms as it becomes better served by transportation and other infrastructure.

Recommendation for Special Land Need for Large-Site Industrial

The project team recommends carrying the special land need for the large-site industrial uses(s) approved by LCDC forward to Phase 2.

1. At the conclusion of Phase 1, assume that 116 acres will be added to the estimated 2028 employment land need for the special large-site industrial use(s) and will be considered in at least one of the UGB scenarios evaluated in Phase 2.

   ### *Request for TAC Action:*

   Does the TAC support carrying the special site need (116 acres) forward for evaluation in Phase 2?

2. Flesh out site characteristics that are "reasonably necessary" for the "particular targeted industrial uses" based on the guidance from recent court cases. Include these more specific site characteristics in the revised EOA.

   ### *Request for TAC Action:*

   Input on more specific site characteristics for targeted industrial sectors? (Can be submitted after Meeting 4)

3. The Remand requires evaluation of whether the existing UGB includes land with particular characteristics to accommodate the large-site industrial uses.

[4] *Friends of Yamhill County v. City of Newberg,* 62 OR LUBA 5 (2010).

Request for TAC Action:

Does the TAC support considering at least a portion of Juniper Ridge in one of the scenarios to be evaluated in Phase 2 to meet the special large-site industrial need?

4. If a revised UGB includes land to meet "special" site needs for large-lot targeted industries, policies or strategies will be required to protect the site(s) for intended industrial uses.

Request for TAC Action:

Can the TAC provide input on policies or strategies that might be appropriate, such as requiring a master plan for the special industrial site(s), limiting parcel sizes for land divisions, etc.? (Can be submitted after Meeting 4)

New Hospital Site

The 2008 EOA includes the following information regarding the need for a new hospital site:[5]

- Approximately 65 percent of Bend's health care employment takes place at the St. Charles Medical Center in the Medical District Overlay (MDOZ includes 209 acres).
- Goal 9 encourages cities to work with existing businesses to determine their expansion needs. The new hospital site is included based on discussions with St. Charles Medical Center. Medical and Health Care is also a targeted sector for Bend, and the hospital site will advance Bend's goal to retain its position as a regional health care provider.

The more targeted identification of the need for a new hospital site in the southern part of Bend is found on pages 121-122 of the 2008 EOA:

The need for approximately 112 acres is the southern part of Bend for a new hospital site was identified through numerous discussions with representatives from St. Charles Medical Center, the region's largest regional medical provider. Feedback from these representatives originally placed the new hospital site in the north of Bend, but since the completion of a ten-year facilities master plan, their strategy evolved to suggest the south is a more appropriate location for a new hospital. Their work suggests the current hospital site will be the regional flagship medical center that will be enhanced and enlarged during the next 10 years. However, at the end of the planning period an entirely new hospital will likely be needed based on population growth and facility obsolesce.

As required by the Remand, UGB findings will need to document whether the land need for a new hospital site can be accommodated within the existing UGB.

[5] Bend EOA (2008), pages 121-122.

Change in Circumstances since 2008 Proposal

As documented in an article in the Bend Bulletin published May 23, 2014,[6] St. Charles Health System is proceeding with a massive, $22 million renovation at St. Charles Bend this fall, remodeling much of the hospital's five-story patient and nursing area. Funding from the project is coming from $75 million in bond sales the hospital secured this year, in an arrangement with Deschutes County. Construction will probably last into early 2017.

The $22 million Bend project comes as the nearly 40-year old nursing tower has started showing its age. The renovation has been discussed for several years. According to hospital construction director Jim Walker, "What we're trying to do is set the hospital up for another 25 or 30 years of patient care."

Recommendation for Special Land Need for New Hospital Site

The project team does not recommend carrying the special land need for a new hospital site (112 acres) south of the existing UGB forward to Phase 2. St. Charles is focusing on substantial improvements and investments at the existing hospital site within the UGB within the planning period. In addition, approximately 68 acres adjacent to the hospital site are vacant, included in the Medical District Overlay and served with substantial infrastructure, including transit.

The project team does not believe that evidence is available to support defensible findings that the hospital use cannot be accommodated within the existing UGB.

Request for TAC Action:

Does the TAC support the recommendation of the project team regarding a new hospital site?

University Site

The 2008 EOA includes the following information and rationale for including 225 acres in the UGB for a University District:[7]

University District – 225 acres for a new university in conjunction with the industrial, commercial, and residential development at Juniper Ridge. The university has been identified as a critical component in the 2030 Vision as well as the Juniper Ridge Master Plan. The land need for this use was based on a review of numerous universities throughout the nation as part of the Juniper Ridge Master Plan.

The special site characteristics for the use include a large minimum acreage of 225 acres, surrounding compatible and supportive uses, and public ownership. The ideal site would provide convenient transportation access from a local and regional perspective. Surrounding uses must be compatible with a university and include commercial, housing, open space, and

[6] "St. Charles plans $22 million Bend Renovation," article in Bend Bulletin, published May 23, 2014.

[7] Bend EOA (2008), pages 122-123.

other supportive uses. This land is not included in any estimates for land need and would be in addition to existing land deficiencies.

Higher Education is also a targeted sector for Bend as documented in the Sector Targeting section of this EOA, and is a critical component to advancing Bend's overall economic objectives. As noted in research documents in this EOA, the presence of a university in Bend complements its overall economic growth strategy to attract high-tech manufacturing, bio-tech, and renewable energy enterprises (all targeted sectors). The presence of a university in Bend would complement Bend's efforts to attract professional services, high-tech manufacturing, and other businesses that require highly educated workers. A university would also provide additional opportunities for citizens to obtain 4-year and graduate level education in Central Oregon.

As shown in the Framework Plan Map for the 2008 UGB proposal, the special site for the University District was proposed at Juniper Ridge, northeast of the portion of Juniper Ridge that is currently within the UGB and designated for Light Industrial use. The proposed University District site is currently designated for Agriculture in the Deschutes County Comprehensive Plan.

As noted in the Remand Order, the 2008 UGB proposal did not include findings to document whether there were sites within the UGB that could reasonably accommodate the university use.

Change in Circumstances since 2008 UGB Proposal

There have been substantial changes in circumstances since the City of Bend proposed a 225 acre University District at Juniper Ridge as part of the 2008 UGB proposal.

- OSU-Cascades purchased a 10-acre development site near the Century Drive and Chandler Avenue roundabout and submitted a proposal for a Phase 1 campus to serve up to 1,900 students. A hearings officer ruled the university's proposal met city of Bend code requirements on September 2, 2014 (PZ-14-0210). The majority of the subject property is zoned Limited Commercial (CL). The university use is a permitted use in the CL zone. Approval was granted with 29 conditions. The City Council upheld the Hearings Officer's decision on appeal, with some modifications to conditions.
- OSU has optioned an adjacent 46-acre site within the UGB, which is a former pumice mine. A City Council condition requires that OSU enter into a master planning process if they purchase the adjacent 46-acre site for expansion prior to development on that site.

Recommendation for Special Land Need for University Site

OSU-Cascades has purchased a site within the existing UGB and proceeded with land use permitting for a Phase 1 campus to serve up to 1,900 students. OSU-Cascades also optioned an adjacent 46-acre site within the UGB that may be used for future expansion of university-related uses.

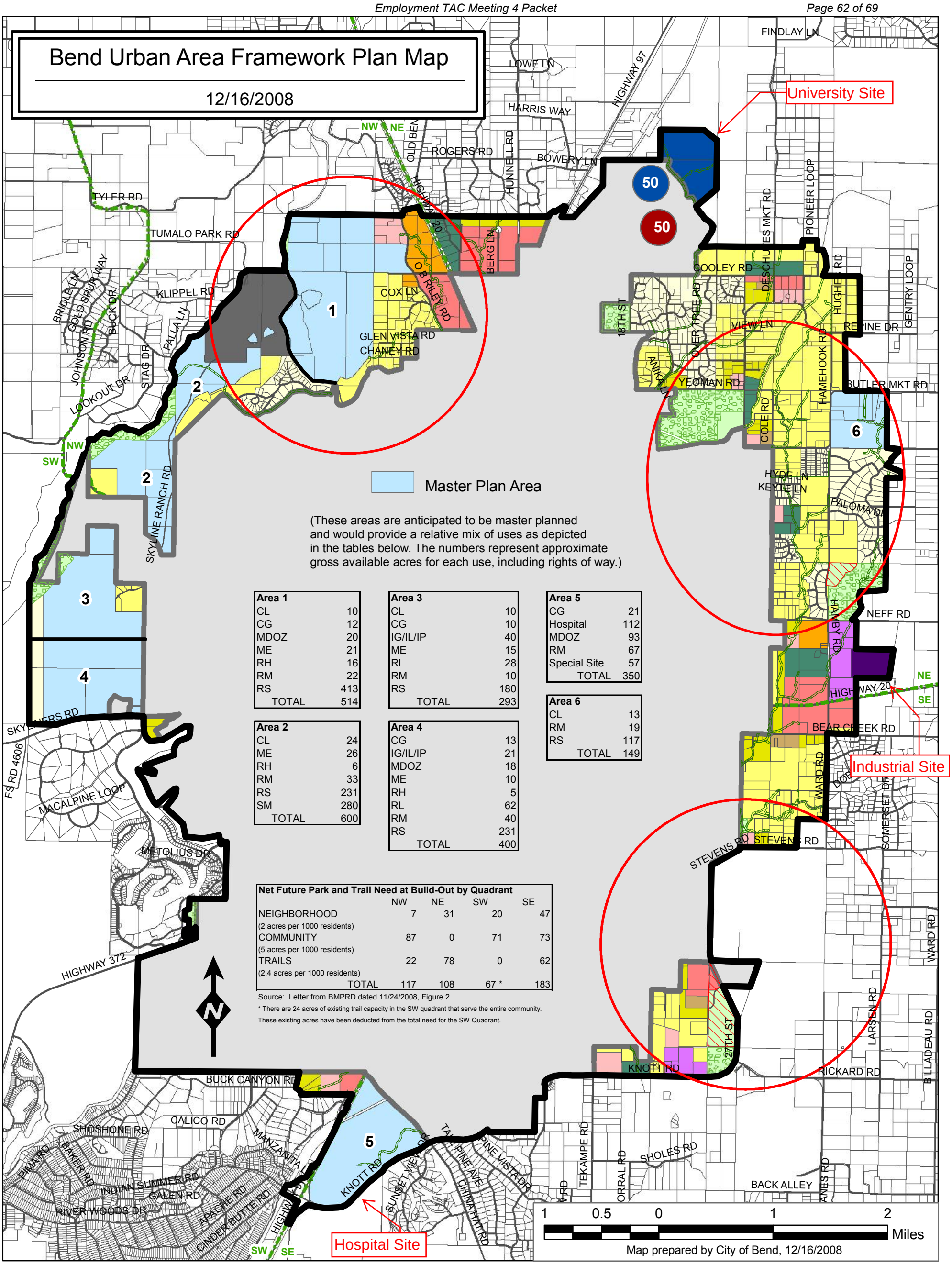
In light of these actions, the project team does not believe that evidence is available to support defensible findings that the university use cannot be accommodated within the existing UGB during the planning period.

Request for TAC Action:

Does the TAC support the recommendation of the project team regarding the university site?

Bend Urban Area Framework Plan Map

12/16/2008



(These areas are anticipated to be master planned and would provide a relative mix of uses as depicted in the tables below. The numbers represent approximate gross available acres for each use, including rights of way.)

Area 1	
CL	10
CG	12
MDOZ	20
ME	21
RH	16
RM	22
RS	413
TOTAL	514

Area 2	
CL	24
ME	26
RH	6
RM	33
RS	231
SM	280
TOTAL	600

Area 3	
CL	10
CG	10
IG/IL/IP	40
ME	15
RL	28
RM	10
RS	180
TOTAL	293

Area 4	
CG	13
IG/IL/IP	21
MDOZ	18
ME	10
RH	5
RL	62
RM	40
RS	231
TOTAL	400

Area 5	
CG	21
Hospital	112
MDOZ	93
RM	67
Special Site	57
TOTAL	350

Area 6	
CL	13
RM	19
RS	117
TOTAL	149

Net Future Park and Trail Need at Build-Out by Quadrant

	NW	NE	SW	SE
NEIGHBORHOOD (2 acres per 1000 residents)	7	31	20	47
COMMUNITY (5 acres per 1000 residents)	87	0	71	73
TRAILS (2.4 acres per 1000 residents)	22	78	0	62
TOTAL	117	108	67 *	183

Source: Letter from BMPRD dated 11/24/2008, Figure 2

* There are 24 acres of existing trail capacity in the SW quadrant that serve the entire community. These existing acres have been deducted from the total need for the SW Quadrant.

Proposed Land Use

CB, CG, CL, IG/IL/IP, MDOZ, University, ME, PF, SM, RL, RM, RH, Special Site Industrial, RS, Commercial Convenience, Institutional, and additional Schools, Parks and other Public Facilities

CC (It is anticipated that CC nodes approximately 2 acres in size will be developed in residential areas approximately 1/2 mile from other CC nodes.)

Existing UGB; Proposed UGB (Alt 4A); Existing Park Site; Existing School Site; Potential Open Space (Canals); Potential School Site (Based on Bend-La Pine School District's 2005 Sites and Facilities Study.); Park Service Area Quads

Memorandum

November 10, 2014

To: Residential Lands Technical Advisory Committee
Employment Lands Technical Advisory Committee

From: Bend Staff
APG Consulting Team

Re: Juniper Ridge Land Use Planning

This memorandum summarizes the master plan proposed for Juniper Ridge in 2008, and the subsequent land use actions creating the Juniper Ridge Overlay Zone.

JUNIPER RIDGE MASTER PLAN

The City initiated the master planning process for Juniper Ridge in 2003 with a set of guidelines endorsed by the Bend City Council for creating a new employment center in Central Oregon. The guidelines included:

- Light Industrial/Research Park;
- Mixed Use Development;
- Wide buffer areas;
- Future college campus;
- Pathways, parks and open space on over 10% of the site
- New transportation interchanges and;
- Incentives for sustainable development

Following a 16-month public process, a preferred plan for Phase 1 of Juniper Ridge emerged (see Figure 1). The city used this preferred plan as the basis for issuing a "Request for Qualifications" to hire a design team to deliver a master plan and future development opportunities for Juniper Ridge. The City hired the Juniper Ridge Partners to develop the Juniper Ridge Technology and Research Park.

The total land area within Juniper Ridge owned by the city is 1,500 acres. Approximately 494 acres is located within the existing City limits. The master plan developed by Juniper Ridge Partners included a plan for the entire 1,500 acres (see Figure 2). The goal of the master plan was to create a vibrant place with a variety of land uses including residential, industrial, office and commercial, a university and parks and open space interwoven in a mixed-use development. It was important that the new mixed-use community was walkable and provided a range of building types and densities.

Figure 1: Juniper Ridge Phase 1 Preferred Plan

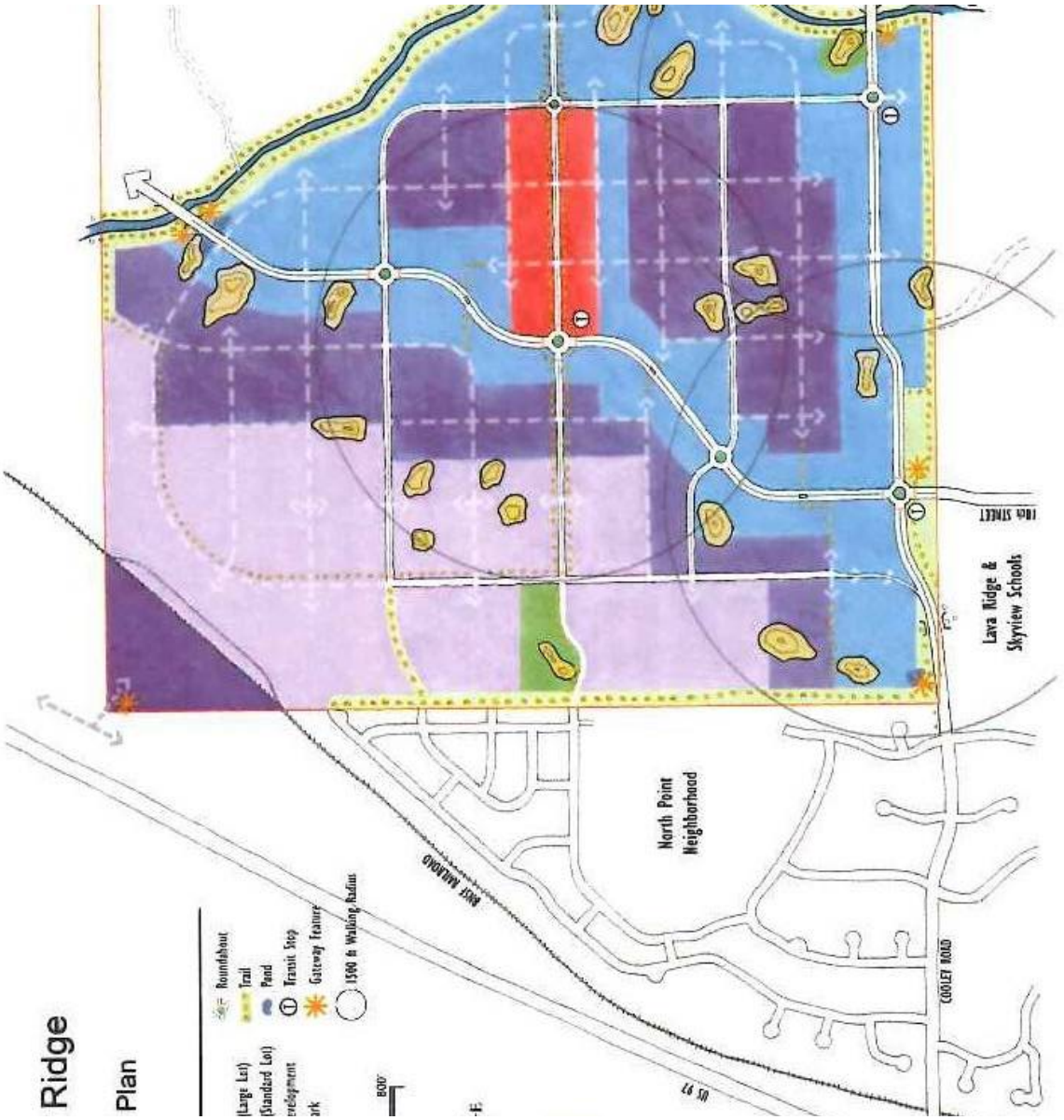


Figure 2: Juniper Ridge Master Plan

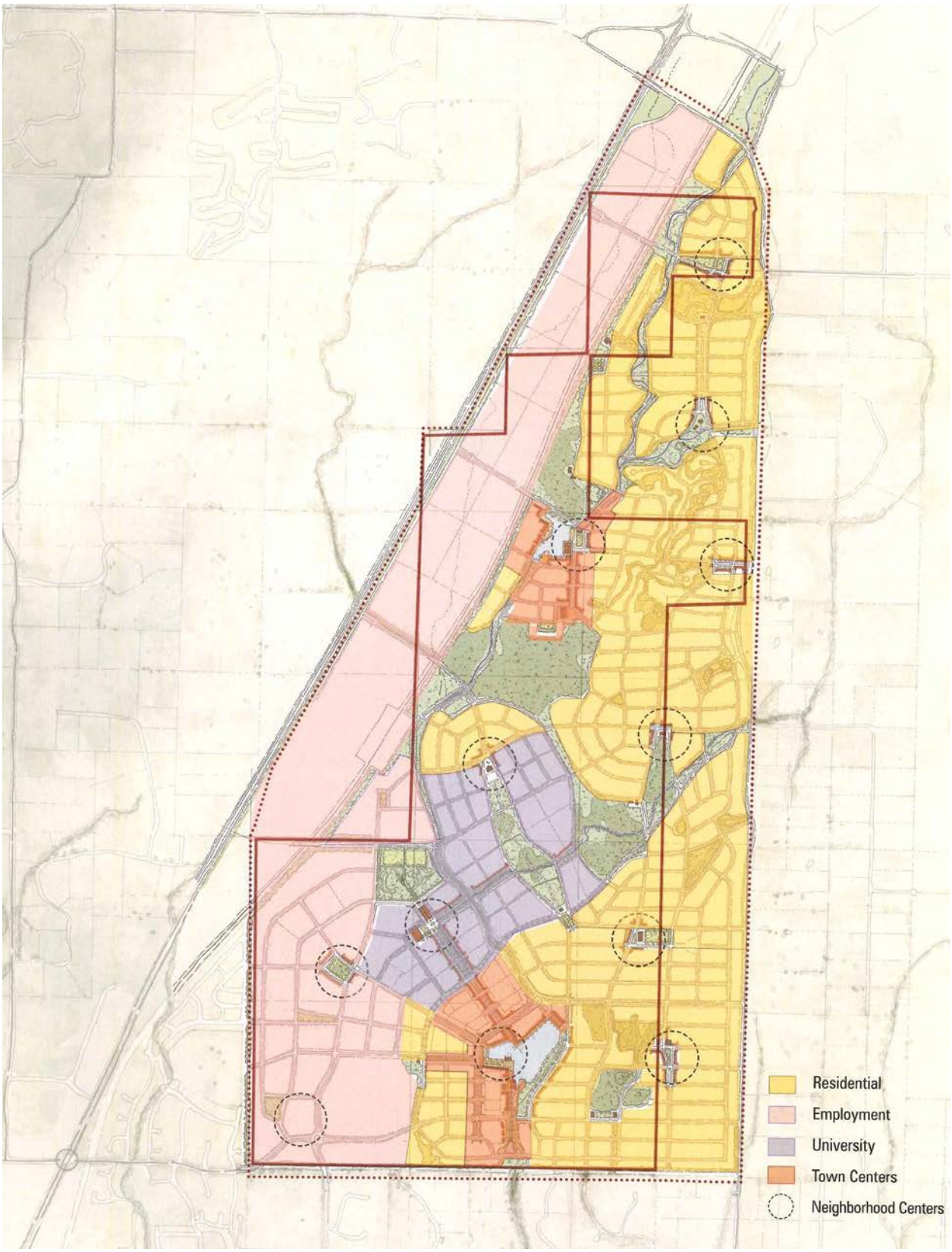
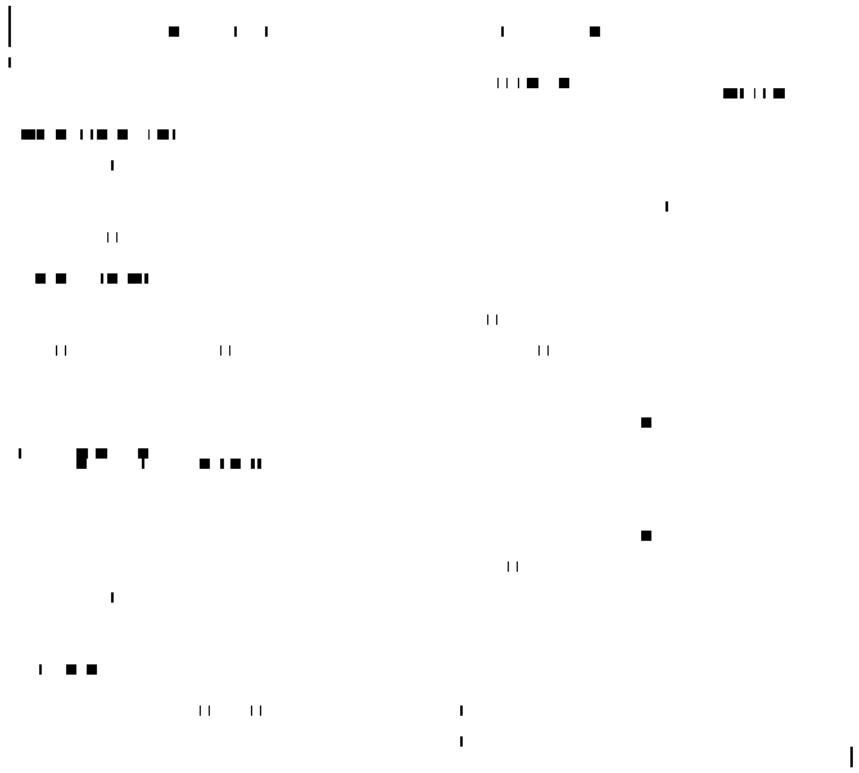


Table 1 lists the mix of uses and building types contemplated in the Master Plan and the approximate number of acres and the densities proposed.

Table 1: Juniper Ridge Master Plan Development Program

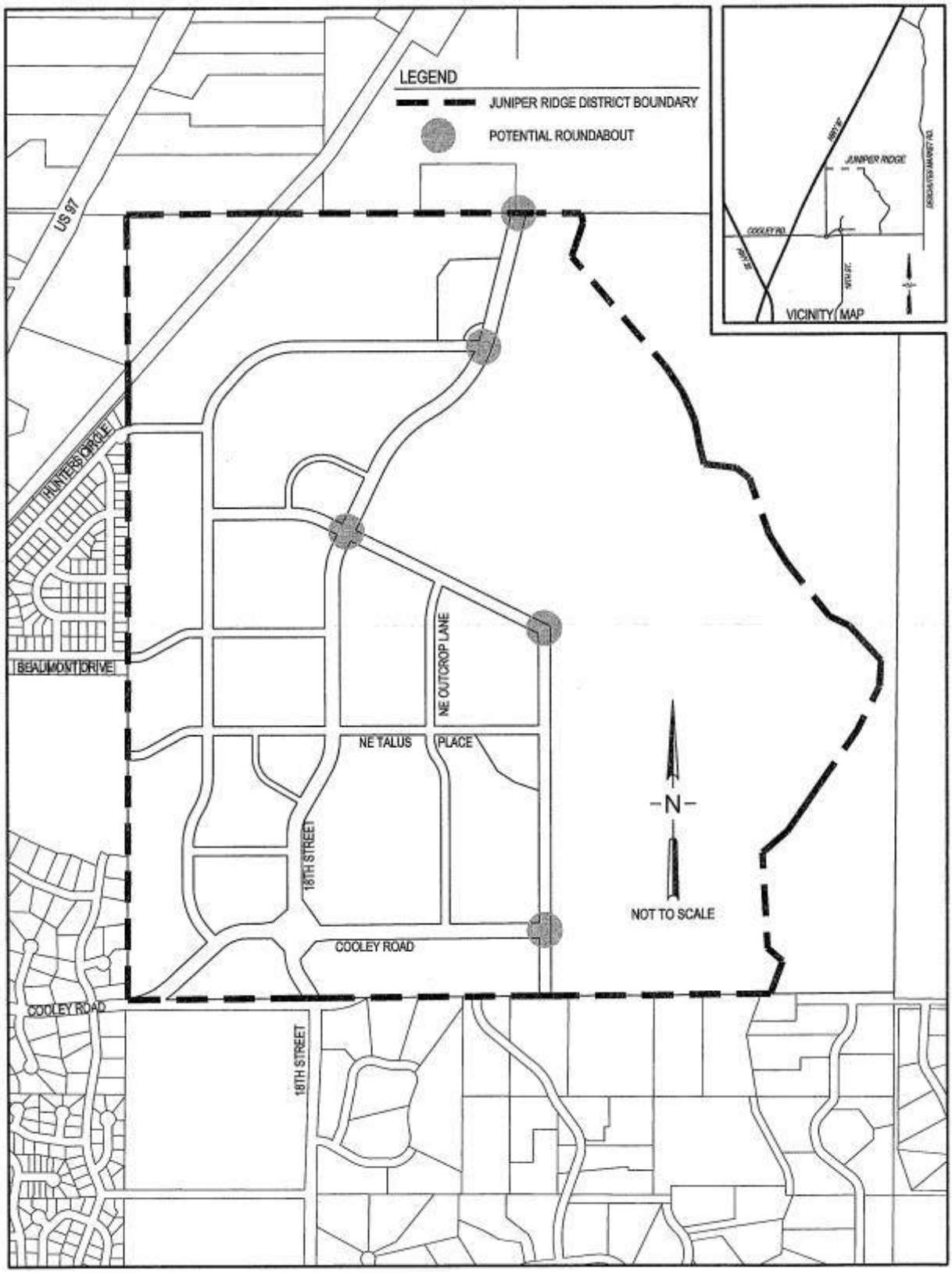


JUNIPER RIDGE OVERLAY

The Juniper Ridge Overlay Zone was adopted in 2010 to provide opportunities for the development of employment uses within the first phase of Juniper Ridge. The overlay zone encompasses 306 acres of land. The development layout is consistent with the master plan developed by Juniper Ridge Partners and discussed above (see Figure 3).

The Overlay Zone provides specific development standards including building setbacks, building heights, fencing and screening, street design standards and transportation mitigation. Unfortunately, the Special Planned District does not provide any guidance on the building prototype or provide for any design review.

Figure 3: Juniper Ridge Overlay Zone



EMPLOYMENT LAND CONSIDERATIONS FROM 2008 EMPLOYMENT OPPORTUNITIES ANALYSIS (EOA)

The 2008 EOA includes an analysis of industrial land supply, input from industrial and employment land developers and users, and recommendations regarding the distribution of supplies of industrial lands. The following briefly summarizes key points related to Juniper Ridge and industrial land supplies in the EOA for sake of background and discussion by the Residential and Employment TACs as they consider any potential changes to the type and mix of land uses for the portion of Juniper Ridge inside the current UGB.

Any changes to future plan designations at Juniper Ridge will have impacts on industrial land supplies and the location of new industrial areas inside the current UGB, or in any expansion areas. Simply put, if land with a plan designation of Industrial Light (the plan designation for land at Juniper Ridge inside the current UGB) is converted to another use like residential or commercial, then an equivalent amount of land would likely need to be provided elsewhere in any UGB expansion area.

Mentions of Juniper Ridge occur throughout the 2008 EOA. With respect to land supply, pages 91-99 illustrate that Juniper Ridge is one of a handful of vacant parcels over 20 acres inside the current UGB. At the time, it also represented 59% of the total land supply for industrial and mixed use employment land for the planning period. "Effectively, the entire supply of new large industrial sites in Bend would be in one location and under one ownership if no other industrial and mixed use lands are added to the UGB. This presents a number of potential problems. First, well documented transportation deficiencies near Juniper Ridge limit the marketability of this parcel for years. Second, many potential industrial site users may not find the Juniper Ridge location ideal form a number of standpoints. Third, the private sector has no opportunity to compete with the city in terms of price, location, and supply if no additional land is made available."[1] However, there may also be advantages of public ownership as well, including the possibility of low holding costs, and a patient land owners, or for the city to focus on encourage targeted industries to locate at Juniper Ridge.[2]

Policy input from stakeholders and decision makers at the time the EOA was written encouraged industrial lands to be distributed around the 2009 UGB expansion area to provide a greater mix of locations, ownerships, regulatory models and controls, flexibility and choice in the market, and decreased development limitations due to infrastructure shortfalls in specific locations.[3] The contested "market choice" factor was introduced in part to provide additional supplies of new industrial land outside of Juniper Ridge since the 2008 EOA predicted sufficient supplies of industrial land were available for the 20-year planning period.

While the final land need analysis for industrial land is not complete at this time, recent Employment TAC direction and USC approval to not apply a market choice factor suggests that

[1] Page 97 EOA.

[2] Page 64 EOA.

[3] Page 113 EOA.

significant new supplies of industrial and mixed use land are not likely to added to the expanded UGB. Changing the mix of future land uses at Juniper Ridge may be one way to create new industrial areas inside, and outside the current UGB.

PUBLIC INPUT ON JUNIPER RIDGE THROUGH METROQUEST

The Bend Urban Growth Boundary Remand MetroQuest Survey (survey) collected input from the public about the proposed project goals, their relative importance, and the level of support for project strategies among members of the community from July 31, 2014 through August 24, 2014.[4] One part of the survey asked users "Where should we guide growth and change to accomplish our strategies?" and instructed users to drag markers on the map to indicate where changes or improvements should happen over the next 15 years. A comment could be included with each pin as well. A land use tab asked users to indicate where they would like to see more:

- Housing (Apartments, Townhomes, 2-3-4-Plex Homes, Single Family Homes, Mixed Use)
- Shopping (Small Neighborhood Centers, Larger Retail Centers, Other)
- Employment (Small Industrial, Offices, Large Industrial, Other)
- Other

The most common uses identified for Juniper Ridge include large and small industrial, offices, single family homes, residential mixed use, and small neighborhood centers. A number of participants also mentioned Oregon State University (OSU) for this area. Nearly half of the pins on Juniper Ridge were for Employment uses (roughly 65 pins). Another 25% of pins were for residential uses (roughly 35 pins), with the remainder split between shopping and other (largely indicating OSU in comments).

[4] More detailed information about the survey can be found in the Metroquest Survey: Project Goals & Strategies report: http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=18710

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: Employment TAC #4

Date: November 17, 2014

Location: Bend City Hall Council Chambers

Name	Organization	Email Address
Ken Brinich	Hendrix Brinich & Batcheller	Ken.kbrinich@bendcable.com
Pete Christoff	Merrill O'Sullivan, LLP	pchristoff@gmail.com
Dale V. Vellmann	Boundary	

City of Bend
Employment Lands Technical Advisory Committee
Meeting Notes
November 17, 2014

The Employment Lands TAC held its regular meeting at 2:30 pm on November 17, 2014 in the Bend City Council Chambers. The meeting was called to order at 2:30 pm by Chair Jade Meyer.

Roll Call

Ken Brinich
Peter Christoff
Brian Fratzke
Christopher Heaps
William Kuhn
Wesley Price
Ron White
Joan Vinci
Wallace Corwin
Jade Meyer
Anne-Marie Colucci

BUILDABLE LANDS INVENTORY POLICEY ISSUES

Agreed on core values for employment areas:

- Accessible
- Connected
- Services
- Outdoor amenities

UGB ANALYSIS BASE CASE

Limiting factors for growth in existing employment areas:

- Rents in Bend are lower than expected
- Parking requirements
- Lot coverages
- SDCs

EFFICIENCY MEASURES – OPPORTUNITY AREAS

TAC agreed that the evaluation for Citywide base case redevelopment assumption would include 12 study areas (COCC eliminated at last TAC meeting).

TAC requested sensitivity testing for (IRR) at 8%, 10% or 12%.

TAC agreed that a 6-7% absorption rate for new employment in existing employment areas seemed reasonable, although they questioned some of the assumptions this number is based on. TAC felt that land values were too low (cost per foot for dirt).

Discussion of Special Sites:

- Large Industrial: Yes, keep in. Understand that policies for preserving will be tricky. Suggested adding base geology to criteria (i.e. areas of welded tuff are harder to develop than areas with soil). The Regional Large Lot EOA and statutory guidelines will be useful information for this issue.
- Hospital: Agree that with St Chas plans, no longer needed. Drop.
- University: Agree that with OSU's chosen location, no longer needed. Drop.

Meeting adjourned at 4:44 pm by Jade Meyer.

Meeting Agenda

Urban Growth Boundary Technical Advisory Committee – Meeting 4
Tuesday, November 18, 2014 10:00 AM – 12:30 PM
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Review follow-up information regarding the Federal Wild and Scenic River requirements
- Review and approve Phase 2 milestones
- Review and preliminarily approve the "indicators" to be used in the Base Mapping stage of Phase 2, i.e. in the creation of UGB scenarios.

The follow-up item is information to address questions raised in TAC 3 regarding setbacks applicable to the Federal Wild and Scenic River corridor.

The Phase 2 milestones were presented at the All TAC meeting on October 9 and discussed briefly at Boundary TAC 3. At TAC 4, the Boundary TAC will discuss an update to the milestones intended to help clarify what happens at each stage of Phase 2, particularly with respect to how Goal 14 factors are applied. The packet materials describe an approach where Goal 14 indicators are applied in the process of creating UGB scenarios. The packet also describes how Goal 14 performance measures are applied in the evaluation of scenarios. The goals of these materials and the TAC discussion is to ensure that a clear and defensible process is defined as the basic structure for Phase 2.

The specific discussion questions, i.e. the feedback we would like from the TAC, are listed as the bulleted discussion questions under each agenda item. They are a starting point for the agenda.

1. Welcome — 10:00 AM

a. Welcome and convene — Co-chairs
b. Short reports from other TACs — Liaisons

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

2. Follow-up Items from TAC 3 — 10:15 AM

Information

a. Federal Wild and Scenic River requirements — Mary Dorman

3. Phase 2 Milestones and Indicators — 10:30 AM

Information and action

a. Phase 2 milestones (see memorandum and chart) — Mary Dorman
b. Base mapping indicators (see memorandum)

Discussion questions and requested action:

- Is the approach clear and easy to understand – or at least as clear as possible when working under a Remand and complex rules?
- Does Table 1 capture key indicators to consider in the Base Mapping Stage for each of the Goal 14 factors? *Note:* after agreeing on key indicators, the team and TAC can move to agreeing on how to measure these indicators.
- Action: Does the TAC approve the Phase 2 Milestones chart and Base Mapping Stage indicators in Table 1 as the basis for continued development of methodology for Phase 2?

4. Approach to Ranking During Base Mapping: Factor 1 - Efficiency — 11:30 AM

Information and action

- See memorandum (page 8). — Mary Dorman and Bob Parker

Discussion and requested action:

- Action: Does the TAC generally support this proposed approach to ranking parcels in the study area based on the key indicators?

5. Public Comment — 12:15 PM

This is an opportunity for visitors to provide comments to the TAC. — Chair

6. Project News — 12:25 PM

a. Announcements, news and notes — Team

7. Adjourn — 12:30 PM

Memorandum

November 10, 2014

To:	Boundary and Growth Scenarios Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	PROPOSED METHODOLOGY FOR FRAMING AND EVALUATING URBAN GROWTH BOUNDARY SCENARIOS BASED ON GOAL 14 FACTORS

FOLLOW-UP ITEM FROM LAST MEETING

Federal Wild & Scenic River

The packet for Boundary TAC Meeting 3 included background information and maps to address the designated Federal Wild & Scenic River (Upper Deschutes) and Oregon Scenic Waterways (Upper Deschutes & Upper Middle Deschutes) within the study area.[1] The Federal and State designations overlap for a portion of the Upper Deschutes south of the Bend UGB. The memo also identified a 100-foot buffer from the Upper Deschutes River as unbuildable under the Federal and State provisions for the scenic waterway. Additionally, the memo noted that the 100-foot buffer also applies under Deschutes County regulations for riparian areas.

A question was asked at the TAC meeting about whether the setbacks for the Upper Deschutes were the same under the Federal and State scenic waterway regulations. APG staff reviewed the *Comprehensive Management Plan for the Upper Deschutes* and talked with planning staff with the Oregon Scenic Waterways program and Deschutes County. We confirmed that the Federal Wild & Scenic River designation for the segment of the Upper Deschutes River south of Bend does not apply specific setback provisions; but instead references and relies on the notice, coordination and setback provisions implemented by the Oregon Scenic Waterway rules and Deschutes County Code standards. Exhibit A includes a map that shows the Upper Deschutes State & Federal Scenic Overlays south of the Bend UGB.

Request for TAC Action:

- None, information only

[1] See Boundary TAC 3 packet dated October 7, 2014 for memo and maps for Unbuildable Lands.

FRAMING AND EVALUATING UGB SCENARIOS

Background

The initial scope for Phase 1 assumed the Boundary TAC would meet four times to develop the methodology for the evaluation of boundary scenarios using the Envision Tomorrow tool in Phase 2. It was expected that the Boundary TAC would incrementally develop evaluation criteria and performance measures for each of the four factors of Goal 14 over a series of three meetings. At Meeting 2, the TAC reviewed and provided preliminary support for proposed scenario evaluation criteria for Factor 1(Efficiency).[2] However, because the four factors are interrelated, the TAC expressed the desire to consider and refine the evaluation criteria for all four factors at the end of Phase 1 for a "big picture" understanding.

Following TAC Meeting 2, the project team revisited the schedule and agendas for the remaining TAC meetings. This was done in consultation with the USC Chair and leadership of the TACs. Based on this evaluation, the team prepared an update to the Phase 1 work plan. The objectives of the update were to:

- Facilitate a greater integration of work across all three TACs
- Place a greater emphasis on consideration of Bend's urban form inside and outside of the UGB
- Provide a little more time for work between the TAC meetings
- Add two meetings for each TAC in Phase 1
- Introduce a December workshop for the Residential/Employment TACs to refine alternative scenarios for the existing UGB and test different redevelopment and efficiency measures using the Envision modeling tool
- Retain the goal of finishing Phase 1 in February, 2015

Phase 2 Milestones Chart

The original work plan for the project called for the completion of Phase 1, followed by scoping of Phase 2 work. This is still the case, but the team has prepared an initial chart of Phase 2 milestones to help inform Phase 1, and, help everyone understand where their work is headed. The Boundary TAC reviewed the Phase 2 Milestones Chart at Meeting 3. The Boundary TAC also moved through an ambitious agenda at Meeting 3 and provided recommendations on:

- Unbuildable Lands
- Step 2 Screening
- Approach to Goal 5
- Approach to Goal 7

[2] See Boundary TAC 2 packet and memo dated August 19, 2014 with proposed scenario evaluation criteria for Factors 1 & 4. The criteria for Factor 1 were approved, on a preliminary basis, by the UGB Steering Committee on September 4, 2014.

Refinements to Phase 2 Milestones and Methodology for Clarity and Simplicity

The project team has continued to talk and think about the Phase 2 Milestones and how to prepare for formation of scenarios early in Phase 2. Additionally, staff met with the leadership of the Boundary TAC to discuss the agenda for TAC Meeting 4. The leadership emphasized that there needs to be greater clarity regarding the Phase 2 process generally, and specifically how and when the Goal 14 factors will be considered. Additionally, it was recommended that we consider all four factors together, rather than addressing them on an incremental basis.

The project team agrees with the need for clarity and simplification and revisited the agenda and materials for Meeting 4 for this purpose.

Refinement of Phase 2 Milestones Chart

A minor refinement to the Phase 2 Milestones chart that the TAC reviewed at the last meeting is attached as Exhibit B.

In addition to understanding and approving the Phase 2 Milestones chart as a whole, the purpose of this meeting is to discuss and confirm how we will consider and apply the Goal 14 factors at two important stages shown in the diagram for Phase 2 Milestones:

- Stage 2 Base Mapping – Analyzing the study area to identify ideal lands for specific UGB expansion scenarios
- Stage 4 Scenario Evaluation – Analyzing the specific UGB expansion scenarios

Ultimately, we are trying to achieve the same objectives in both stages of the analysis: an efficient urban form that is cost-effective to serve, avoids hazard areas, protects natural resources and is compatible with activities on forest and high-value agricultural lands outside the UGB. The common thread through all of Phase 2 is creating an approvable UGB that meets community goals.

Base Mapping Stage

In the Base Mapping stage, the project team proposes to use a few key indicators of the Goal 14 factors to help identify the best land to include in boundary scenarios. We are starting with a study area that includes more than 18,000 acres of priority exception lands, substantially more land than will be needed. The team will use GIS to prepare maps to illustrate the relative ranking of parcels based on the key indicators associated with each of the four factors of Goal 14. This stage of analysis will help to narrow the scope of the study area to focus on the areas that rank higher and inform the development of better scenarios.

Table 1 includes key indicators proposed for the Base Mapping stage for each of the Goal 14 factors. Ideally, these key indicators reflect what the Boundary TAC believes is important information to consider to identify lands that should be included in a UGB expansion scenario, vs. lands which are not ideal. We would like to focus on discussion of these indicators at TAC Meeting 4. The project team hopes to use Table 1 as a starting point to hone and refine how to measure and rank the parcels or study areas based on the indicators. A GIS map is attached to

this memo (see Exhibit C) to help the TAC visualize one of the proposed indicators for Factor 1 (parcel size). The project team will bring additional GIS maps to illustrate other indicators for the Goal 14 factors to the remaining meetings of the Boundary TAC. By looking at maps with the TAC, we can make an effort to refine and ground truth the proposed indicators as we go. All of this is intended to help create a clear and Remand-compliant methodology, and to get ready for Phase 2. The analysis will ultimately include multiple maps and analyses that the TAC can use and balance in order to create UGB expansion scenarios for further analysis. It will also help the project team characterize areas based on similar traits in order to explain why different sub-areas with the study area were not selected for further consideration in a UGB expansion scenario.

Table 1 also includes preliminary performance measures for the Scenario Evaluation Stage. This is included so the TAC can see the Stages 2 and 4 together, and understand how Goal 14 is applied at each Stage.

Scenario Evaluation Stage

In the Scenario Evaluation stage, we will use more robust and comprehensive models to evaluate alternative scenarios. This will include the Envision Tomorrow tool, sewer & water optimization and transportation modeling. The scope of the analysis and evaluation at this stage will consider land inside the existing UGB in addition to expansion areas. The Scenario Evaluation stage will also consider the linkage between land uses and transportation that can only be evaluated at the scenario level such as jobs/housing balance and vehicle miles traveled per capita. Similarly, Goal 5 resources can be identified, inventoried, and the level of significance and any protection programs described.

Table 1 also includes performance measures that could be used in the Scenario Evaluation stage to consider the four factors of Goal 14.[3] Hopefully, this information is helpful in showing that the Goal 14 factors are consistent and integral to both the Base Mapping and Scenario Evaluation stages. In the case of all indicators, the table identifies initial team recommendations subject to TAC discussion, refinement, and approval, as well as input from the modeling teams.

The project team recommends the Boundary TAC focus first on agreeing on the criteria to be used in a general sense, before focusing on exactly how to measure the criteria. Once the TAC develops overall agreement about **what** is important to consider, the team and TAC can then focus on **how** to measure the particular criteria. Also worth noting is the opportunity for "analysis paralysis," and for the Boundary TAC to help the project team strike the ideal balance between providing sufficient analysis while also staying on budget and schedule.

[3] The packet for Boundary TAC meeting 2 included proposed scenario evaluation criteria and measures for Factors 1 and 4. See memo dated August 19, 2014.

Table 1. Goal 14 Factors

Stage 2 – Base Mapping (using GIS)	Stage 4 – Scenario Evaluation (using Envision)
Factor 1: Efficient accommodation of identified land needs.	
Purpose: Prioritize exception lands within Study Area (more than 18,000 acres) based on proposed key indicators of land use efficiency: • Parcel size & value of existing improvements • Proximity to existing UGB – adjacency more efficient that edge of study area • Topography (Note: we currently only have GIS layer for 25% slopes or greater)	Purpose: Evaluate alternative scenarios based on proposed performance measures for land use efficiency: • Urbanized acres • New housing units built inside vs. outside existing UGB in 2028 (# and %) • New jobs located inside vs. outside existing UGB in 2028 (# and %) • Estimated average density for housing and jobs in 2028 (units/acre and jobs/acre) • Percent of new growth accommodated through infill/redevelopment
Factor 2: Orderly and economic provision of public facilities and services.	
Purpose: Prioritize exception lands within study area based on proposed key indicators for orderly and economic provision of public facilities and services: • Ability to serve via gravity sewer • Ability to serve within identified water pressure zones • Ability to serve with water or sewer without major infrastructure upgrades • Proximity to existing or planned parks, trails, elementary schools	Purpose: Evaluate alternative scenarios based on proposed performance measures for orderly and economic provision of public facilities and services: • Acres served by gravity sewer • Estimated cost of sewer improvements (based on Optimization); including cost per acre • Additional water storage facilities required (number) • Estimated cost of water improvements (based on Optimization); including cost per acre • VMT/capita and mode split in 2028 • Estimated cost of transportation improvements (based on traffic model); including cost per acre • Housing units and jobs within walking distance of transit in 2028 (# and % of total housing units and jobs) • Average housing and employment density within walking distance of transit in 2028 (housing units and jobs per acre) • Housing units within walking distance of existing/planned elementary schools, parks and trails in 2028 (# and % of total units)

Stage 2 – Base Mapping (using GIS)	Stage 4 – Scenario Evaluation (using Envision)
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE).	
Purpose: Prioritize exception lands within Study area based on proposed key indicators for ESEE consequences: • Proximity to significant Goal 5 resources • Relative wildfire risk	Purpose: Evaluate alternative scenarios based on proposed performance measures for ESEE consequences: • Development (acres) in proximity to significant Goal 5 resources • Development (# and % of housing units and jobs) in Goal 7 hazard prone areas • Housing mix & affordability by income level • Jobs housing balance (by TAZ or quadrant) • Greenhouse gas emissions • Total impervious surface area • % of job growth in downtown Bend
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.	
Purpose: Prioritize exception lands within study area based on proposed key indicators for compatibility: • Proximity to designated forest land • Proximity to designated high-value agricultural land .	Purpose: Evaluate alternative scenarios based on proposed performance measures for compatibility with resource lands: • Perimeter of proposed UGB abutting designated forest land (lineal feet/miles) relative to existing UGB • Perimeter of proposed UGB abutting designated high-value agricultural land (lineal feet/miles) relative to existing UGB • Designated forest land included, if any (acres) • Designated agricultural land included, if any (acres)

Key Differences from Methodology Used in 2008

1. The City used parcel-based GIS analysis and mapping in 2008. No scenario planning tools were used. The GIS mapping focused almost exclusively on the proposed UGB expansion areas. The proposed approach is looking at the existing UGB and proposed expansion areas in a more comprehensive and integrated way relative to the 2008 approach. This includes a more robust evaluation of reasonable efficiency measures for lands in the existing UGB.

2. The parcel-level GIS analysis used in 2008 became very complex and unwieldy. The points and composite scores assigned to individual parcels became the focus of controversy. It was also very challenging for staff to roll up the extensive GIS data and maps into Goal 14 findings. The Boundary TAC may want to consider a different approach which allows each Goal 14 factor to have its own analytical result (even different units of analysis such as objective criteria vs. subjective criteria), and to allow the Boundary TAC to balance these different factors using its judgment, rather than forcing all analysis into a more rigid "good" "fair" "poor" or numerical value approach.

3. The proposed approach will take a more targeted approach to the parcel-level GIS analysis in the Base Mapping stage. The project team is proposing to help the Boundary TAC create a limited set of "key indicators" to prioritize which of the exception lands should be considered for inclusion in Phase 2 scenarios. Through the use of the indicators, the Base Mapping stage will narrow the field for the purpose of drawing scenarios that are Goal 14 compliant. The project team will explore approaches to prepare a separate GIS map for each of the four Goal 14 factors and composite maps to illustrate overlaps and the overall "best" areas to consider.

4. The proposed approach will make efficient uses of the project schedule and budget. With more than 18,000 acres included in the study area, the project team will not spend much effort gathering detailed data on parcels that rank low on several indicators and are unlikely to be included in any scenario.

5. After the initial prioritizing, the evaluation of Goal 14 factors will shift to the scenario level. By front-loading the initial prioritizing of exception lands based on fewer key indicators, it is expected that the project team will be able to move to scenario development early in Phase 2.

6. Similar to the 2008 effort, the output from the Envision model is not expected to provide a clear answer on the "best" scenario. One scenario may perform better on efficiency indicators, but worse on compatibility indicators. Some issues such as relative fire risk may not be easily captured with measurable indicators and may require a qualitative evaluation. The project team, the TAC and decision-makers will still need to efficiently organize and analyze the model output to compare the scenarios and support legally-defensible findings. Ultimately, the Boundary TAC will need to balance and weigh the information according to law and rule in order to forward a recommendation to the UGB Steering Committee, which will select the preferred scenario to advance towards adoption.

Discussion Questions and Request for TAC Action:

- Is the approach clear and easy to understand – or at least as clear as possible when working under a Remand and complex rules?
- Does Table 1 capture key indicators to consider in the Base Mapping Stage for each of the Goal 14 factors? Note: after agreeing on key indicators, the team and TAC can move to agreeing on how to measure these indicators.

Factor 1: Efficiency

Factor 2: Orderly & economic public facilities

Factor 3: ESEE consequences

Factor 4: Compatibility

- Does the TAC approve the Phase 2 Milestones chart and Base Mapping Stage indicators in Table 1 as the basis for continued development of methodology for Phase 2?

The above questions are a framework for discussing proposed indicators for Goal 14 factors in the Base Mapping stage at Meeting 4. By including draft indicators for all four factors and the Base Mapping and Scenario Evaluation stages in a single table – the project team hopes the TAC has a more complete picture and understanding of the overall approach and methodology.

In the following section, a map (see Exhibit C) and summary data are provided to illustrate how we could apply one indicator for Factor 1 in the Base Mapping stage. Additional mapping will be prepared for the subsequent TAC meetings to help inform discussion of the ranking of parcels/study areas (such as Good/Fair/Poor) prior to the formation of scenarios in Phase 2. The map shows only one indicator of one factor, and ultimately the information will have to be integrated with other information when making the final boundary decision.

INDICATORS FOR FACTOR 1 - EFFICIENCY

Proposed Indicators for Factor 1 at Base Mapping Stage

As shown in Table 1, the project team has identified three key indicators of land use efficiency that could be used to prioritize exception lands within the study area (more than 18,000 acres):

- Parcel size & value of existing improvements
- Proximity to existing UGB
- Topography

The map in Exhibit D illustrates parcel sizes in the study area based on six categories shown in the legend (ranging from <2 acres to >50 acres).

A few highlights of the GIS data relating to the smallest and largest parcels in the study area are provided below:

- The study area includes more than 2,000 parcels smaller than 2 acres that have at least one home, with a mean parcel size of 0.9 acre.
- The study area includes 24 parcels that are 50 acres and larger, with about 2,300 acres categorized as vacant.

General concept and rationale for ranking based on parcel size:

1. Larger parcels with fewer improvements should rank “good” because:

- They provide the capacity to accommodate more land needs with a smaller amount of UGB expansion (acres).
- They provide opportunities for development of complete neighborhoods because a single larger parcel would be master planned vs. requiring master planning from a larger number of owners of smaller parcels.
- They are more efficient to develop and serve with infrastructure with fewer owners and larger contiguous blocks of land.

2. Smaller parcels with high value improvements should rank “poor” because:

- They are unlikely to accommodate much new development capacity because of existing development patterns. Including blocks of smaller parcels would result in a larger UGB expansion (acres) without providing much capacity or benefit to the city.
- They are less efficient to develop and serve with infrastructure because of rural residential development patterns and multiple owners.

In looking at Figure 1, the TAC could consider ranking larger parcels (such as 50 acres and larger) with fewer or no improvements as “good” for this indicator. Smaller parcels (such as those smaller than 2 acres) with numerous dwellings could be ranked “poor” for this indicator. Parcels in the mid-range (such as 5 acres and above) with fewer or no improvements could be ranked “fair” for this indicator. This is just presented as an example.

When we prepare base maps for the other two proposed indicators relating to proximity to UGB and topography – it is expected that a composite map would highlight the parcels/subareas that rank highest for Factor 1 indicators.

Request for TAC Action:

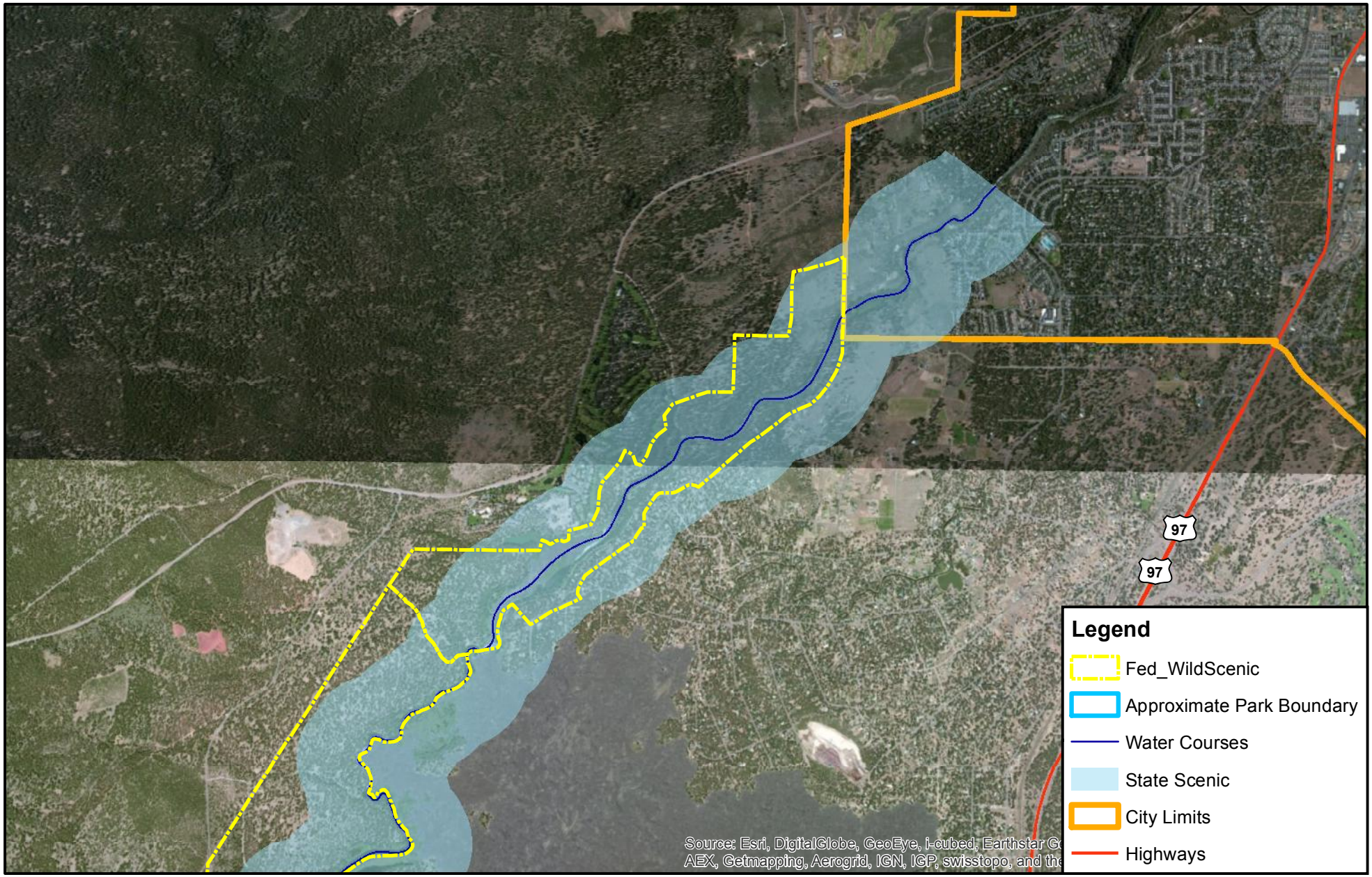
- Does the TAC generally support this proposed approach to ranking parcels in the study area based on the key indicators?
- For meeting 5, the project team will propose measures or categories for ranking parcels for each indicator that can be refined prior to the final roll-up at meeting 6. Does the TAC support this approach?

EXHIBIT A

Upper Deschutes
State and Federal Scenic Overlay

Upper Deschutes State & Federal Scenic Overlays

Oregon Parks & Recreation Dept.
725 Summer St. NE, Suite C
Salem OR, 97301



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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NAD 1983 2011 Oregon Statewide Lambert Ft Intl

REG3-3938 never
E:10/23/2014
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EXHIBIT B

Phase 2 Milestones

Phase 2 Milestones

Draft October 8, 2014 - rev. November 11, 2014

Preliminary and Subject to Change

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER

Phase 1 Recommendations[1]
- Land needs
- Efficiency Measures Assumptions
- Boundary Methodology
- Study Area

Stage 1

Screening[2]
- Exclude lands for further analysis (e.g. unbuildable lands)

Stage 2

Base Mapping
- Map indicators of Goal 14 factors 1-4
- Goal 5 inventory

Stage 3

Scenario Development[3]

Iterative steps:
- Prepare sketch level scenarios and test with Envision
- Refine
- Scenarios

Stage 4

Scenario Evaluation[4]

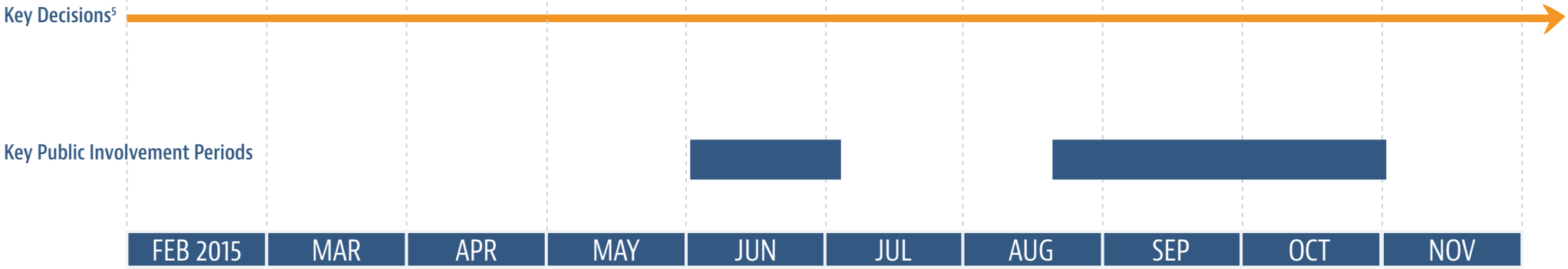
Conduct:
- Envision Testing
- Goal 14 Evaluation
- Water/Sewer Optimization
- Transportation Modeling
- Team review of results
- Goal 5 ESEE analysis

Stage 5

Preferred Scenario[4]
- Prepare evaluation conclusions
- Prepare proposed boundary, land uses, and urban form
- Draft policies, map designations, and findings

Approval of UGB Expansion Scenarios for Evaluation

Approval of Preferred Scenario



Notes:

1-4: Steps per City Attorney Memorandum, Aug 19 2014: 1 = Step 1; 2 = Step 2; 3 = Step 3A Preparation; 4 = Step 3A (3B if necessary)

5: Meeting schedule TBD, including TAC participation in meetings and workshops

EXHIBIT C

Priority 2 Exception Land

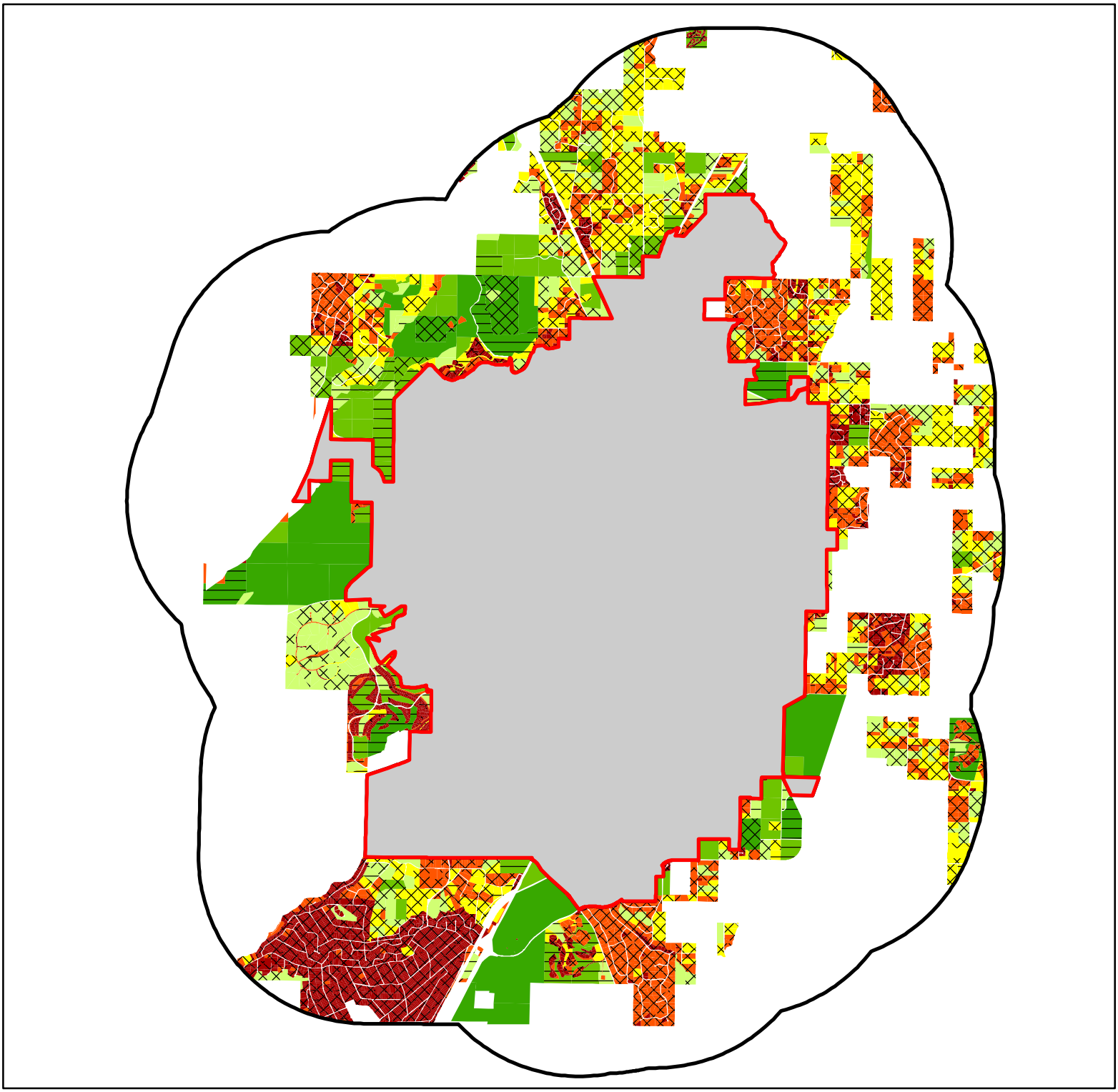
Parcel Size & Improvements

Priority 2 Exception Land Parcel Size and Improvements

Parcel Size (ac)
- <2
- 2-5
- 5-10
- 10-20
- 20-50
- 50+

Existing Land Use
- Vacant
- At least one dwelling
- Other Improvements

- Urban Growth Boundary
- 2 Miles from UGB



URBAN GROWTH BOUNDARY REMAND

BEND

Prepared 11/10/2014

0 0.5 1 2 Miles

NORTH

City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting Notes
Date: November 18, 2014

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday November 18, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 10:04 am by Sharon Smith.

Roll Call

- ☐ Toby Bayard
- ☐ Susan Brody
- ☐ Paul Dewey
- ☐ Robin Vora
- ☐ Dale Van Valkenburg
- ☐ Bruce White
- ☐ Ellen Grover
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ Ruth Williamson
- ☐ Rockland Dunn
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Scott Edelman
- ☐ Jim Bryant
- ☐ Nick Lelack

Discussion

Joe walked the TAC through the agenda at the beginning of the meeting.

TAC reports.

- Dale reported on the Residential TAC meeting from 11/17/14.
- Brian Meese reported on the Employment TAC meeting from 11/18/2014.

Follow up from TAC 3 (See Page 3 of packet).

- Wild and scenic designations. Federal Wild and Scenic designation does not have development standards. The designation relies upon development standards for the Oregon Scenic Water and related standards in the Deschutes County Zoning Ordinance.
- No TAC opposition to team recommendation.

Phase 2 framing and approach (See Page 4 of packet).

- The new chart includes Stage 2 – Base Mapping: map indicators for Goal 14 factors 1 through 4 and Goal 5 inventory.
- State 4 – Scenario Evaluation will include: scenarios testing using the Envision Tomorrow tool; Goal 14 evaluation; water and sewer optimization; transportation modeling; team review of results, and; Goal 5 ESEE analysis.
- The TAC discussion on this topic included how this process will be different from the one used in 2008, the participation of TAC members in Phase 2, the level of analysis (parcel – based); public involvement, and the timing of Goal 5 inventory work.

Approach to Ranking during Base Mapping (See Page 5 of packet). The TAC discussion transitioned to this item, which focused on how to address the four location factors under Statewide Planning Goal 14 (Urbanization) in both the Base Mapping (Stage 2) and Scenario Evaluation (Stage 4). Joe directed the TAC to Table 1 in the meeting packet.

- Factor 1 (Efficient accommodation of land needs) focused on three proposed indicators for Stage 2 Base Mapping.
- TAC also reviewed the four proposed indicators under Factor 2 (Orderly and economic provision of public facilities and services). The TAC closed on the Factors 2 analysis at Stage 2

with criteria on system impacts, physical barriers, substandard roads, and system connectivity (for multi-modal transportation). For stormwater – TAC closed on proximity to drinking water, geology, injection wells, and water quality.

- Factor 3 (Comparative environmental, social, economic, and energy consequences (ESEE)). The discussion of potential Factor 3 criteria at Stage 2 included impacts to existing neighborhoods, proximity to Goal 5 resources, impacts to neighborhoods outside the UGB, solar energy, possible use of the Greenprint Plan as a resource for this analysis, the expansion of relative wildfire risk to all hazards, and consideration of irrigation facilities.
- State 2 criteria for Factor 4 (Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB) included looking at parcels with irrigation, adding efficiency to consideration of irrigation district water, mapping presence of high-value farmland, prescribed burning, measuring proximity between the proposed UGB and farm and forest activities occurring on nearby farm and forest lands.

The approach to ranking was deferred to the next Boundary TAC meeting.

No public comment.

Meeting adjourned at 12:30 pm by Joe Dills.

8744d-00
70-

89-00944

SCENIC EASEMENT

177 - 0761

WHEREAS, BROOKS RESOURCES CORPORATION, hereinafter called "Brooks", is in the process of developing luxury condominiums on the real property described on Exhibit "A" attached hereto, and

WHEREAS, CENTRAL OREGON IRRIGATION DISTRICT, hereinafter called "District" is in the process of obtaining governmental licenses and permits for a hydroelectric development on the real property described on Exhibit "B" attached hereto, and

WHEREAS, the property described on Exhibit "B" is presently zoned SR-20 and RS, and

WHEREAS, all presently permitted and conditional uses for real property located in Deschutes County zoned SR-20 and RS are set forth on Exhibit "C" attached hereto, and

WHEREAS, Brooks is desirous of obtaining a scenic easement to insure that property uses made of the real property described on Exhibit "B" are compatible with its luxury condominium development,

NOW, THEREFORE, in consideration of the payment of $10.00 and other valuable consideration, the parties agree as follows:

1. GRANT OF EASEMENT: District hereby conveys to Brooks a scenic easement over and across the real property described on Exhibit "B" on the following terms and conditions:

(a) Other than as required or directed by applicable licensing authorities or irrigation uses, District will not utilize the property described on Exhibit "B" for any of

GRAY, FANCHER, HOLMES & HURLEY
ATTORNEYS AT LAW
40 N.W. GREENWOOD
P.O. BOX 1151
BEND, OREGON 97709-1151

Bend Title Company
02854

the permitted or conditional uses as outlined on Exhibit "C".

(b) District will not attempt to obtain a zone change on the property described on Exhibit "B" without the written consent of Brooks. In the event public authorities change the zoning on the property described on Exhibit "B", District will not use the property, other than as required or directed by applicable licensing or irrigation uses.

(c) Except as required by applicable licensing authorities and for irrigation uses, District will maintain the surface of the property described on Exhibit "B" in its present configuration and appearance so as not to cause an unreasonable visual impact to the real property described on Exhibit "A".

2. TERM OF EASEMENT: The easement herein granted shall expire on April 1, 2019, unless grantor at that time is still generating power from its hydroelectric project, in which case the easement will not expire until grantor is no longer generating power from said project or April 1, 2034, whichever occurs first. Prior to said date, the covenants contained in this easement shall run with the land and shall be binding upon and inure to the benefit of the parties and their successors and assigns.

3. RIGHT TO ENFORCE: Grantee, its agents and employees, shall have the right to enter upon the real property described in Exhibit "A" for the sole purpose of enforcing the terms and conditions of this easement, together with the right to remove from the land any improvement, structure, or other offending article from said real property, provided, however,

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ATTORNEYS AT LAW
40 N.W. GREENWOOD
P.O. BOX 1151

that Grantee shall be required to utilize existing roads or other normally traveled routes in exercising this right and, provided, further, that this right of enforcement shall not extend to any improvement or structure placed on the property by Central Oregon Irrigation District, and provided, further, that Grantee agrees to indemnify, defend, and hold harmless Grantor from any loss, claim, or liability to Grantor accruing in any manner out of Grantee's exercise of this enforcement right.

DATED This 3rd day of April, 1984.

CENTRAL OREGON IRRIGATION DISTRICT

By _____
Chairman of the Board

By _____
Secretary-Manager

BROOKS RESOURCES CORPORATION

By _____

STATE OF OREGON, County of Deschutes: ss.

The foregoing instrument was acknowledged before me this 3rd day of April, 1984, by Hal Meyers, Chairman of the Board and Ron Nelson, Secretary-Manager of CENTRAL OREGON IRRIGATION DISTRICT, on behalf of the District.

JENNIFER M. SIMPSON
NOTARY PUBLIC - OREGON
My Commission Expires: 7/24/86

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires: _____

STATE OF OREGON, County of Deschutes: ss.

The foregoing instrument was acknowledged before me this 3rd day of April, 1984, by Michael P. Hollern, President of BROOKS RESOURCES CORPORATION, on behalf of the corporation.

PAUL H. BUCHANAN
NOTARY PUBLIC
STATE OF OREGON

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires: Jan. 22, 1987

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ATTORNEYS AT LAW
40 N.W. GREENWOOD
P.O. BOX 1151

MT BACHELOR VILLAGE, a planned unit development, located within the City of Bend, Deschutes County, Oregon.

EXHIBIT "A"

PARCEL 1: Those portions of the South half of the Northeast quarter, Southeast quarter of the Northwest quarter, North half of the Northwest quarter of the Southeast quarter, North half of the Northeast quarter of the Southwest quarter, and Southwest quarter of the Northeast quarter of the Southwest quarter of Section 7, Township 18 South, Range 12 East of the Willamette Meridian, Deschutes County, Oregon, lying Southeasterly of the centerline of the Deschutes River. Except that portion described in the deed recorded March 29, 1976 in Book 229 Page 677 Deed Records.

PARCEL 2: A parcel of land located in the Southwest one-quarter of Section 7, Township 18 South, Range 12 East, Willamette Meridian, Deschutes County, Oregon, being more particularly described as follows:

Beginning at the Northwest corner of the Southeast one-quarter of the Northeast one-quarter of the Southwest one-quarter (SE¼, NE¼, SW¼) of said Section 7; thence along the North line of said Southeast one-quarter, Northeast one-quarter, Southwest one-quarter South 89° 55' 37" East 677.85 feet to the Northeast corner of said Southeast one-quarter, Northeast one-quarter, Southwest one-quarter, which is located on the Southeasterly rim of the Deschutes River Canyon; thence along said Southeasterly rim South 68° 29' 55" West 144.77 feet; and south 51° 57' 55" West 121.77 feet; and South 45° 41' 00" West 136.99 feet; and South 22° 42' 27" West 235.95 feet; and South 5° 15' 06" West 89.05 feet; and South 64° 09' 57" West 82.48 feet; and South 15° 53' 14" West 155.54 feet; and South 48° 11' 43" West 172.49 feet to the West line of the Northeast one-quarter of the Southeast one-quarter of the Southwest one-quarter (NE¼, SE¼, SW¼) of the aforementioned Section 7; thence leaving the Southerly rim of the Deschutes River Canyon and following the West line of said Northeast one-quarter, Southeast one-quarter, Southwest one-quarter and the West line of the aforementioned Southeast one-quarter, Northeast one-quarter, Southwest one-quarter North 0° 12' 09" West 829.81 feet to the point of beginning.

Parcel 3: A tract of land in the NE¼, SE¼ of Section 7, Township 18 South, Range 12 East of the Willamette Meridian, Deschutes County, Oregon, described as follows:

Beginning at the E¼ corner of said Section 7; thence North 89° 52' 20" West 695.25 feet along the E-W centerline to the true point of beginning; thence along the top of rim South 71° 11' 31" West 20.45 feet; thence continuing along the top of rim South 57° 47' 33" West 130.30 feet; thence continuing along the top of rim South 59° 31' 01" West 146.50 feet; thence continuing along the top of the rim South 59° 04' 08" West 218.75 feet; thence continuing along the top of the rim South 74° 27' 58" West 202.32 feet to the N-S centerline of SE¼ of Section 7; thence along said N-S centerline North 00° 00' 12" West 318.40 feet to said E-W centerline; thence South 89° 52' 20" East 638.44 feet along said E-W centerline to the point of beginning. Containing 2.63 acres more or less, all being in Deschutes County, Oregon.

EXHIBIT "B"

PARCEL 4: A portion of the Southwest Quarter of Section Seven (7), Township Eighteen (18) South, Range Twelve (12) East of the Willamette Meridian, Deschutes County, Oregon, described as follows:

Commencing at the Southwest Corner of Parcel 12 as shown on the Survey for Waywest Properties by Emile P. Bachand in May, 1968; thence along the South line of Section 7, T. 18S, R. 12 EWM, South 89° 39' West, 1,352.49 feet; thence, leaving said South line North 0° 07' East, 330 feet, more or less, to a point on the Canyon Rim, the point of beginning of this parcel, thence, from said point of beginning, along said Rim the following courses: North 57° 56' 10" East, 51 feet; thence North 70° 11" 50" East, 26 feet; thence North 44° 07' 40" East, 92 feet; thence North 33° 24' 40" East 52 feet; thence North 27° 51' 30" East, 67 feet; thence North 59° 56' 20" East, 77 feet; thence North 43° 28' 20" East, 62 feet; thence North 40° 42' 00" East, 33 feet, more or less, to a point on the South line of the Northeast portion of Parcel 16; thence, along said boundary of said Parcel 16 South 89° 44' 00" West, 320 feet; thence South 00° 07' 00" West, 335 feet, more or less, to the point of beginning.

PARCEL 5: That portion of Tract Sixteen (16) of WAYWEST PROPERTIES, located within a part of Section Eighteen (18), Township Eighteen (18) South, Range Twelve (12) East of the Willamette Meridian, and a portion of the Southeast Quarter of the Southwest quarter (SE¼,SW¼) of Section Seven (7), Township Eighteen (18) South, Range Twelve (12) East of the Willamette Meridian, Deschutes County, Oregon, described as follows:

Beginning at the Section Corner common to Sections 12 and 13, Township 18 South, Range 11, EWM, and Section 7 and 18, Township 18 South, Range 12, EWM, thence following the survey for WAYWEST PROPERTIES by Emile P. Bachand in May of 1968, the following courses: South 00° 28' 00" West 430.67 feet to a point on the Centerline of Pine Drive; thence along said Centerline North 60° 30' 00" East 487.42 feet; thence, North 80° 03' 00" East 493.77 feet; thence, North 63° 27' 00" East 497.33 feet to a point on the Southeasterly line of Tract No. 16; thence, leaving Pine Drive and long said Southeasterly portion of Tract No. 16 North 00° 17' 00" East 557.53 feet;thence, North 89° 44' 00" East 320.00 feet, more or less, to a point on top of the Deschutes River Rim; thence, leaving the boundary of said Tract No. 16 and following the top of said Deschutes River Rim on the following courses; North 42° 42' 00" East 40.00 feet, more or less; thence, North 26° 21' 50" East 47.00 feet; thence North 08° 27' 00" East 36.00 feet; thence, North 11° 26' 10" East 55.00 feet; thence, North 01° 45' 20" West 69.00 feet; thence, North 02° 50' 30" East 84.00 feet; thence, North 14° 21' 00" West 56.00 feet; thence North 57° 37' 10" East 37.00 feet; thence, North 67° 36' 00" East 75.00 feet; thence, North 80° 33' 10" East 70.00 feet; thence North 56° 36' 10" East 138.00 feet; thence North 59° 28' 50" East 50.00 feet, more or less, to a point on the most easterly line of said Tract 16; thence, continuing around the boundary of said Tract 16 on the following courses;

thence, North 00° 07' 00" West 130.00 feet, more or less, to the Northeast Corner of said Tract 16; thence, South 89° 50' 00" West 450.00 feet to the Deschutes River; thence, along the Deschutes River South 10° 30' 00" West 416.09 feet; thence, South 37° 15' 00" West 298.00 feet; thence, South 54° 53' 00" West 280.00 feet; thence South 68° 47' 00" West 240.00 feet; thence South 72° 33' 00" West 287.00 feet; thence, South 67° 16' 00" West 640.00 feet to a point on the West Line of said Section 7, Township 18 S., Range 12 East of the Willamette Meridian; thence South 00° 35' 00" West 110.00 feet to the point of beginning. Containing 21.00 acres, more or less, and including a thirty (30.00) foot road easement along Pine Drive Except that portion described in the deed recorded June 11, 1982 in Book 358 Page 235 Deed Records.

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: Boundary & Growth Scenarios TAC #4
Date: November 18, 2014
Location: Bend City Hall Council chambers

Name	Organization	Email Address
Dale VanValkenburg	Brooks	
Scott & Carol Jackson	property owner	jackson4@coventry cablevision.net
Sid Snyder		on file
Rockman Dunn	Planning Commission	
Ron Ross		~~[illegible]~~ on file
Robin Vora		robinvoral@gmail.com
Mykel Conway		MCONWAY@martenlaw.com
Rod Tomchuk	Planning Div.	
Jim Bryant	ODOT	

EDITORIALS

The Bulletin
AN INDEPENDENT NEWSPAPER

BETSY MCCOOL, Chairwoman
GORDON BLACK, Publisher
JOHN COSTA, Editor-in-Chief
RICHARD COE, Editor of Editorials

Profitability of 'affordable housing' keeps supply low

November 19, 2014

By Don Senecal

The statement has been made that multiple units and attached units are not feasible or practicable because "the market does not dictate a demand" and that single-family dwellings are the overabiding strength of the housing market in Bend and Central Oregon. Therefore, focus must be kept on the building of these units and keeping related zoning, codes, charges, etc. curtailed to the fullest possible extent in order to facilitate development.

The homeless population of Central Oregon and Bend in particular has grown steadily over the course of the last several years. That population is the highest since 2006 at more than 2,000 men, women and children who are homeless in our area. The actual count is closer to 4,000 to 5,000 taking into consideration that the count is taken in January when weather, transportation and other factors deter people from traveling to a facility to be counted. This count does not take into consideration those working poor who have a place to live, but are financially challenged to pay the rents demanded by the current market.

NeighborImpact is housing 120 families. Bethlehem Inn is sheltering 53. Shepherd's House has 35. Grandma's House has 20. Nancy's House has 14. Safe Homes has 12. Central Oregon Veteran's Outreaches Home of the Brave houses 6 veterans in transitional housing. Habitat for Humanity has five homes scheduled for construction in 2014 and has erected a total of 102 homes to date. All these agencies have waiting lists.

Housing Works has created 650 housing opportunities. They have distributed more than 2,000 housing vouchers and have a waiting list of more than 100. NeighborImpact has no rental assistance money left at this time. Senior Citizens and young families who have traditionally rented houses are facing loss of their homes because of increased rents and the fact that owners are putting those houses on the market for sale. Less than 1 percent of the rental inventory in Central Oregon is available, and the prices being asked place nearly all of those homes out of the reach of the working poor. These families are being forced to choose between having a roof over their heads or cutting back on food, clothing and other essential items.

IN MY VIEW

During the time leading to the bust of 2007-08, developers did not have the time of day to discuss affordable housing with agencies such as Housing Works or NeigbhorImpact. However, once the bottom began to fall out of the market, they were suddenly more than interested in entering into contracts using any funding available. Today the same story is repeating itself. The market seems to be healthy, ergo why should developers be concerned about affordability?

The increase in baby boomers who have retired or wish to retire to Central Oregon is clearly evident and the demand for facilities to house and accommodate their unique needs create a market of opportunity. There are currently six retirement facilities/communities in Bend, all at capacity and all with waiting lists. There are 424 units in Bend specifically offered to retired individuals and couples. All the communities have waiting lists. This does not include special-needs facilities such as assisted living.

The current housing and rental markets are quickly squeezing out those who are on fixed incomes or earn minimum wages.

Does this create a demand? Does this create an opportunity for affordable housing units? The argument is clearly not whether there is an existing and sustainable demand for affordable housing, but that the profitability of such projects do not compare favorably to single family units marketed at $300,000 to $500,000 and more. The question is clearly about the percentage of profit for each kind of facility, not meeting the needs of the community.

Less than 1 percent of the rental inventory in Central Oregon is available, and the prices being asked place nearly all of those homes out of the reach of the working poor.

—Don Senecal is a former member of the Bend Planning Commission and member of the UGB Technical Advisory Committee (housing).

02862

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: UGB Joint TAC/USC Workshop

Date: 12/16/14

Location:

Name	Organization	Email Address
Kimberly Barragan	Alzheimer's Association	kimbarragan@gmail.com
Lynne McConnell	NeighborImpact	lynnem@neighborimpact.org
Kurt Petrich	KAFP	Kapetrich@gmail.com
Wallace Coswin	BEDAB	wallyc@bend-cable.com
Scott Edelman	DLCD	scott.edelman@state.or.us
Kat Langenderfer	HHPR	KatLangenderfer@gmail.com
Brian Fratzke	COAR/CTIC-BAC	
Bill Robie		billebillrobie.com
Mike O'Neil	Solarc	
Bill Kuhn		
Rex Wolf	Bend PC / USC	rexwolf@hotmail.com

URBAN GROWTH BOUNDARY REMAND

Sign in Sheet

Meeting: UGB Joint TAC / USC workshop

Date: 12/16/14

Location:

Name	Organization	Email Address
Andy High	COBA	
Gary Everett	COBA	
Scott Jackson	Land Owner	jackson4@countrycablevision.net
Sid Snyder		seppos1d@gmail.com
John Smallwood	Community of Christ	rnjgolf@msn.com
Cindy Tiker	TAC	
Laura Fritz	Plug Com.	
David Morgan	BendNewsToday.com	news@BendNewsToday.com
John Russell	DSL	
Bob Campbell		
ANNMARIE COLUCCI	PATRICK RPS	ANNMARIE@Bendpatrick.com
Gary Vidon	CWA	randalvri@gmail.com
Chris Schmoyer	Schwabe Williamson Wyatt	cschmoyer@schwabe.com

Meeting Agenda

Current UGB Workshop
Monday, December 15, 2014 2:00 PM – 5:00 PM
Deschutes Services Building (1300 NW Wall Street), Barnes/Sawyer Room

1. Welcome — 2:00 PM

By Victory Chudowsky

2. Briefings — 2:05 PM

a. Process overview - Where we are in the process, our focus today, and urban form as our discussion tool — Joe Dills, APG

b. Urban form overview – description of the typologies — Jay Renkens, MIG

c. Instructions to the small groups – the questions, base map and chips — Joe Dills

3. Small Group Work — 2:25 PM

Please see the Small Group Instructions for the specific questions to be addressed. Project team members will serve as facilitators and recorders for the groups.

4. Break — 3:45 PM

Maps will be collected and posted on easels so they can be seen together. During the break, the project team will make a list of common themes shown on the maps.

5. All Group Discussion — 3:55 PM

a. Discussion of common themes
b. Listing and discussion of additional ideas and alternatives from the small groups
c. Discussion of how the themes and ideas might be packaged into scenarios to be evaluated

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

6. Public Comment 4:40 PM

   Visitors will be able to comment on the workshop questions and working ideas.

7. Summary 4:50 PM
8. Adjourn 5:00 PM

Note: Results from the workshop will be available at an informal UGB drop-in session on Tuesday, December 16th, at 3:30 to 5 PM in the City Hall Council Chambers.

BRIEFING PACKET

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

JOINT TAC / USC WORKSHOP

December 15, 2014

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Current UGB Workshop

Briefing Packet

December 10, 2014

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Background memos/documents attached for reference:

- Base case briefing paper from Residential TAC 4
- Relevant remand / statutory requirements
- Juniper Ridge fact sheet from TAC 4
- Development code efficiency measures from Residential TAC 4, updated per TAC input
- Project goals
- MetroQuest summary

ABOUT THE WORKSHOP

Overview and Purpose

Working within the current UGB, the purpose of the workshop is to:

a. **Identify opportunities and preferences for how Bend should grow and change within the current UGB.** Using the concept of "urban form", workshop participants will identify ideas and options for how Bend might change over time to achieve the project goals and address Remand requirements (e.g. residential efficiency measures, employment redevelopment areas).

b. **Work together.** The workshop will engage the Residential TAC, Employment TAC, and UGB Steering Committee in creating scenarios for growth within the current UGB. TAC recommendations will be brought together as the starting point for discussions.

c. **Direct the project team.** Participants will provide policy-level direction to the project team regarding ideas to be tested for growth and change within the current UGB. The team will follow up on that direction by creating and evaluating several scenarios using the Envision Tomorrow modelling tool. Results will be brought back for TAC discussion in January.

The workshop is targeted to members of the Residential TAC, Employment TAC, and UGB Steering Committee. The Boundary TAC will be invited to observe. The workshop is also open to the public to attend and observe. However, they will not participate directly in the table discussions. If time allows, a comment period can be provided at the end of the workshop.

Why Urban Form?

"Urban form" refers to the pattern and organization of development in the city. Urban form diagrams are a helpful short-hand way to plan and "see" the shape of the city as we examine various growth strategies and Remand requirements. Urban form also helps recognize the rich variety of places within Bend, much better than is captured in zoning designations. The following are the three basic urban form categories and the working types within each category.

Neighborhoods – historic, traditional, mixed suburban, single family suburban, large lot

Centers and Corridors – major commercial corridors, urban mixed use centers, local centers and corridors

Employment Districts – institutional, medical center, industrial/professional office, mixed employment

Through the language and graphics of urban form, we can explore fundamental questions that will inform the City's response to the Remand. Examples include:

- Where are Bend's commercial and mixed use centers today and how will they grow in the coming years?
- Where are the opportunities for new commercial and mixed use centers?
- Which neighborhoods are appropriate for accommodating additional housing mix and/or density?
- Which neighborhoods are fine as they are and shouldn't expect much change?
- How can land use support future transit and travel options?
- As various employment areas redevelop, what do we want them to look like?

Finally, in addition to helping answer place-specific questions, urban form helps to put all of the pieces together. This will create a cohesive vision with clear growth and livability strategies that will underlie the urban growth boundary expansion and update of the Bend General Plan.

The project team presented preliminary urban form diagrams at the October 9 All-TAC meeting and at the TAC 3 meetings. They have been updated for use in the workshop.

How Does This Fit into the Remand and other Legal Requirements?

State statute and the LCDC Remand both require that the city consider "efficiency measures" to increase the capacity of the existing UGB as part of demonstrating that the documented housing and employment needs cannot reasonably be met within the existing UGB. Details of the requirements are provided in the attached memorandum titled "Remand and Legal Requirements Relevant to the Current Urban Growth Boundary Workshop".

The Big Questions

The workshop will produce maps and lists of ideas about where the City should focus growth within the current UGB. The big picture question for participants to address is: ***What is the intended future urban form within the current UGB?*** That is, what are the planned land uses and forms of development in Bend's varied neighborhoods, centers and corridors, and employment districts.

Stated in Remand terms, the overarching question is: ***Where should we apply efficiency measures to focus growth differently than the current General Plan, and why?*** In this context, we are focusing on how things may change in selected areas compared to the "base case".[1] Other areas are "stable" and will develop (or not) per the General Plan and the market.

For this workshop and the subsequent analysis, the answers to the above can be options, not a single answer. From this perspective, the question is: ***What are the ideas the project team should test?***

The time frame for these questions must recognize the Remand planning period (through the year 2028), but not be constrained by it. Workshop participants should think long term: 20+

[1] Please see Base Case Briefing Paper for additional information. As used here, base case means the amount and type of growth expected based on past trends and the currently adopted Bend General Plan.

years. As part of the post-workshop analysis, the team will estimate the growth in all areas through the year 2028.

Specific Goals

- Endorse or refine recommendations from both TACs for specific residential and employment opportunity areas identified in previous TAC meetings.
- Identify any other areas (e.g. along current and future transit corridors, in/near employment areas, or in/near mixed use centers) where the group would like to see or evaluate a different future urban form than the base case and recommend an alternative future urban form for those areas.
- As a refinement of the urban form typologies, identify any areas that should be priorities for pedestrian-oriented and/or transit-oriented future development.

HOW WE GOT HERE: SUMMARY OF PROGRESS TO DATE

This meeting is a bridge between the work of the TACs and USC in summer and fall of 2014 and the framing of recommendations for Phase 1 of the project. The diagrams on the following page show where we are in the process.

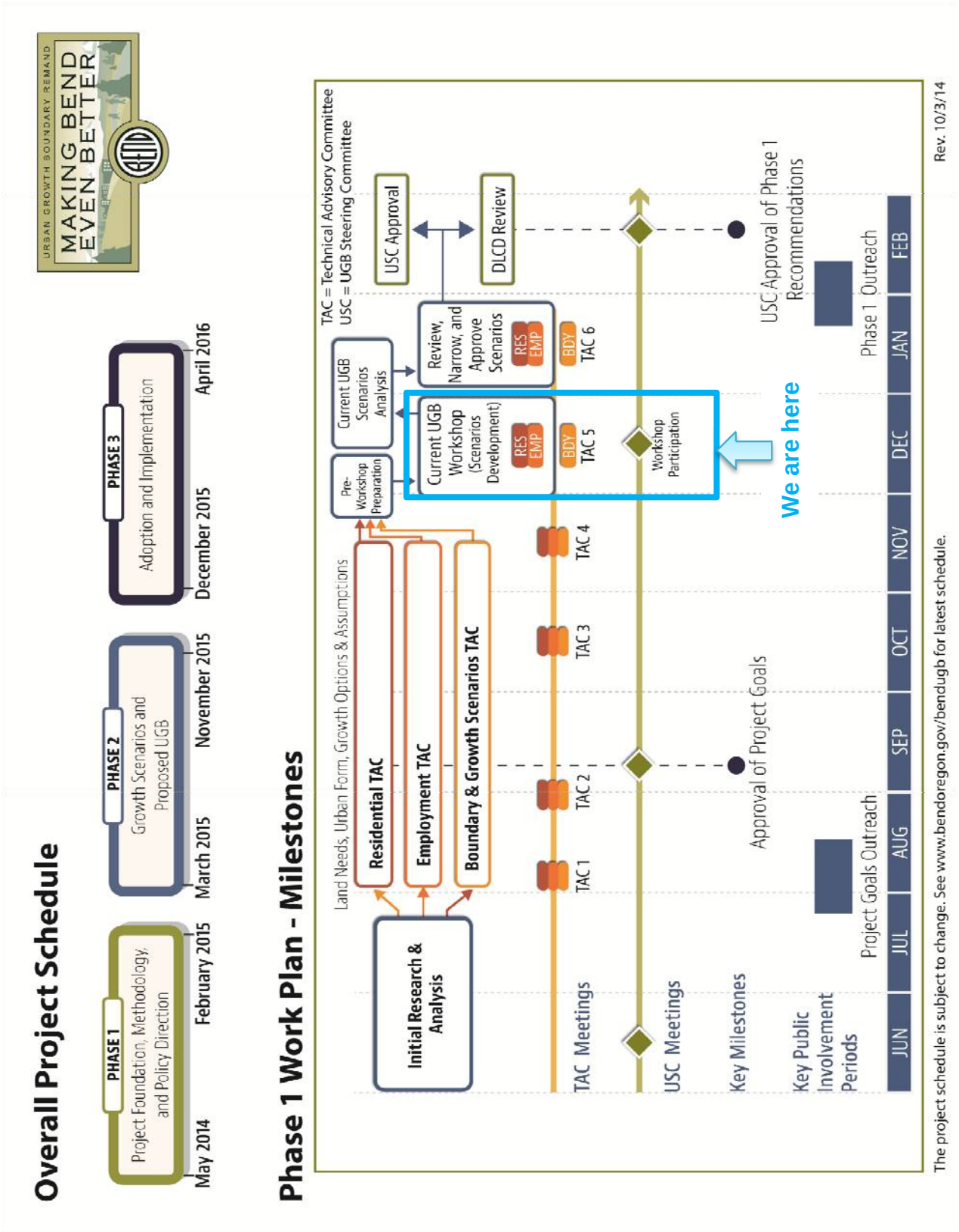
The TACs, USC and public involvement process have made significant progress to set the stage for the workshop since the project began in June, 2014. The following is a brief summary.

TAC Meetings 1 and 2 and the September USC Decisions

In their start-up meetings in August, the TACs completed a set of preliminary recommendations that were approved by the USC on September 4, 2014. The topics approved are summarized below.

- Housing need and mix
- Market factor for employment lands
- Use of suitability criteria for screening of expansion areas
- Aggregation of lands for alternatives analysis
- Study area map
- Applicability of McMinnville case to Bend's boundary methodology
- Evaluation measures for Goal 14: Factor 1 - efficient accommodation of identified land need (preliminary recommendation)

Please see the city's website (http://www.bendoregon.gov/index.aspx?page=52&parent=18146) for the USC's meeting summary and specific memoranda.


URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER
Overall Project Schedule
PHASE 1
Project Foundation, Methodology, and Policy Direction
May 2014
February 2015
PHASE 2
Growth Scenarios and Proposed UGB
March 2015
November 2015
PHASE 3
Adoption and Implementation
December 2015
April 2016
Phase 1 Work Plan - Milestones
TAC = Technical Advisory Committee
USC = UGB Steering Committee
Land Needs, Urban Form, Growth Options & Assumptions
Initial Research & Analysis
Residential TAC
Employment TAC
Boundary & Growth Scenarios TAC
Pre-Workshop Preparation
Current UGB Scenarios Analysis
Current UGB Workshop (Scenarios Development)
RES EMP
BDY
Review, Narrow, and Approve Scenarios
USC Approval
DLCD Review
TAC 1
TAC 2
TAC 3
TAC 4
TAC 5
TAC 6
Workshop Participation
We are here
TAC Meetings
USC Meetings
Approval of Project Goals
USC Approval of Phase 1 Recommendations
Key Milestones
Key Public Involvement Periods
Project Goals Outreach
Phase 1 Outreach
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
Rev. 10/3/14
The project schedule is subject to change. See www.bendoregon.gov/bendugb for latest schedule.

TAC progress in October and November

- The Residential TAC accomplished:
  - Input into assumptions for the buildable land inventory
  - Input into assumptions for a reference base case (existing UGB, as of 2014)
  - Review of "opportunity sites" (vacant/mostly vacant sites over five acres)
  - Review of a range of potential efficiency measures, including code-related efficiency measures that might apply city-wide in all or selected residential zones.

- The Employment TAC accomplished:
  - An analysis of the redevelopment potential of commercial, industrial and mixed use areas – strategies for 13 areas in the city.
  - Discussion of special site needs: medical, university, and large lot industrial

- Both TACs participated in discussing diagrams of Bend's existing urban form, which provides a framework description of today's neighborhoods, centers and corridors, and employment districts (at the Oct 9 All-TAC meeting and TAC 3 meetings).

Public outreach to date

- MetroQuest on-line survey – 1500 views, 1000 comments related to Project Goals and strategies, as well as location-specific comments, see the project web page (www.bendoregon.gov/bendugb)
- Two open house meetings in July, 2014, orienting people to the project structure and overall goals and encouraging participation in MetroQuest
- Speakers bureau meetings providing specific community groups with basic information about the project and opportunities to comment and inform their member - 11 meetings
- Bend Voice participation - seven questions to date related to specific TAC discussion issues
- UGB drop-in meetings – visits by the general public at four informal drop-in meetings
- Presentations to community groups and agencies – numerous presentations to a variety of groups

WHERE WE GO NEXT: HOW WORKSHOP INPUT WILL BE USED

The direction provided in the workshop will be an initial step toward meeting Remand requirements, planning the UGB expansion, and eventually updating the General Plan.

After the workshop, the project team is tasked with packaging the maps and ideas into scenarios. Scenarios are alternative land use and transportation plans – options that can be analyzed using the Envision Tomorrow modelling tool. The team will focus on "areas of change", i.e. those areas which might grow differently than currently designated by the General Plan. Much of the City has established development patterns, streets and open spaces that are

built out or not expected to change in the years ahead – these areas will be evaluated using the General Plan as the underlying assumption.

The workshop outcomes, and current UGB scenarios, will not be set in stone. Starting in January, they will be discussed by the TACs, refined, and narrowed to Phase 1 recommendations to be considered by the UGB Steering Committee. The project team expects this will be a "bookended" range of growth potential within the current UGB. In Phase 2 of the project, when expansion areas are evaluated, the Phase 1 recommendations may be refined.

Memorandum

November 10, 2014

To:	Residential Lands Technical Advisory Committee Employment Lands Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	Base Case UGB Capacity Approach

INTRODUCTION

What is the "Base Case"?

The "Base Case" is a spatial projection of housing and employment growth through 2028 within the current UGB based on past trends and current policies, utilizing the Envision Tomorrow model. The Base Case represents the current UGB's remaining capacity **prior** to applying assumptions regarding new residential efficiency measures and measures to encourage additional redevelopment of employment areas. It does not identify housing or employment need; rather, it provides an estimate of how much of the identified need[1] we can expect to be met within the current UGB if no policy changes are made.

What is the purpose of the Base Case?

The reason to create a Base Case is two-fold: first, to understand the remaining UGB capacity as of 2014 if no policy changes were made; and, second, to compare the impacts of alternatives that incorporate efficiency measures for how they change UGB capacity, travel behavior (and vehicle miles traveled), and other indicators relevant to the Project Goals.

How does the Base Case relate to policy documents?

The team's working assumption is that the Base Case will be consistent with information on past trends documented in the draft Housing Needs Analysis (HNA), residential Buildable Lands Inventory (BLI), and Economic Opportunities Analysis (EOA). Exactly where the results of the Base Case get documented is yet to be determined – they may be captured in the HNA and

[1] Note that the housing and employment need for the period from 2014 through 2028 will need to be adjusted from the original 20-year projections to account for housing and employment growth that has occurred since 2008. That growth has met some portion of the need for various types of housing and jobs. The team will examine how much housing by type has been developed between 2008 and 2014, and then subtract these from the projected needed housing by type; the remaining need (the difference between the original projection and the increment added since 2008) is what will be compared against the UGB capacity. A similar update will be done for employment, subtracting the net job growth between 2008 and 2014 from the projected job growth through 2028 to estimate remaining employment growth.

EOA, or they may be summarized in an "Urbanization Report" that focuses on how the housing and employment needs identified in the HNA and EOA will be met.

Discussion Questions for Technical Advisory Committees

The Residential Lands Technical Advisory Committee (Residential TAC) and Employment Lands Technical Advisory Committee (Employment TAC) are asked to review the approach and general assumptions summarized below and endorse or suggest revisions to this approach.

BASE CASE ASSUMPTIONS

Land Base

The Base Case will utilize an updated 2014 buildable lands inventory, developed using the definitions and assumptions detailed in the two BLI policy issue memorandums (refined based on TAC direction as needed).

Assumptions about Future Residential Development

In general, assumptions about the amount, type and density of residential development expected within each zone will be based on analysis of "the amount and type of development that has occurred on the vacant and redevelopable lands since [the city's] last periodic review," as required by the Remand.[2] This analysis has largely been done for the 1998-2008 period (the period from the city's last period review to the time of the Remand) as part of the work to date to update the BLI and HNA. The city's continued reliance on the 1998-2008 data analysis is justified because the residential development in the city since 2008 has largely been limited to building individual homes on lots created before 2008, due to the economic downturn.[3] This means that the density for the development was set prior to 2008 for nearly all recent residential building activity.

Development in Residential Zones on Vacant Land

- **Vacant parcels that are large enough to be allowed to develop with more than one unit and are not subject to CC&Rs restricting infill**:
  - Rely on observed housing mix in each zone/plan designation for 1998-2008[4]
  - Rely on observed net density for each housing type in each zone/plan designation for 1998-2008 (or minimum density, where above observed density)[5]
  - Rely on gross-to-net acreage reductions in line with the right-of-way factor and other land needs factors established in the HNA and EOA (may vary by parcel size and/or zone)

[2] Land Conservation and Development Commission (LCDC) Remand Order, page 26.

[3] Land use permit data indicates roughly a dozen residential subdivisions and two multi-family development projects approved since 2008, all in 2013 and 2014, compared to between 600 and 700 single family homes built since 2008 on platted lots.

[4] See Attachment A to City's BLI memo.

[5] See Attachment A to City's BLI memo.

- **Vacant parcels that are not large enough to be allowed to develop with more than one unit or subject to CC&Rs restricting infill:** assume one unit per parcel

Development in Residential Zones on Land "Developed with Infill Potential"

- Use observed trend data to estimate % of these acres likely to experience infill by parcel size and zone
- Use observed trend data to estimate mix and density of infill development by parcel size and zone[6] (or minimum density, where above observed density)

Development in Residential Zones on "Partially Vacant" Land

- Use trend data to estimate % of these acres likely to experience additional development by zone[7]
- Observed net density for each housing type in each zone/plan designation (or minimum density, where above observed density)[8]

Development in Residential Zones on "Developed" Land

- Assume no redevelopment on land that is classified as developed – this land does not have additional capacity for growth based on the zoning, existing development, and/or restrictions such as CC&Rs.

Development in Commercial and Mixed Use Zones

- Use trend data to estimate amount of residential development expected through new development and/or redevelopment
- Observed net density for each housing type in each zone/plan designation[9]

Assumptions about Future Employment Land Development

In general, assumptions about the amount, type and density of employment land development on vacant land will be based on historical trends analysis for various sub-categories of land, except for redevelopment, which will be estimated as has been described in previous memos to the Employment TAC. Much of the historic trend work was done for the 1998-2008 period as part of the EOA and, with few exceptions, the Remand does not require that it be re-done.

Development on Vacant Employment Land

- Observed employment density & mix of employment types by plan designation[10]

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[6] See City's BLI memo, page 15. This analysis will need to be updated to account for exclusion of land with restrictive CC&Rs.

[7] See City's BLI memo, page 14. May need to be updated to estimate as a percent of land classified as Partially Vacant.

[8] See Attachment A to City's BLI memo.

[9] See City's BLI memo, pages 17-18. In addition to the MR and ME zones, which were addressed in the BLI memo, a new analysis of residential development in other employment zones will need to be done for the 1998-2008 period.

[10] See EOA Table 37, page 105.

- Factor in gross-to-net conversions based on assumptions from the EOA: 1) private and public rights-of-way, and 2) land for institutional, private open space, and other land, and 3) vacancy rate[11]

Redevelopment in Industrial / Mixed Employment and Commercial and Mixed Use Zones

- Updated redevelopment analysis by district based on current zoning and achievable rent levels, as described to the Employment Lands Technical Advisory Committee in other memos

TEAM RECOMMENDATION

The team recommends that the TAC approve the above-recommendations (or as modified by TAC discussion) for use in the Base Case analysis.

[11] See EOA pages 108-109 for assumptions on rights-of-way and lands for institutional/open space uses. Vacancy Rate was updated by the Remand Task Force (see July 28, 2011 Remand Task Force materials on Remand Subissue 5.6).

Memorandum

December 9, 2014

To:	Residential Lands Technical Advisory Committee Employment Lands Technical Advisory Committee Urban Growth Boundary Steering Committee
Cc:	City Staff
From:	APG Consulting Team
Re:	Remand and Legal Requirements Relevant to the Current Urban Growth Boundary Workshop

INTRODUCTION

The Current Urban Growth Boundary Workshop is intended to explore what the city can reasonably do to further accommodate the identified housing and employment needs inside the existing Urban Growth Boundary (UGB). This is required under state statute (Oregon Revised Statutes or ORS), administrative rule (Oregon Administrative Rules or OAR), and the Land Conservation and Development Commission's Remand to the City of Bend on its UGB expansion (Remand). The relevant requirements are summarized in this memorandum.

REQUIREMENTS TO CONSIDER CHANGES INSIDE THE UGB

State statute (ORS 197.296) requires cities to consider land use efficiency measures if the housing needs analysis finds that the City may not meet identified housing needs. Specifically, the statute states (emphasis added):

> *(6) If the housing need... is greater than the housing capacity..., the local government shall take one or more of the following actions to accommodate the additional housing need:*
>
> *(a) Amend its urban growth boundary to include sufficient buildable lands to accommodate housing needs for the next 20 years. As part of this process, the local government shall consider the effects of measures taken pursuant to paragraph (b) of this subsection. ...*
>
> *(b) Amend its comprehensive plan, regional plan, functional plan or land use regulations to include new measures that demonstrably increase the likelihood that residential development will occur at densities sufficient to accommodate housing needs for the next 20 years without expansion of the urban growth boundary. A local government or metropolitan service district that takes this*

> *action shall monitor and record the level of development activity and development density by housing type following the date of the adoption of the new measures; or*
>
> *(c) Adopt a combination of the actions described in paragraphs (a) and (b) of this subsection.*

The Remand specifically addresses the question of whether ORS 197.296 "gives the City the choice of whether to accommodate future need for residential land by expanding its UGB or adopting new measures" – it does not. Per the Remand, "Goals 10 and 14, and ORS 197.307(3), require the city to consider and explain why its determination of capacity based on existing measures is reasonable, and why other, new, measures are not reasonable."[1]

Statute also requires local governments to adopt zoning and other measures to ensure that the identified housing needs, including mix and density, can be met:

> ORS 197.296(7):*...the local government shall determine the overall average density and overall mix of housing types at which residential development of needed housing types must occur in order to meet housing needs over the next 20 years. If that density is greater than the actual density of development..., or if that mix is different from the actual mix of housing types..., the local government, as part of its periodic review, shall adopt measures that demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next 20 years.* (emphasis added)
>
> ORS 197.307(3): *When a need has been shown for housing within an urban growth boundary at particular price ranges and rent levels, needed housing shall be permitted in one or more zoning districts or in zones described by some comprehensive plans as overlay zones with sufficient buildable land to satisfy that need.*

The Remand underlines and clarifies the city's obligations under these statutes:

> *...the Commission also wants the City to understand that it was not persuaded that the City is meeting its obligations under Goals 10 and 14, and ORS 197.307(3) to plan for an adequate amount of land for needed housing, particularly for land in plan districts that authorize multifamily housing.* [2]

Goal 14 includes the requirement that:

[1] LCDC Remand, page 53.

[2] LCDC Remand, page 53.

> *Prior to expanding an urban growth boundary, local governments shall demonstrate that needs cannot reasonably be accommodated on land already inside the urban growth boundary.*

In addition, Oregon Administrative Rule (OAR) 660-024-0050, for UGBs, states:

> *(1) When evaluating or amending a UGB, a local government must inventory land inside the UGB to determine whether there is adequate development capacity to accommodate 20-year needs determined in OAR 660-024-0040. ...*
>
> *(4) If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs determined under OAR 660-024-0040, the local government must amend the plan to satisfy the need deficiency, either by increasing the development capacity of land already inside the city or by expanding the UGB, or both, and in accordance with ORS 197.296 where applicable. Prior to expanding the UGB, a local government must demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB. If the local government determines there is a need to expand the UGB, changes to the UGB must be determined by evaluating alternative boundary locations consistent with Goal 14 and OAR 660-024-0060.* (emphasis added)

The Remand also emphasizes the City's obligation to further demonstrate why needs cannot be accommodated inside the UGB:

> *"... under Goal 14, the city must consider taking additional steps to plan for its projected future residential land needs within its urban growth boundary and show that such steps are not reasonable before expanding its boundary..."*[3] (emphasis in original)
>
> *"On remand, the City should address ... existing and potential future measures in determining the projected residential capacity of lands within its prior UGB in order to assure that it is complying with the Goal 14 'reasonably accommodate' standard."*[4]

WHAT MUST BE CONSIDERED?

Residential Efficiency Measures

ORS 197.296 identifies a list of potential efficiency measures related to accommodating housing need:

> *Actions or measures, or both, may include but are not limited to:*

[3] LCDC Remand, page 52.

[4] LCDC Remand, page 52, footnote 20.

(a) Increases in the permitted density on existing residential land;

(b) Financial incentives for higher density housing;

(c) Provisions permitting additional density beyond that generally allowed in the zoning district in exchange for amenities and features provided by the developer;

(d) Removal or easing of approval standards or procedures;

(e) Minimum density ranges;

(f) Redevelopment and infill strategies;

(g) Authorization of housing types not previously allowed by the plan or regulations;

(h) Adoption of an average residential density standard; and

(i) Rezoning or redesignation of nonresidential land.

The Remand directives to the city on efficiency measures include:

- *explain why increasing the density allowed, particularly for large blocks of vacant land outside of existing established neighborhoods, is not reasonable during the 20-year planning period.*[5]
- *The measures the City considers must include, but are not limited to, evaluating the infill capacity (including plan and zone changes) of residential lands with more than five acres that are vacant or partially vacant.* [6]
- *The City also should consider the measures as listed in the Director's Decision, at 45-46, that are related to efficiency measures.*[7]
- *The Commission is <u>not</u> asking the City to amend its plan and zoning designations in established residential neighborhoods; the City has several areas of vacant and redevelopable residential lands where it could consider planning for more multi-family housing.*[8] (emphasis in original)

The Director's Decision from the Remand identifies efficiency measures drawn from the city's own Residential Lands Study:[9]

[5] Land Conservation and Development Commission (LCDC) Remand, page 52.

[6] LCDC Remand, page 53.

[7] LCDC Remand, page 53.

[8] LCDC Remand, page 53.

[9] DLCD Director's Report, page 46.

- *Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers;*
- *Consider splitting the existing RS zone, which covers most of the residential areas of the city, into two or more zones in order to encourage redevelopment in some areas while protecting development patterns in well-established neighborhoods;*
- *In areas where the city is planning significant public investments, consider upzoning as a means to help spread the costs of such investments;*
- *Consider strengthening the minimum density provisions in the existing UAR and SR 2½ zones by eliminating PUDs and other clustering tools; and*
- *Consider strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types, rather than relying on low density residential development.*

The list in the Director's Report is not intended to be exclusive or directive; it is up to the City to determine what is reasonable to accommodate its future housing needs within its UGB. The identified measures must be considered, but are not required to be implemented if they are not reasonable or appropriate. This is important because Statewide Planning Goal 10 (Housing) and ORS 197.296 require the City to ensure that land zoned for needed housing types is planned in locations appropriate for needed housing types[10].

Redevelopment on Employment Lands

There is less guidance in Statute, Rule, and the Remand on what should be considered for redevelopment of employment land. The Remand did not direct the city to consider specific measures to accommodate employment growth within the current UGB; it simply directed the city to further justify and explain the assumptions that the city made about how much redevelopment would take place on employment land within the current UGB. The only guidance is that from Goal 14, that needs "cannot reasonably be accommodated on land already inside the urban growth boundary". The question, then, is to what degree can forecast employment growth reasonably be accommodated inside the current UGB, and are there reasonable actions the city could take to accommodate that growth beyond the current policies and programs?

WILL THIS WORK? THE TEST OF REASONABLE LIKELIHOOD

Residential Efficiency Measures

The Remand and state statute and rule provide guidance on how the city should consider the likelihood that the residential efficiency measures identified will be effective:

- *"To the extent that the City elects to meet its future need for residential land by adopting <u>new</u> measures to promote infill and/or redevelopment, ORS 197.296(7) requires that it demonstrate that such measures 'demonstrably increase the likelihood that residential*

[10] LCDC Remand Order page 49.

development will occur at the housing types and density and at the mix of housing types required to meet needs over the next 20 years.'"[11]

- *"In establishing that actions and measures ... demonstrably increase the likelihood of higher density residential development, the local government shall at a minimum ensure that land zoned for needed housing is in locations appropriate for the housing types identified ... and is zoned at density ranges that are likely to be achieved by the housing market ..."* [12]
- *"If the City relies on new measures, they must do more than merely adopt policies encouraging future planning for the development of needed housing. ... The City may do this by adopting specific timelines for initiation and completion of efficiency measures, including detail about the outcomes that will be achieved as part of the Housing Element of its comprehensive plan. The City also must adopt findings that show why those outcomes are more likely to occur as a result of the measure(s), and how they relate to needed housing types and locations."*[13]

Redevelopment on Employment Lands

State administrative rules implementing Statewide Planning Goal 9 (OAR 660-009-0005(1)) provide the following definition for the purposes of conducting an EOA:

> *(1) "Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.*

Thus "developed land" equates to land "likely to be redeveloped" when evaluating land supply for an EOA. The consulting team operationalizes this definition as land with existing development (i.e., land inventoried in the buildable lands inventory or BLI as "developed") but with the potential that existing development will be converted to more intensive uses during the planning period, as a result of present or expected market forces. Redevelopable land is a subset of developed land, which corresponds with the definition of "developed land" as stated in OAR 660-009-0005(1).[14] We use the term "redevelopable" to refer to redevelopment in this memorandum. Goal 9 does not provide explicit guidance on how to evaluate redevelopable lands beyond this definition.

[11] LCDC Remand, page 54.

[12] ORS 197.296(9)

[13] LCDC Remand, page 55-56.

[14] OAR 660-009-0005(1) "Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.

Memorandum

November 10, 2014

To: Residential Lands Technical Advisory Committee
Employment Lands Technical Advisory Committee

From: Bend Staff
APG Consulting Team

Re: Juniper Ridge Land Use Planning

This memorandum summarizes the master plan proposed for Juniper Ridge in 2008, and the subsequent land use actions creating the Juniper Ridge Overlay Zone.

JUNIPER RIDGE MASTER PLAN

The City initiated the master planning process for Juniper Ridge in 2003 with a set of guidelines endorsed by the Bend City Council for creating a new employment center in Central Oregon. The guidelines included:

- Light Industrial/Research Park;
- Mixed Use Development;
- Wide buffer areas;
- Future college campus;
- Pathways, parks and open space on over 10% of the site
- New transportation interchanges and;
- Incentives for sustainable development

Following a 16-month public process, a preferred plan for Phase 1 of Juniper Ridge emerged (see Figure 1). The city used this preferred plan as the basis for issuing a "Request for Qualifications" to hire a design team to deliver a master plan and future development opportunities for Juniper Ridge. The City hired the Juniper Ridge Partners to develop the Juniper Ridge Technology and Research Park.

The total land area within Juniper Ridge owned by the city is 1,500 acres. Approximately 494 acres is located within the existing City limits. The master plan developed by Juniper Ridge Partners included a plan for the entire 1,500 acres (see Figure 2). The goal of the master plan was to create a vibrant place with a variety of land uses including residential, industrial, office and commercial, a university and parks and open space interwoven in a mixed-use development. It was important that the new mixed-use community was walkable and provided a range of building types and densities.

Figure 1: Juniper Ridge Phase 1 Preferred Plan

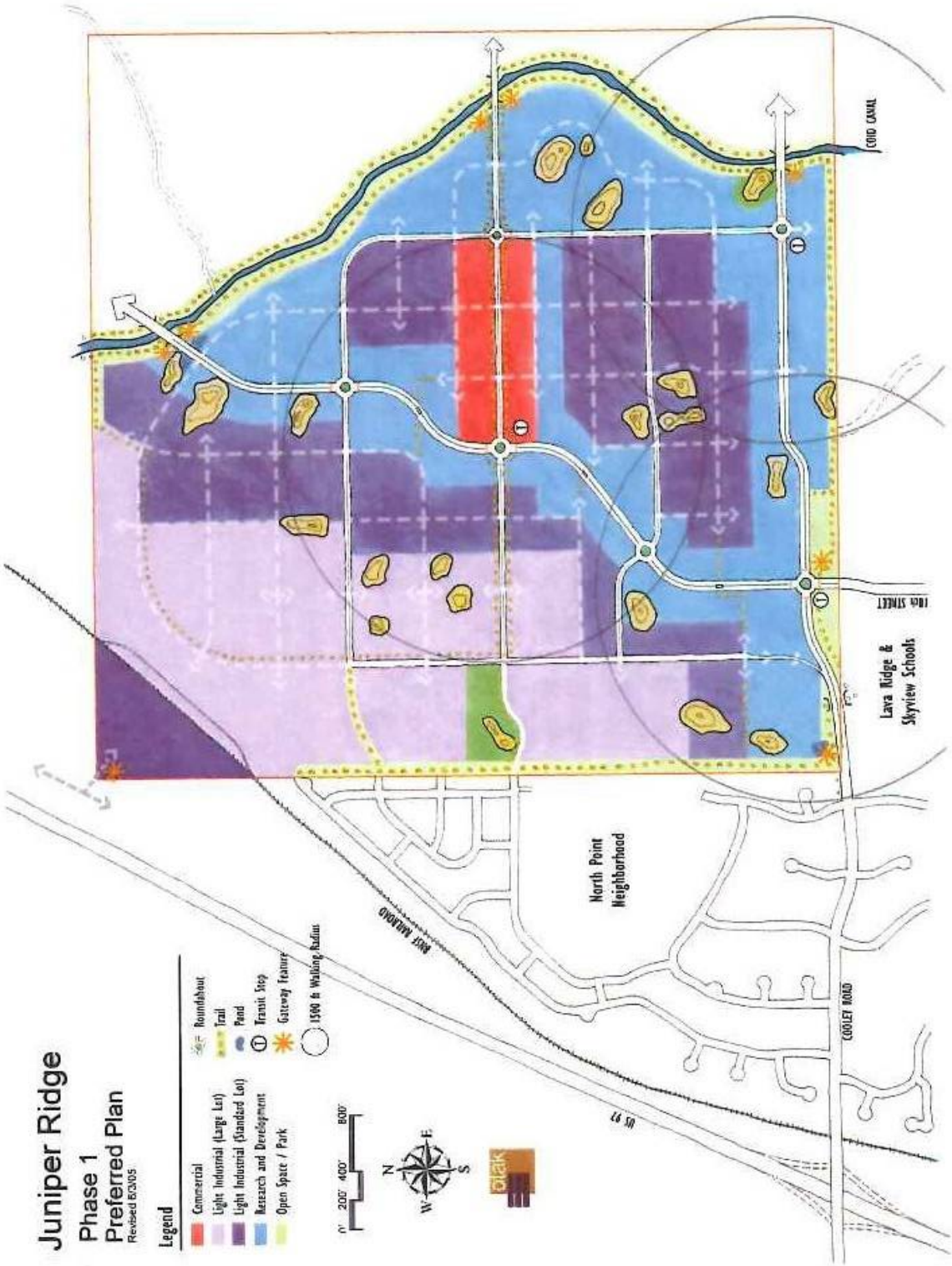


Figure 2: Juniper Ridge Master Plan

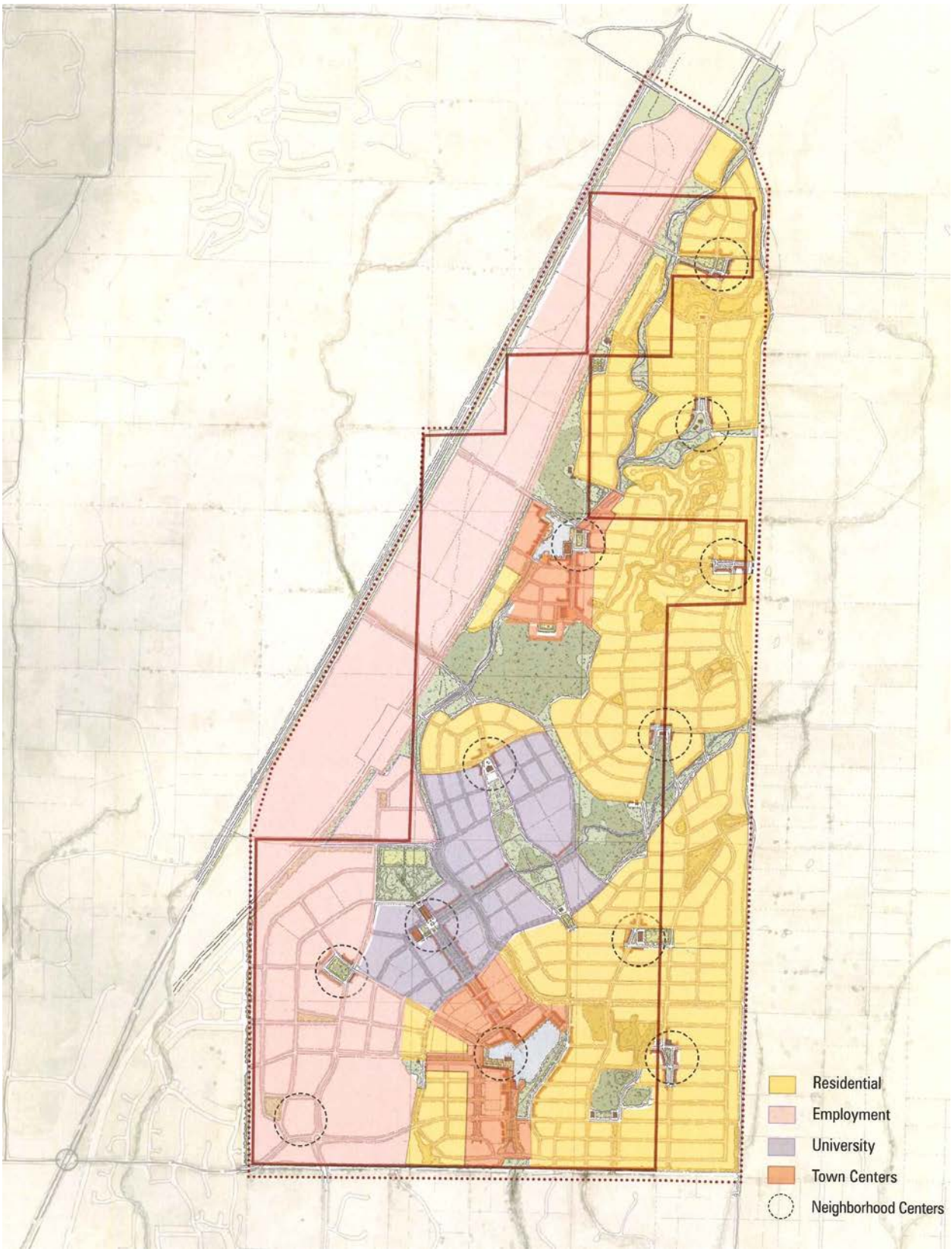
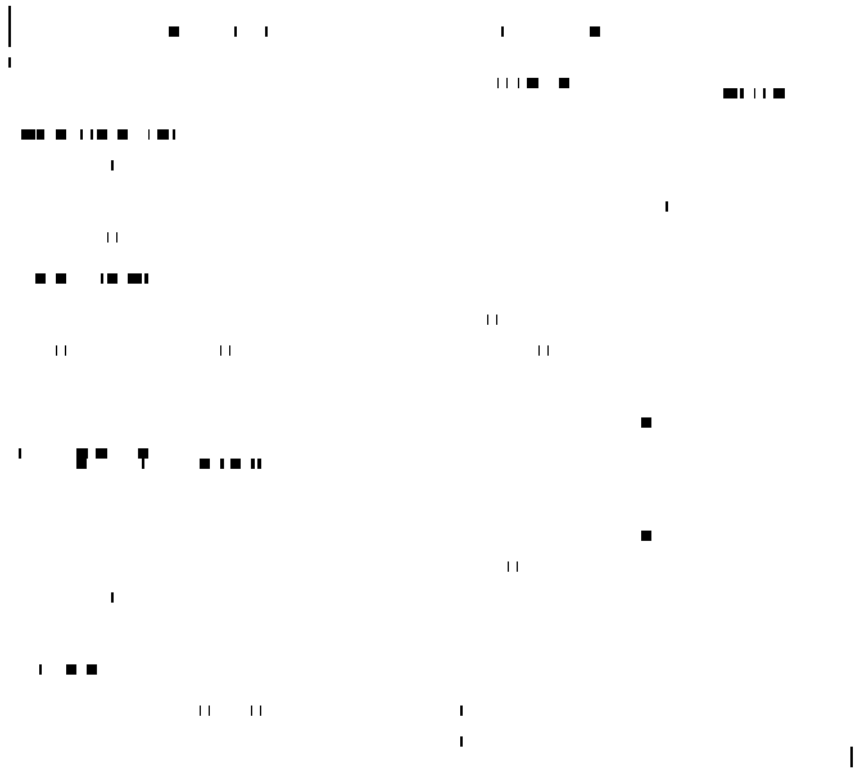


Table 1 lists the mix of uses and building types contemplated in the Master Plan and the approximate number of acres and the densities proposed.

Table 1: Juniper Ridge Master Plan Development Program

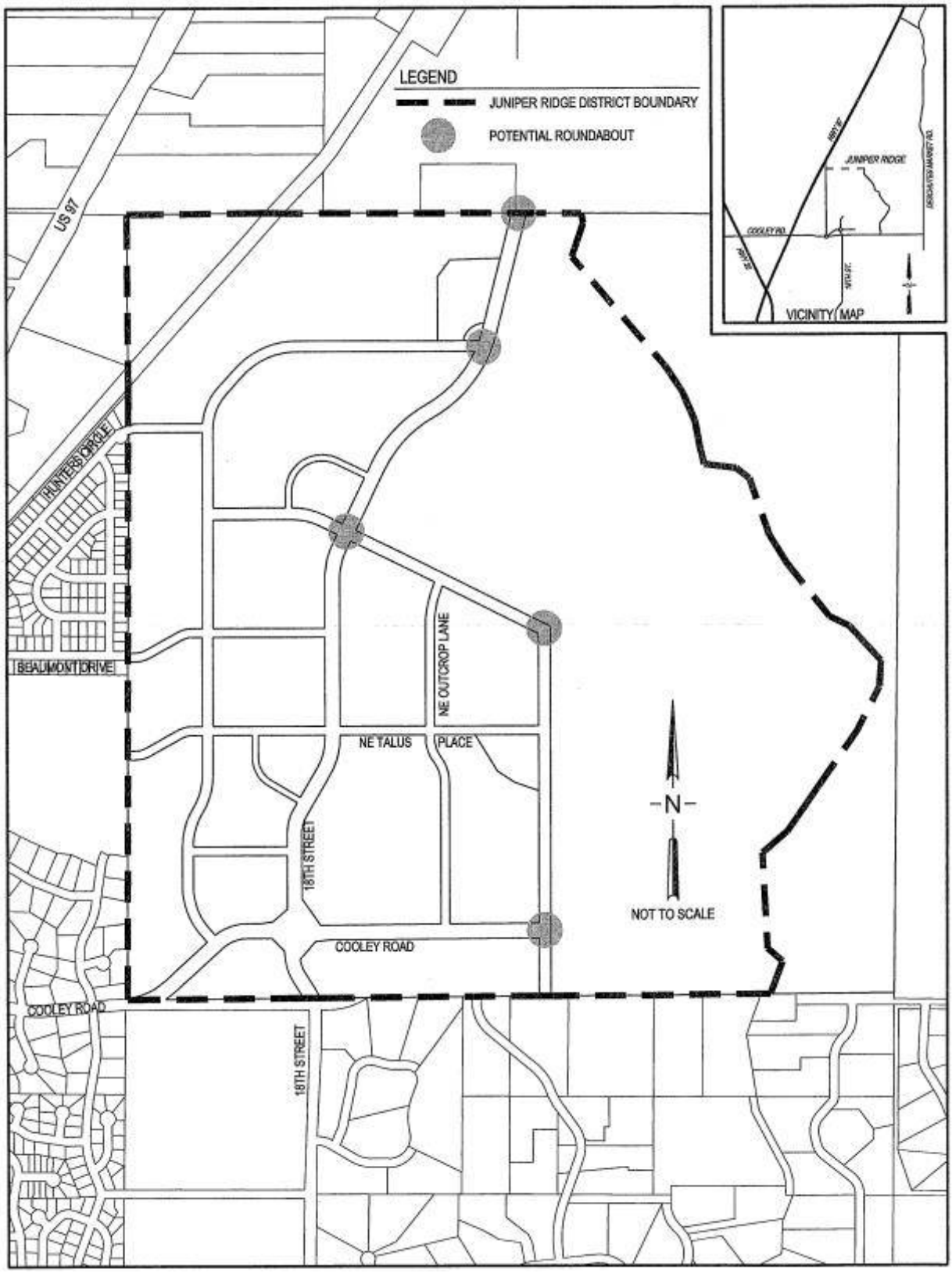


JUNIPER RIDGE OVERLAY

The Juniper Ridge Overlay Zone was adopted in 2010 to provide opportunities for the development of employment uses within the first phase of Juniper Ridge. The overlay zone encompasses 306 acres of land. The development layout is consistent with the master plan developed by Juniper Ridge Partners and discussed above (see Figure 3).

The Overlay Zone provides specific development standards including building setbacks, building heights, fencing and screening, street design standards and transportation mitigation. Unfortunately, the Special Planned District does not provide any guidance on the building prototype or provide for any design review.

Figure 3: Juniper Ridge Overlay Zone



EMPLOYMENT LAND CONSIDERATIONS FROM 2008 EMPLOYMENT OPPORTUNITIES ANALYSIS (EOA)

The 2008 EOA includes an analysis of industrial land supply, input from industrial and employment land developers and users, and recommendations regarding the distribution of supplies of industrial lands. The following briefly summarizes key points related to Juniper Ridge and industrial land supplies in the EOA for sake of background and discussion by the Residential and Employment TACs as they consider any potential changes to the type and mix of land uses for the portion of Juniper Ridge inside the current UGB.

Any changes to future plan designations at Juniper Ridge will have impacts on industrial land supplies and the location of new industrial areas inside the current UGB, or in any expansion areas. Simply put, if land with a plan designation of Industrial Light (the plan designation for land at Juniper Ridge inside the current UGB) is converted to another use like residential or commercial, then an equivalent amount of land would likely need to be provided elsewhere in any UGB expansion area.

Mentions of Juniper Ridge occur throughout the 2008 EOA. With respect to land supply, pages 91-99 illustrate that Juniper Ridge is one of a handful of vacant parcels over 20 acres inside the current UGB. At the time, it also represented 59% of the total land supply for industrial and mixed use employment land for the planning period. "Effectively, the entire supply of new large industrial sites in Bend would be in one location and under one ownership if no other industrial and mixed use lands are added to the UGB. This presents a number of potential problems. First, well documented transportation deficiencies near Juniper Ridge limit the marketability of this parcel for years. Second, many potential industrial site users may not find the Juniper Ridge location ideal form a number of standpoints. Third, the private sector has no opportunity to compete with the city in terms of price, location, and supply if no additional land is made available."[1] However, there may also be advantages of public ownership as well, including the possibility of low holding costs, and a patient land owners, or for the city to focus on encourage targeted industries to locate at Juniper Ridge.[2]

Policy input from stakeholders and decision makers at the time the EOA was written encouraged industrial lands to be distributed around the 2009 UGB expansion area to provide a greater mix of locations, ownerships, regulatory models and controls, flexibility and choice in the market, and decreased development limitations due to infrastructure shortfalls in specific locations.[3] The contested "market choice" factor was introduced in part to provide additional supplies of new industrial land outside of Juniper Ridge since the 2008 EOA predicted sufficient supplies of industrial land were available for the 20-year planning period.

While the final land need analysis for industrial land is not complete at this time, recent Employment TAC direction and USC approval to not apply a market choice factor suggests that

[1] Page 97 EOA.

[2] Page 64 EOA.

[3] Page 113 EOA.

significant new supplies of industrial and mixed use land are not likely to added to the expanded UGB. Changing the mix of future land uses at Juniper Ridge may be one way to create new industrial areas inside, and outside the current UGB.

PUBLIC INPUT ON JUNIPER RIDGE THROUGH METROQUEST

The Bend Urban Growth Boundary Remand MetroQuest Survey (survey) collected input from the public about the proposed project goals, their relative importance, and the level of support for project strategies among members of the community from July 31, 2014 through August 24, 2014.[4] One part of the survey asked users "Where should we guide growth and change to accomplish our strategies?" and instructed users to drag markers on the map to indicate where changes or improvements should happen over the next 15 years. A comment could be included with each pin as well. A land use tab asked users to indicate where they would like to see more:

- Housing (Apartments, Townhomes, 2-3-4-Plex Homes, Single Family Homes, Mixed Use)
- Shopping (Small Neighborhood Centers, Larger Retail Centers, Other)
- Employment (Small Industrial, Offices, Large Industrial, Other)
- Other

The most common uses identified for Juniper Ridge include large and small industrial, offices, single family homes, residential mixed use, and small neighborhood centers. A number of participants also mentioned Oregon State University (OSU) for this area. Nearly half of the pins on Juniper Ridge were for Employment uses (roughly 65 pins). Another 25% of pins were for residential uses (roughly 35 pins), with the remainder split between shopping and other (largely indicating OSU in comments).

[4] More detailed information about the survey can be found in the Metroquest Survey: Project Goals & Strategies report: http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=18710

Memorandum

November 10, 2014

To: Residential Lands Technical Advisory Committee
Cc: Bend Staff
From: APG Consulting Team
Re: Land Use Efficiency Measures through Development Code Changes

INTRODUCTION

Summary of Previous Work

The Residential Lands Technical Advisory Committee (Residential TAC) has been given an overview of a range of possible efficiency measures that Bend can or must consider and the legal requirements for consideration of efficiency measures in the "Introduction to Land Use Efficiency Measures" memorandum dated August 19, 2014. Measures focusing on increasing density on large blocks of vacant land were explored in the "Land Use Efficiency Measures Context and Opportunity Sites" memorandum dated October 7, 2014.

The October memorandum on efficiency measures also discussed the many objectives that efficiency measures can help achieve, in addition to meeting housing mix and density needs, including: realizing the project goals, advancing urban form principles, and reducing Vehicle Miles Traveled (VMT). In particular, goals like providing a mix of housing types within neighborhoods, offering a variety of high-quality housing options, and protecting the character of historic neighborhoods are all important to keep in mind in considering efficiency measures affecting residential land.

Focus for this Memorandum

This memorandum focuses on potential modifications to the development code that could be applied to residential zones throughout the city to encourage development of needed housing types and/or encourage more efficient use of residential land. It also includes one financial incentive that could be applied for certain types of development, regardless of location within the city.

The Director's Report from the Department of Land Conservation and Development (DLCD), which was referenced and endorsed in the Remand, requires the City to consider measures including the following:

- "measures to encourage needed housing types within additional areas of the city"[1]

[1] DLCD Director's Report (Bend UGB Order 001775), pages 39 and 46.

- "strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types"[2]

Additional measures identified by the project team and/or included in a workbook titled "Planning for Residential Growth: A Workbook for Oregon's Urban Areas" produced by DLCD were included in the initial list of potential measures for consideration in the August memorandum. A subset of those measures that could be addressed broadly through a change to the development code (as opposed to a site-specific change of plan/zone designations or other location-specific policies or incentives) is included in this memorandum, with additional detail on the nature of the potential code amendments. The potential code amendments are proposed to be grouped into two packages for the purposes of testing their impacts on the capacity of the current UGB (and other performance measures): a "conservative" package and an "aggressive" package.

Future Work: Analysis of Impacts

The discussion of potential code changes that could encourage development of needed housing types and/or encourage more efficient use of residential land feeds into the creation and testing of scenarios for the existing UGB using the Envision Tomorrow model. The next step for the project team will be to roughly estimate the magnitude of the potential impacts of each package, intentionally erring on the side of being optimistic, in order to determine the order of magnitude of their collective impact. This will be done by translating each of the measures in each package into revisions to the assumptions about future development that are built into the Base Case based primarily on professional judgment. If the preliminary estimate of the potential impact shows that they could substantially affect current UGB capacity if successful, it will be worth the effort to further research, quantify, and refine the assumptions about impact in order to show that the measures "demonstrably increase the likelihood of higher density residential development", as required by ORS 197.296(9) and to rely on them to help meet the city's housing need.

The development code efficiency measures will be combined with location-specific measures, such as zone changes and targeted incentives, to create scenarios for future development inside the existing UGB. These scenarios will be refined and narrowed; the preferred option or options will determine the residual land need to be met through UGB expansion (this may be a range).

POTENTIAL DEVELOPMENT CODE EFFICIENCY MEASURES

Summary of Draft Recommendations for Further Evaluation

The set of potential changes in Table 1 builds on the information provided in the August memorandum, offering specific ideas for how existing regulations could be modified in order to implement certain efficiency measures. Measures are grouped into categories where they

[2] DLCD Director's Report, pages 39 and 46.

address a similar issue (column 1 reflects the category). The right-hand columns identify which measures and changes are preliminarily recommended to be included in each package.

Density Standards: Multiple Options

One of the measures identified in Table 1, increasing minimum gross density standards in RS and RM zones, merits additional discussion of alternative approaches to achieve the same objective. Currently, the RS, RM and RH zones span the range of densities from 2.2 to 43 units per gross acre with three zones and no gaps. As a result, minimum density standards are fairly low in the RS and RM zones, and both zones allow a wide range of gross densities.

- Standard Density Residential (RS): 2.0 – 7.3 units/gross acre
- Medium Density Residential (RM): 7.3 – 21.7 units/gross acre

Based on data from 1998-2008 included in the draft BLI, average density of development (for all housing types) in the RS and RM zones for that period was close to the mid-point of the allowed density range:

- RS: 4.9 units per acre
- RM: 13.4 units per acre

In order to get new development to consistently build in the upper end of the density range, there are three main options:

1. raising minimum densities in the RS and RM zones
2. splitting each of the RS and RM zones into two zones with different density ranges (e.g. RS-1 and RS-2, RM-1 and RM-2)
3. keeping the current RS and RM zones with their current density ranges, but adding a variant of each zone with a higher minimum density (e.g. RS-2 and RM-2)

Raising minimum densities could be done across the city and would apply only to new development and redevelopment (it would not make existing development non-conforming). However, it would leave “gaps” of densities that are not permitted to be built within the city any more (the range between the existing minimum and the new minimum in each zone). It could also increase the contrast between infill areas and existing development (existing neighborhood compatibility standards could limit this effect).

Splitting the RS and RM zones into a total of four zones, with each covering a different but smaller density range would allow all densities from 2.0 to 43 to continue to be possible somewhere in the city. The zones could be applied to respond to existing development patterns, topography, infrastructure capacity, and/or other factors. It would also better protect areas currently developed near the bottom of the density spectrum where infill is determined not to be appropriate by limiting the maximum potential density to closer to what exists today. However, this approach would require rezoning most of the city to select the appropriate sub-zone for each area, even if changes are not proposed for the area. Creating a version of RS-1 that covers just the low end of the density range might also allow this new zone to be applied to certain areas currently designated RL, to facilitate slightly higher density development patterns

without allowing as great a contrast from the existing density range in the RL zone as if the current RS zone were used.

Keeping the existing zones but also creating variants with higher minimum density would allow stable developed areas to retain their existing zoning, but would allow the higher minimum density versions to be applied to areas with more (re)development potential.

The project team's working recommendation is the third option – keeping the existing zones but also creating variants with a higher minimum density to be applied in areas with more vacant land or land with infill/redevelopment potential, and to support existing or emerging Urban Form considerations.

Density Needs Good Design

As the community considers options to increase infill potential and residential density of new development, additional design standards, particularly for single family development in infill situations and on small lots, may be needed in order to ensure that new development is attractive and does not result in too much of a single building style in one place. (There are existing architectural design standards for duplexes and triplexes, townhomes, accessory dwellings and multifamily housing, but not for single family detached homes.) The design standards could focus on building design elements such as roof pitch, windows, setback variations, massing and height variations, and architectural elements rather than using tools like setbacks and larger lots to provide compatibility. Such design standards are not included in Table 1 because they are not an efficiency measure in themselves; however, they may need to be included in any package of code amendments that does include efficiency measures. If the Residential TAC believes this is an important consideration, the project team suggests policy recommendations for design standards be included with policy recommendations supporting more infill or higher density development. The current scope of work does not include the timing or resources for design standard code development, but such work could take place on the heels of the UGB adoption process.

Discussion Questions for Residential TAC

The Residential TAC is asked to provide feedback on the draft packages of efficiency measures indicated in the right-hand columns of the table:

- Are the right measures included in each package?
    - Is the conservative package too conservative?
    - Are any of the measures included in the "aggressive" package too unpalatable to analyze further?

At this stage, the Residential TAC is not being asked to endorse either or both packages of code changes, but rather to help the project team refine which measures are appropriate to include in the packages for further testing as described previously.

In addition, the Residential TAC is asked for input on which approach to addressing density standards in the RS and RM zones should be pursued.

Table 1: Potential Efficiency Measure Code Changes and Packages

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
Density Standards	(1) Increase minimum density standards in RS and RM zones	a) Increase minimum gross density from 2.0 to 4-5 DU/acre for RS (or RS-2)	✓ (4 DU/ac min)	✓ (5 DU/ac min)
		b) Increase minimum gross density from 7.3 to 10-12 DU/acre for RM (or RM-2)	✓ (10 DU/ac min)	✓ (12 DU/ac min)
	(2) Limit and clarify exceptions to minimum density standards	a) Revise exemptions in 2.1.600.B.7 and 8 to be limited to exempting a single family home on an existing platted lot, rather than exempting any redevelopment or infill within an existing pattern of development (but consider allowing a lower minimum density for small infill sites, e.g. under an acre)	✓	✓
Permitted Housing Types	(3) Allow Accessory Dwelling Units (ADUs) in all single family zones	a) Permit ADUs outright rather than conditionally in SR 2 1/2, RL and RS zones on lots created prior to December 1998 subject to ADU and design standards		✓
	(4) Allow cluster / cottage housing development	a) In RS zone, allow cluster / cottage housing up to gross density of 8-10 units/acre (vs 12 in NW Crossing), otherwise same standards as for NW Crossing	✓ (8 DU/ac max)	✓ (10 DU/ac max)
		b) In RM zone, allow cluster / cottage housing at gross densities allowed in the RM zone, otherwise same standards as for NW Crossing	✓ (14-16 DU/ac max)	✓ (16-21 DU/ac max)

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	(5) Allow duplexes & triplexes in single family zones	a) Allow duplexes & triplexes outright rather than conditionally **on corner lots** in RL & RS zones, subject to existing standards (could also include new ones, such as orientation of entrances, etc.)	✓	
		b) Allow duplexes and triplexes outright rather than conditionally **throughout** RL & RS zones, subject to existing standards		✓
	(6) Preserve the RH zone for attached housing types[3]	a) Prohibit new Single Family Detached housing in the RH zone		✓
Dimensional Standards	(7) Decrease minimum lot size/dimensions in order to allow building at higher densities with single family (attached or detached) homes	a) Decrease minimum lot size in RM zone for Single Family Detached from 3,000 to 2,500 square feet		✓
		b) Decrease minimum lot size in RH zone for Single Family Detached (if allowed, see (6)a)) from 2,500 to 2,000 square feet		✓
		c) Decrease minimum lot size in RH zone for Single Family Attached from 2,000 to 1,500 square feet		✓
		d) Reduce minimum lot dimensions in RH zone for Single Family Attached from 20' (width) and 80' (depth) to 18' (width) and 75' (depth)		✓

[3] Note: it is currently not possible to build Single Family Detached housing in the RH zone at the minimum density for the zone unless other housing types are also included in the development that increase the density. Decreasing the minimum lot size (see (7)b)) might make it possible to meet the minimum density with Single Family Detached housing.

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	(8) Reduce setback requirements to allow greater utilization of small lots and make development on smaller lots more feasible	a) Reduce front setback from 10' to 5' in RH and RM zones for Single Family Detached and Single Family Attached. Retain garage setback of 20' to ensure any parking of vehicles does not extend into public rights of way (sidewalk).		✓
		b) Change building height threshold for increased side & rear setbacks in RH & RM zones from 20' to 25' and apply only to buildings abutting the RS zone, not existing single-family housing in other zones (setbacks increase by 0.5 ft for each foot by which the building height exceeds X ft. when abutting the RS Zone)		✓
	(9) Increase or eliminate maximum lot coverage standards to allow greater utilization of small lots	a) In the RS zone, increase maximum lot coverage for two-story Single Family Attached dwellings from 35% to 50%		✓
		b) In the RM zone, increase maximum lot coverage for Single Family Attached and Single Family Detached dwellings from 40% to 60%		✓
		c) In the RH zone, eliminate maximum lot coverage requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage		✓
Parking Requirements	(10) Reduce parking requirements to reduce development	a) ADUs: waive off-street parking requirement for ADUs added to an existing developed lot in some circumstances		✓

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	cost and allow more efficient use of land	b) Duplex and triplex: reduce parking requirements from 2 to 1.5 spaces per unit		✓
		c) Multifamily housing: reduce parking requirements for affordable housing by 0.5 spaces per unit for each unit size (i.e. from 1 to 0.5 spaces per unit for studio & 1-bedroom units, from 1.5 to 1 spaces per unit for 2-bedroom units, and from 2 to 1.5 spaces per unit for 3- or more bedroom units)		✓
Special Standards for Large and Small Sites	(11) Revise or eliminate design standards for neighborhood compatibility to increase development potential of infill sites	a) Remove restriction that no more than two new lots, parcels or portions thereof shall adjoin an existing abutting property boundary	✓	
		b) Reduce minimum lot size for lots abutting existing properties 20,000 square feet or greater from 15,000 square feet to 10,000 square feet	✓	
		c) Reduce minimum side and rear yard setbacks to be halfway between normal standard and existing setback on adjacent lot rather than matching adjacent lot	✓	
		d) Eliminate the residential compatibility standards under 2.1.300(G) entirely		✓
	(12) Adjust requirements for master planning to	a) Reduce threshold to require master planned neighborhood development per 4.5.400 from 40 acres to 20 acres[4]	✓	✓

[4] Section 4.5.300.A already states that properties totaling 20 acres or larger require a Master Neighborhood Development Plan in conformance with BDC 4.5.400; however, 4.5.400.A states that the applicability is to properties totaling 40 acres or larger.

Category	Efficiency Measure Concept	Potential Code Amendments	Rec. for "Conservative" Package?	Rec. for "Aggressive" Package?
	further promote desired housing types and densities	b) Increase minimum required density for master planned developments from 60% of maximum density to 80% of maximum density for the zone	✓	✓
		c) Strengthen requirements for providing a mix of housing types (require a certain level of mixing of unit types)	✓	✓
		d) Strengthen requirements for providing neighborhood commercial and parks/open space (require a small amount of land be used for neighborhood commercial and parks/open space when consistent with urban form opportunities maps, other factors)	✓	✓
Financial Incentives	(13) Reduce SDCs for desired housing development	a) Reduce SDCs for ADUs or small infill projects where infrastructure is already available and adequate to serve the new housing units		✓

PROJECT GOALS

The City of Bend has entered the next phase of its Urban Growth Boundary (UGB) expansion to chart a path for Bend's future growth. The UGB is a line drawn on the City's General Plan map that identifies Bend's urban land. This land represents an estimated 20-year supply of land for employment, housing, and other urban uses. As the city continues to grow, we have an opportunity to develop a plan for future growth that reflects the community's goals and meets state planning requirements.

The UGB Steering Committee approved the following Project Goals on September 4, 2014.

A Quality Natural Environment

As Bend grows, it preserves and enhances natural areas and wildlife habitat. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Balanced Transportation System

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

Great Neighborhoods

Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks. Small neighborhood centers provide local shops, a mix of housing types, and community gathering places. The character of historic neighborhoods is protected and infill development is compatible.

Strong Active Downtown

Bend's downtown continues to be an active focal point for residents and visitors with strong businesses, urban housing, civic services, arts and cultural opportunities, and gathering places. Parking downtown is adequate and strategically located. Planning in other areas continues to support a healthy downtown.

Strong Diverse Economy

Bend has a good supply of serviced land planned for employment growth that supports the City's economic development goals, provides a range of diverse jobs and industries, and supports innovation. Employment areas, large and small, have excellent transportation access.

Connections to Recreation and Nature

Bend continues to enhance its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city.

Housing Options and Affordability

Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing design is innovative and energy efficient.

Cost Effective Infrastructure

Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

September 4, 2014
www.bendoregon.gov/bendugb

Memorandum

12/9/2012

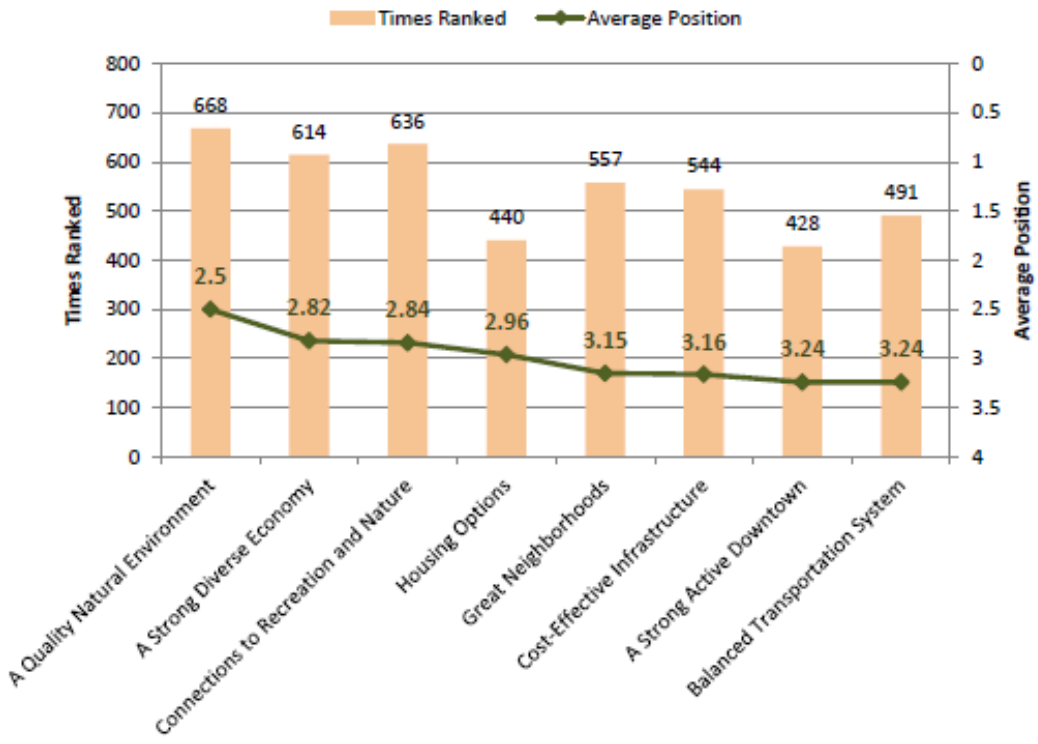
SUMMARY OF METROQUEST INPUT FOR DECEMBER TAC/USC WORKSHOP

The discussion below summarizes input received from the Bend Urban Growth Boundary Remand MetroQuest Survey (survey) active from July 31, 2014 through August 24, 2014. More detailed information about the survey can be found in the Metroquest Survey: Project Goals & Strategies repot.

Goal Rankings

Respondents were asked to rank their top five project goals in order of importance. As shown in the figure below, “A Strong Diverse Economy” had the second-highest average ranking, somewhat below to “A Quality Natural Environment” and slightly above “Connections to Recreation and Nature.” The combination of these three values might suggest that respondents favor employment types that do not harm Bend’s natural and recreational assets.

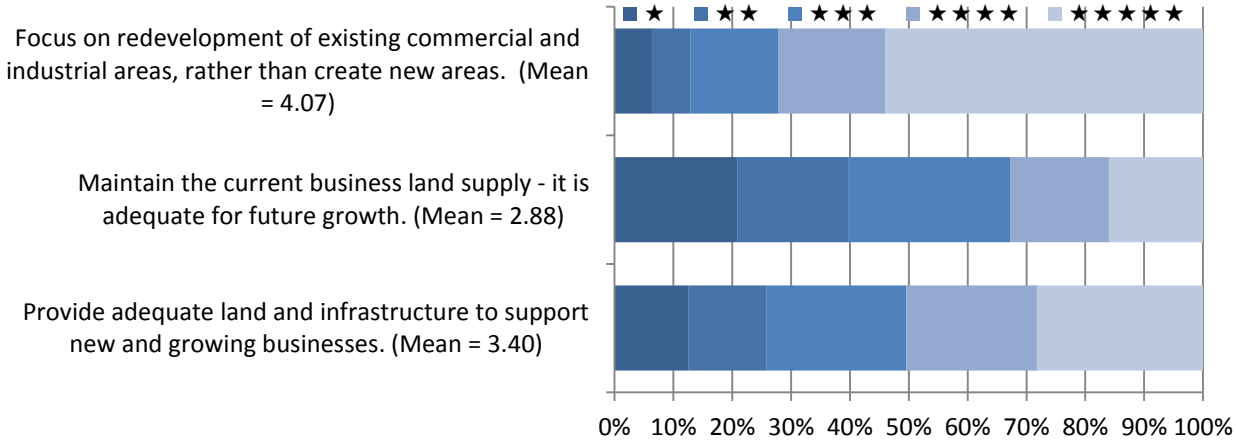
Figure 1.Project Goals and Mean Times Ranked



Strategy Ratings

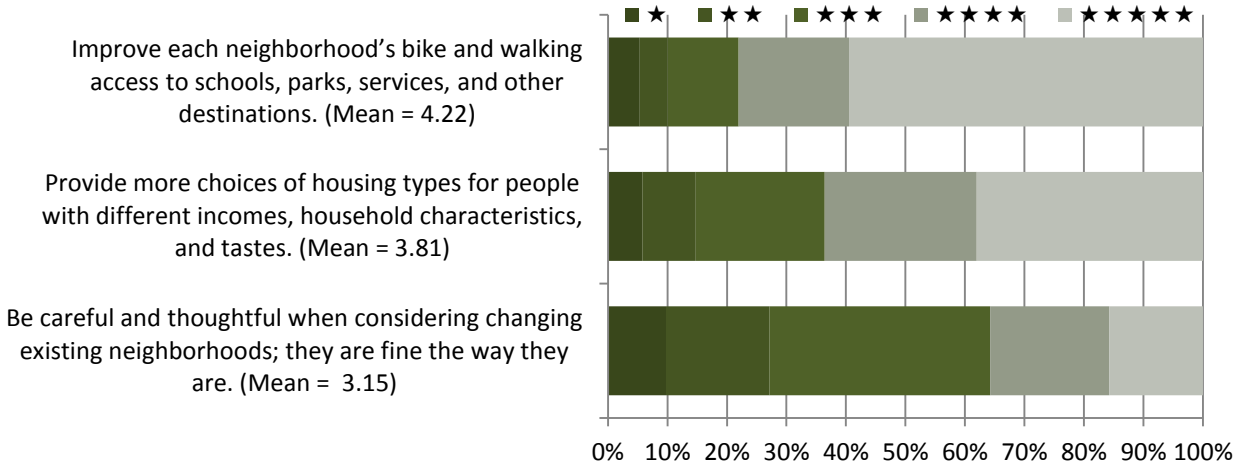
Respondents were asked to rate their level of support for strategies to meet these project goals. The strategies identified to attain the goal of a **Strong Diverse Economy** are shown in the figure below, along with their level of support among respondents. “Focus on redevelopment of existing commercial and industrial areas, rather than create new areas” received the highest average rating by a large margin. This strategy fits with the direction of the Bend UGB Remand project, which is focusing on redevelopment of existing commercial and industrial areas.

Figure 2. Strategies: Strong Diverse Economy



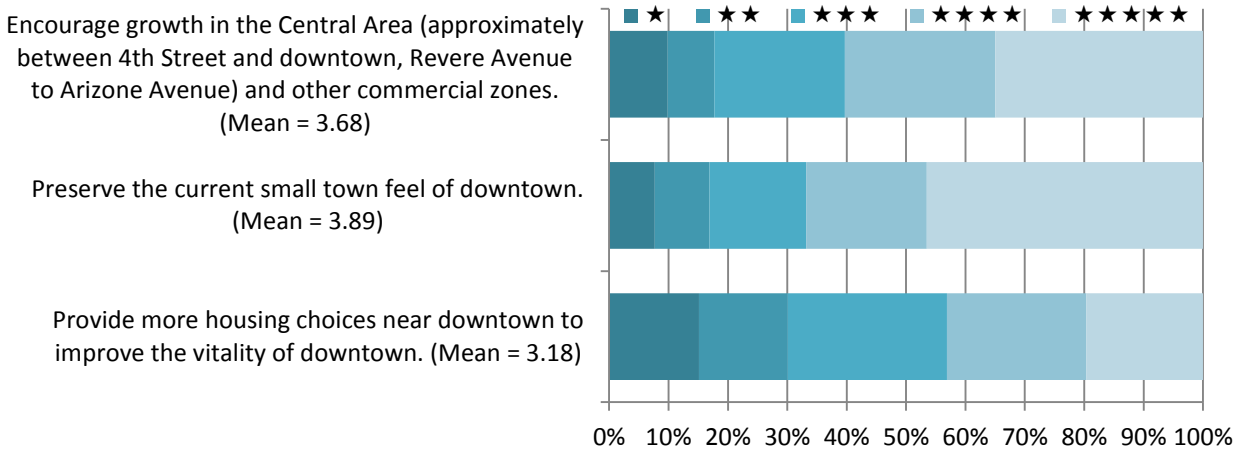
Rankings for **Great Neighborhoods** strategies are shown below. Very strong support was expressed for increasing walking and biking access and providing housing choices; less so for the statement that neighborhoods “are fine the way they are.”

Figure 3. Strategies: Great Neighborhoods



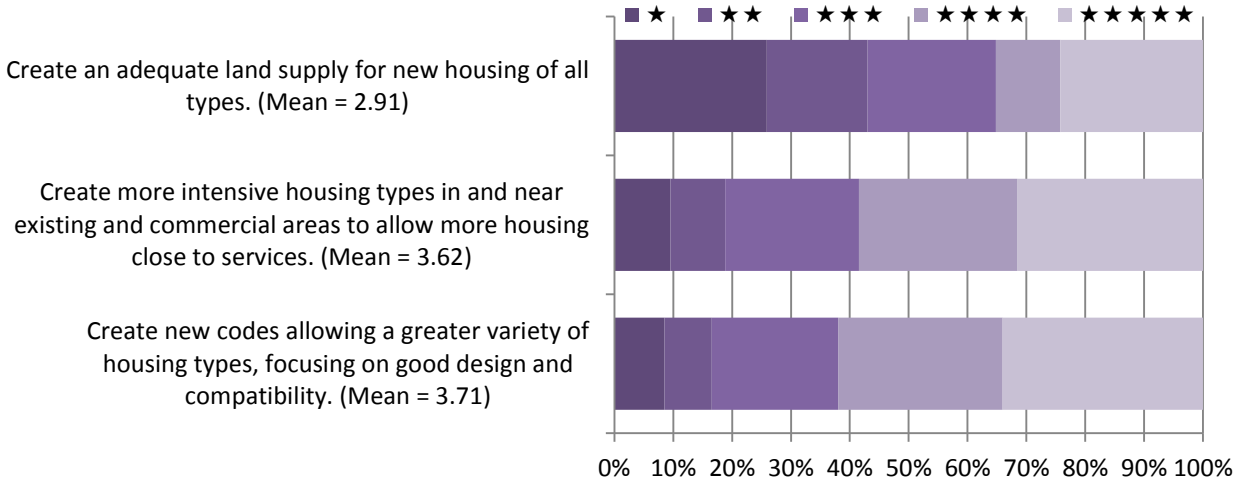
Strategies for a **Strong Active Downtown** received fairly mixed responses, though there was strong support for preserving the "small town feel" of downtown.

Figure 4. Strategies: Strong Active Downtown



Responses to **Housing Options** were also fairly mixed. The ratings of "Create an adequate land supply for housing of all types" were especially varied, with roughly 25% of respondents rating it with one star and 25% rating it with 5 stars.

Figure 5. Strategies: Housing Options



Places and Opportunities

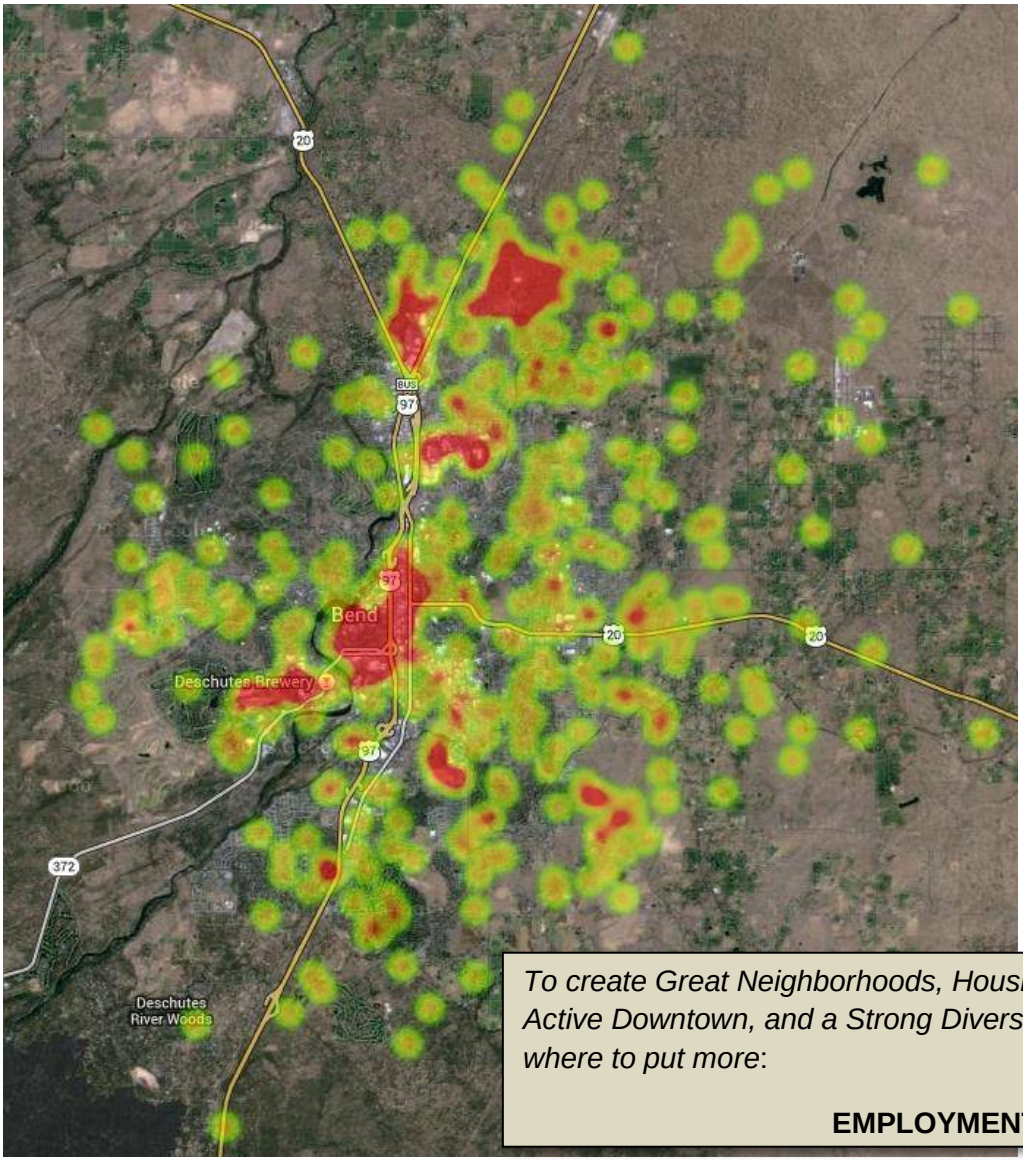
Respondents were asked "Where should we guide growth and change to accomplish our strategies?" via a mapping exercise to place pins for Employment Land on a map, which are shown on the heatmap below. Pins could also be associated with comments.

There was a clear interest among respondents for redevelopment of the 3rd street corridor (Area 3 on the Redevelopment Analysis Study Areas map) for small industrial and office uses,

supporting and supported by significant multimodal transportation improvements along the corridor.

There was some interest in redevelopment in areas with access to the Bend Parkway, near the South 3rd Street Commercial area (Area 12 on the Redevelopment Analysis Map), and SW Century Drive (Area 8). The “Core Pine” area (Area 9) was called out for mixed use, office, and high-tech employment. Vertical mixed use in Galevston and Newport areas (Area 1) was mentioned, with multi-story residential above shopping.

Juniper Ridge was frequently called out for large-scale industrial uses. Areas near Cascade Village were mentioned for new employment opportunities due to their proximity to existing shopping and parkway access. There were many mentions of support for smaller-scale and locally-owned retail, as opposed to “box stores,” particularly in the east side



To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

EMPLOYMENT

Natural Resources and Employment Conflicts. Potential conflicts arise when contrasting at some respondents desire to increase employment lands the western portions of the city (largely for traffic reasons) with other respondents' clear desire to protect natural areas to the west and prohibit urban expansion in that direction.

Shopping and Retail. Shopping and Retail suggestions were focused downtown and 3rd street, with frequent mention of the need for retail close to East Side residents. There were many respondents showing support for a grocer and local-serving shopping in nearly every Bend neighborhood. Shopping was often mentioned in the Old Mill district, along with multifamily housing for OSU students and bicycle/pedestrian/transit connections to campus.

Figure 6. Large Retail Centers Map

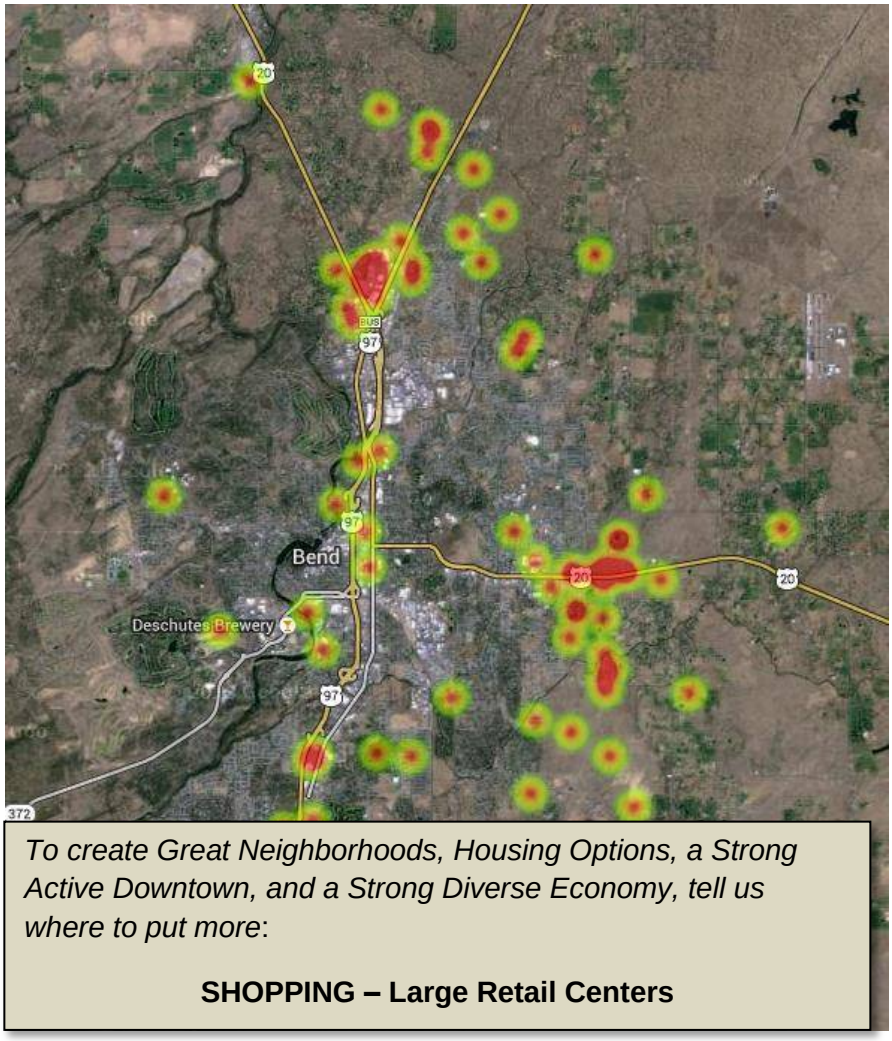
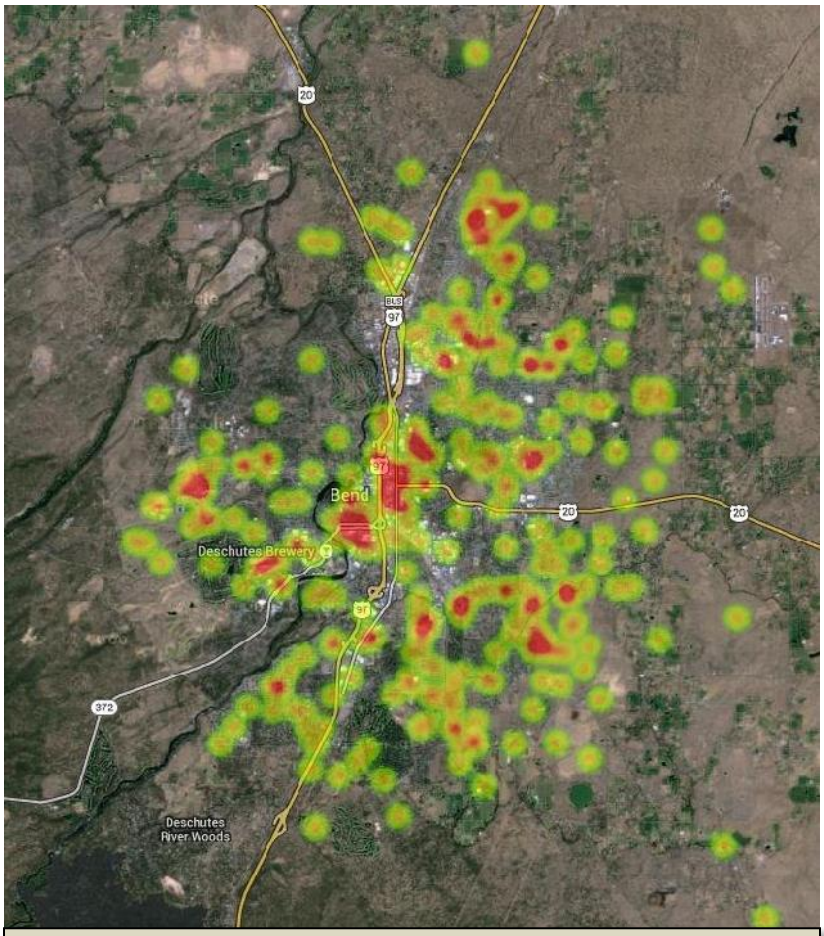


Figure 7. Neighborhood Retail Centers Map

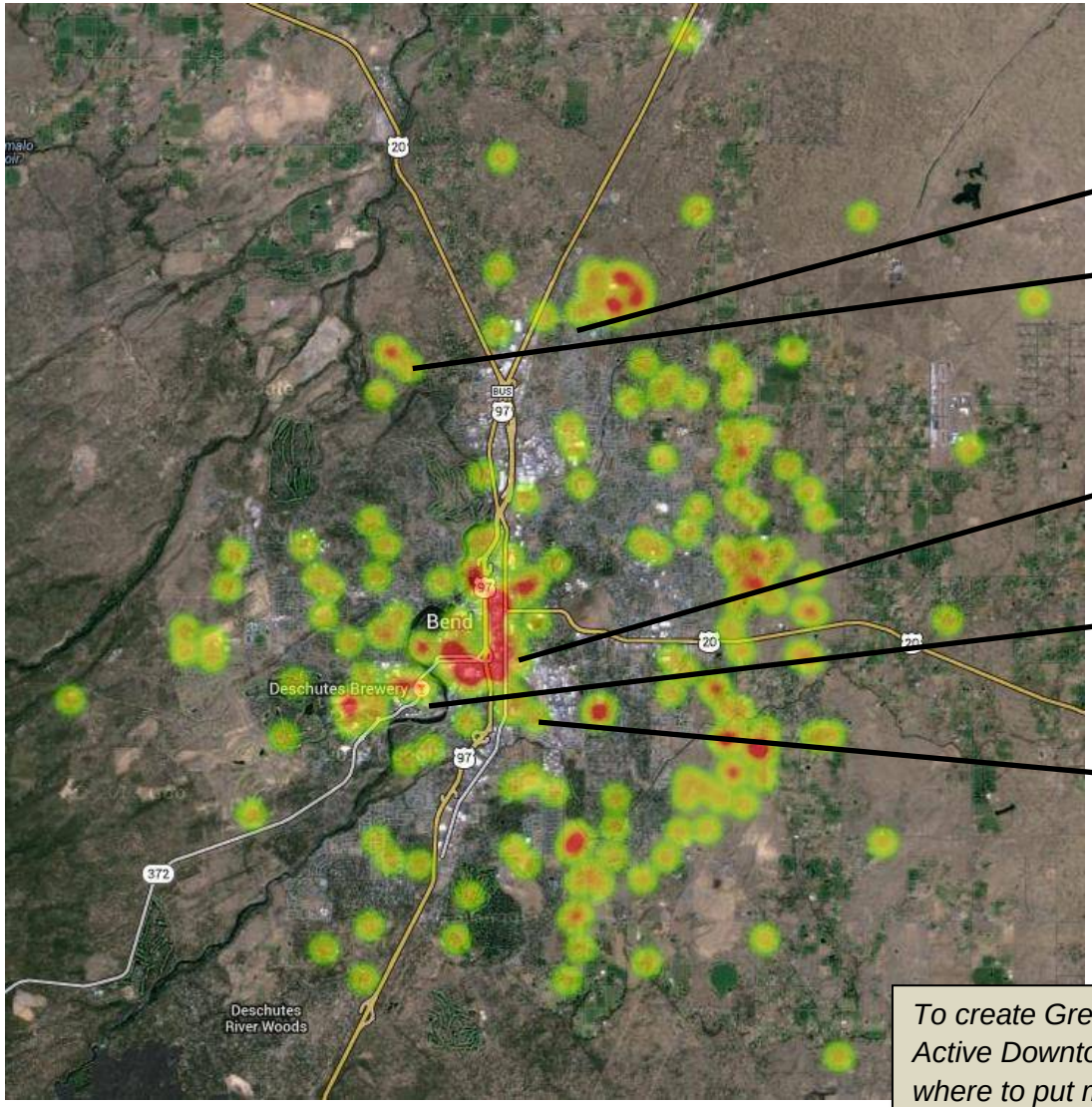


To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

SHOPPING – Small Neighborhood Centers

Housing. The following pages contain heatmaps and more detailed maps related to housing.

Figure 8.Residential Mixed Use Heat Map



Live/Work Units

Ensure housing diversity

Improve urban form of 3rd Street corridor

Infill and Mixed Use on Transit Corridors

More development in eastside neighborhoods

Figure 9.Residential – Single Family

To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

HOUSING – Mixed Use

Develop Juniper Ridge

Maintain Integrity of Existing Neighborhood

Large Lot Housing

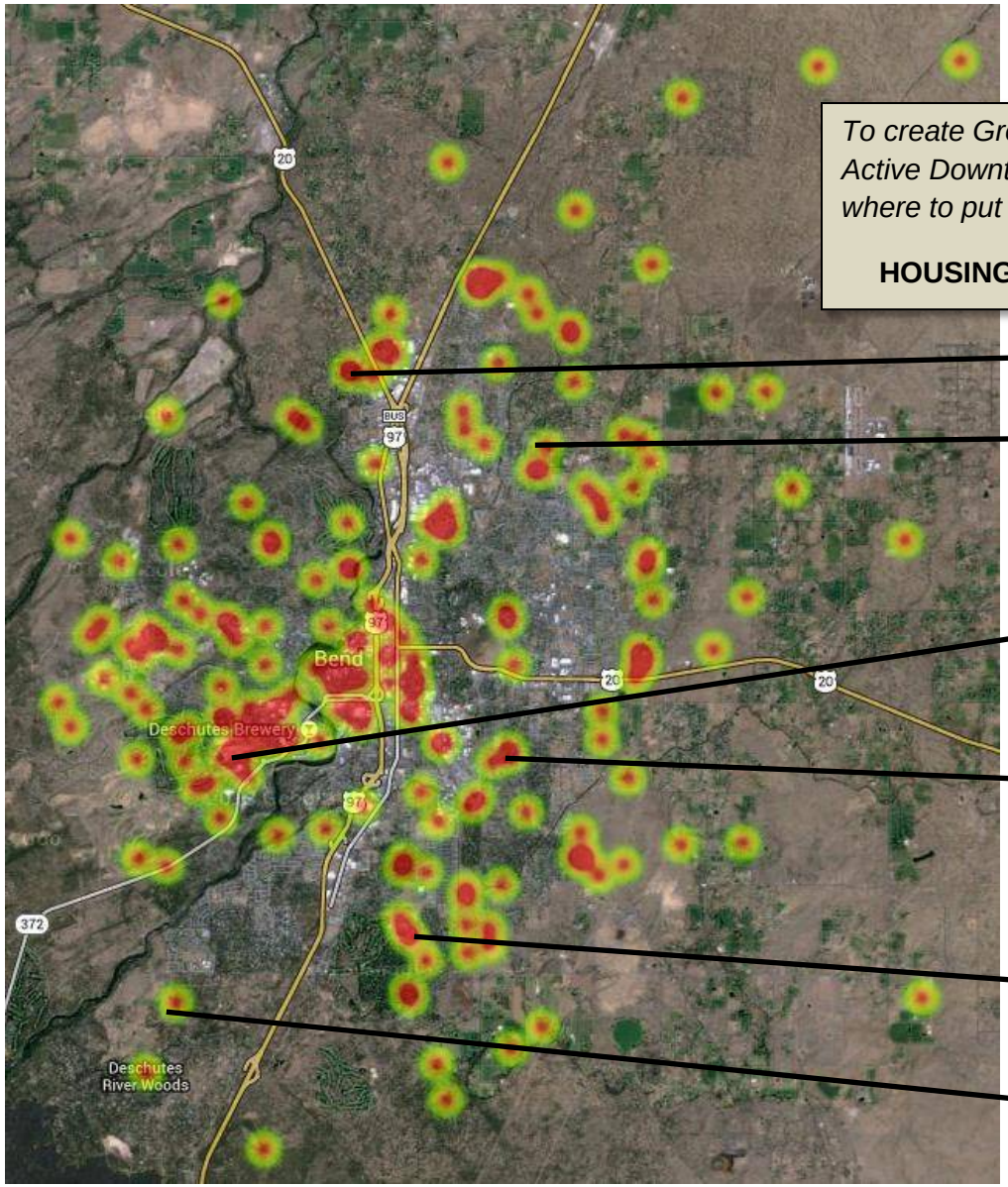
Large Lot (1/2 Acre Plus)

Large Lot

To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

HOUSING – Single Family

Figure 10. Townhomes, 2- 3- and 4-plex, Apartments

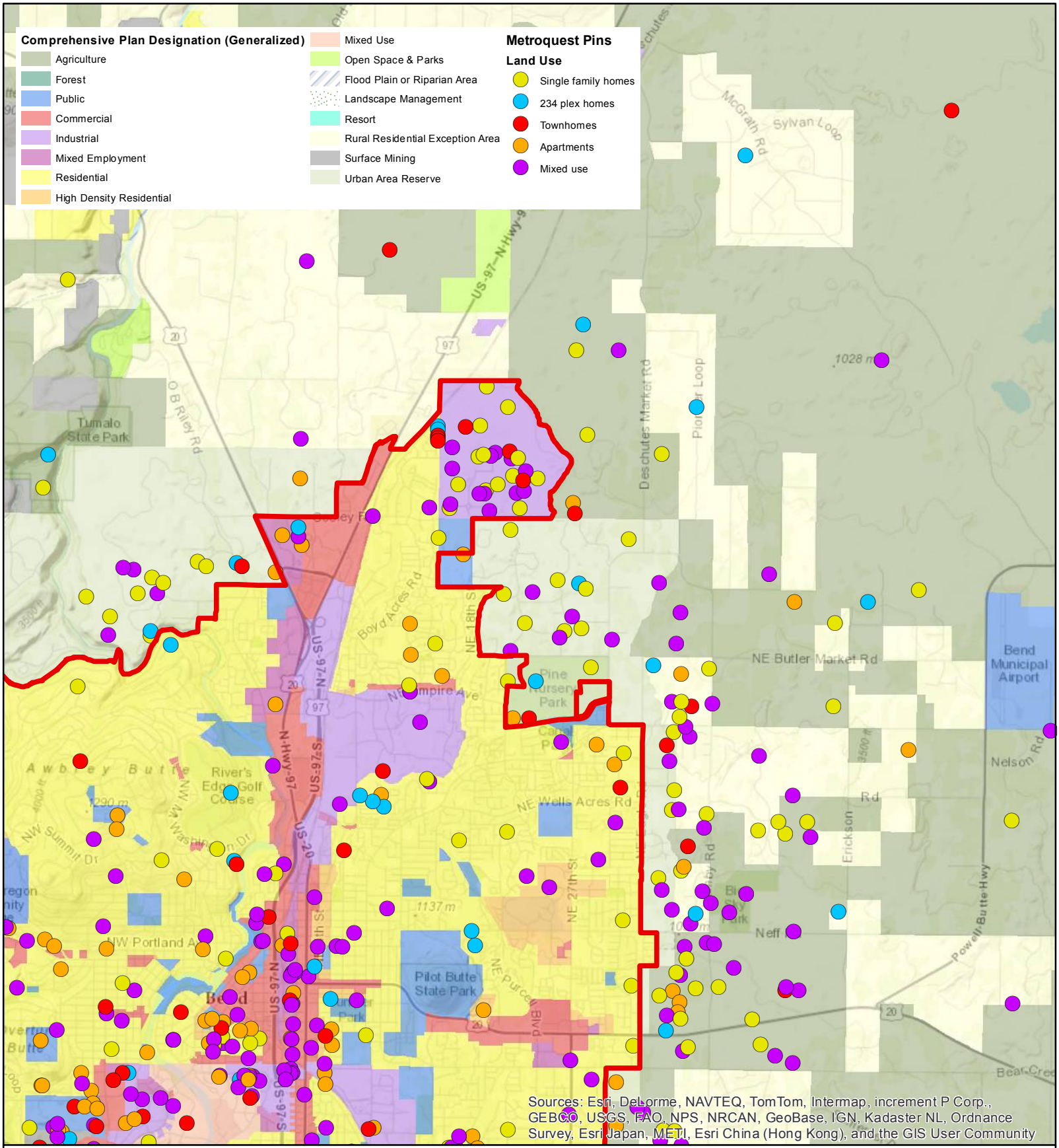


To create Great Neighborhoods, Housing Options, a Strong Active Downtown, and a Strong Diverse Economy, tell us where to put more:

HOUSING – Townhomes, 2- 3- and 4-plex, Apartments

- Density near retail
- Affordable Housing
- Affordable Housing for students and others
- Senior Housing
- Affordable Housing
- Mix of housing south of RiverRim

MetroQuest Map Pins: Land Use



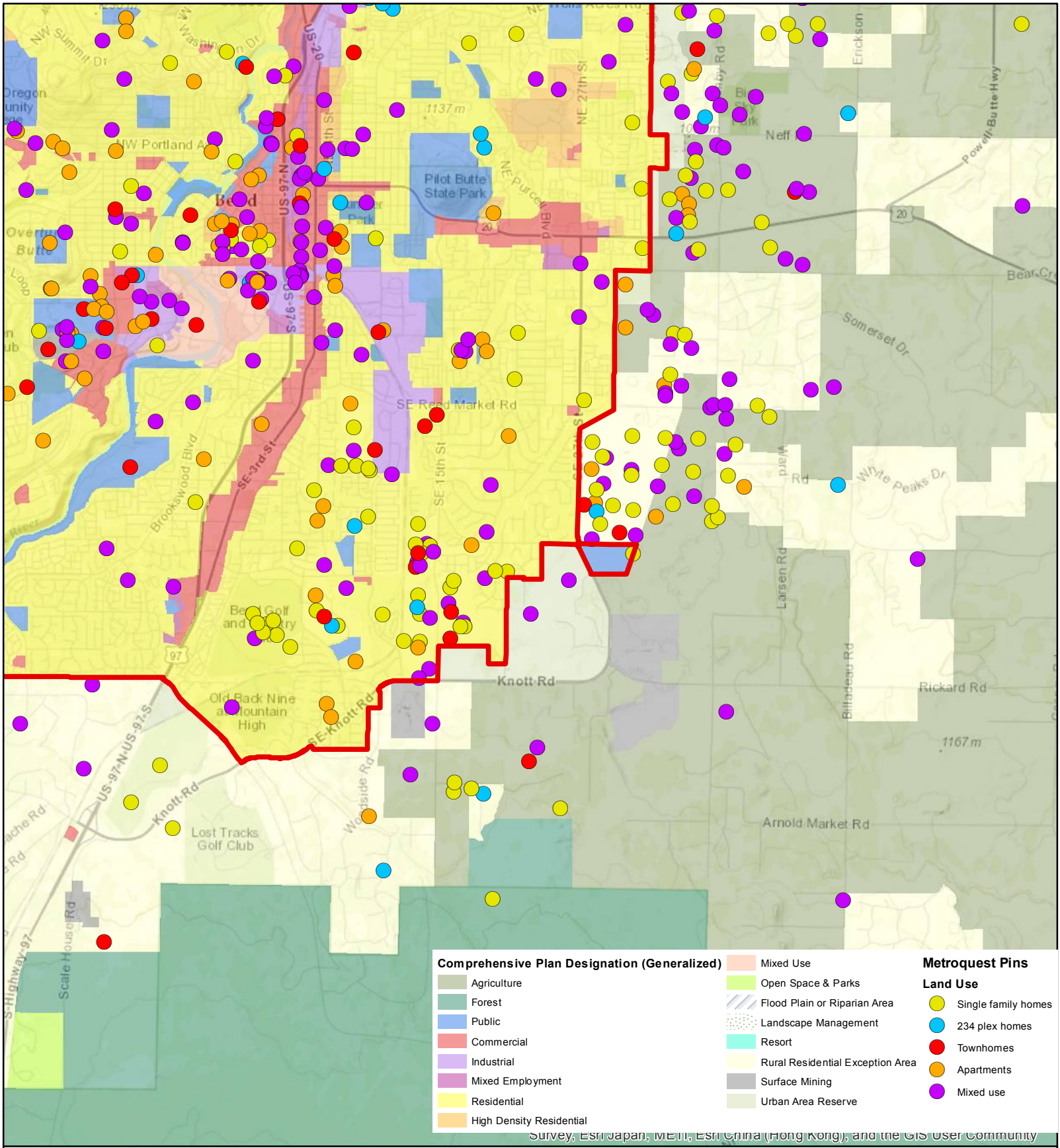
URBAN GROWTH BOUNDARY REMAND

NORTH

Prepared 10/30/2014

0 0.5 1 2 Miles

MetroQuest Map Pins: Land Use



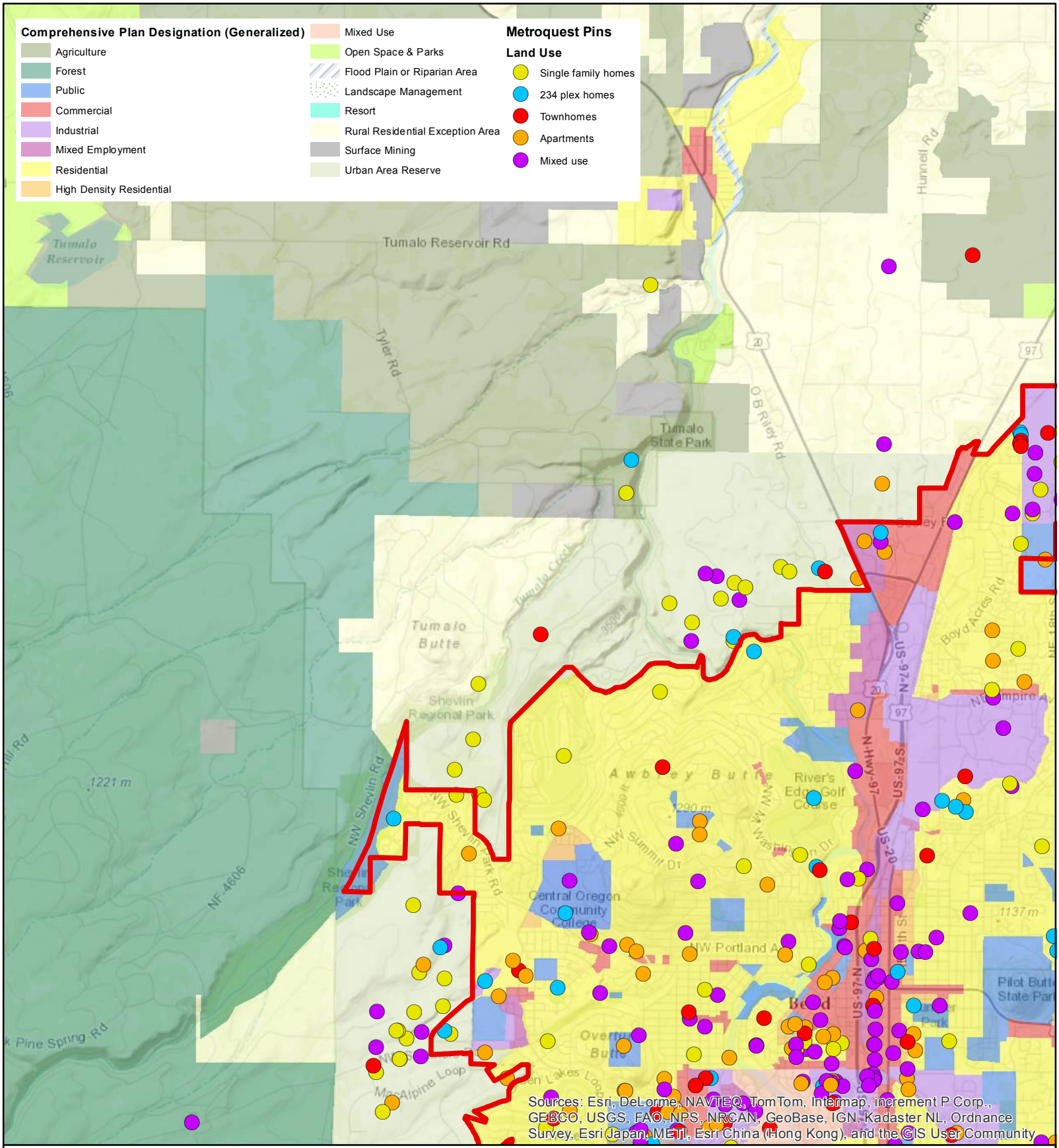
URBAN GROWTH BOUNDARY REMAND

NORTH

Prepared 10/30/2014

0 0.5 1 2 Miles

MetroQuest Map Pins: Land Use



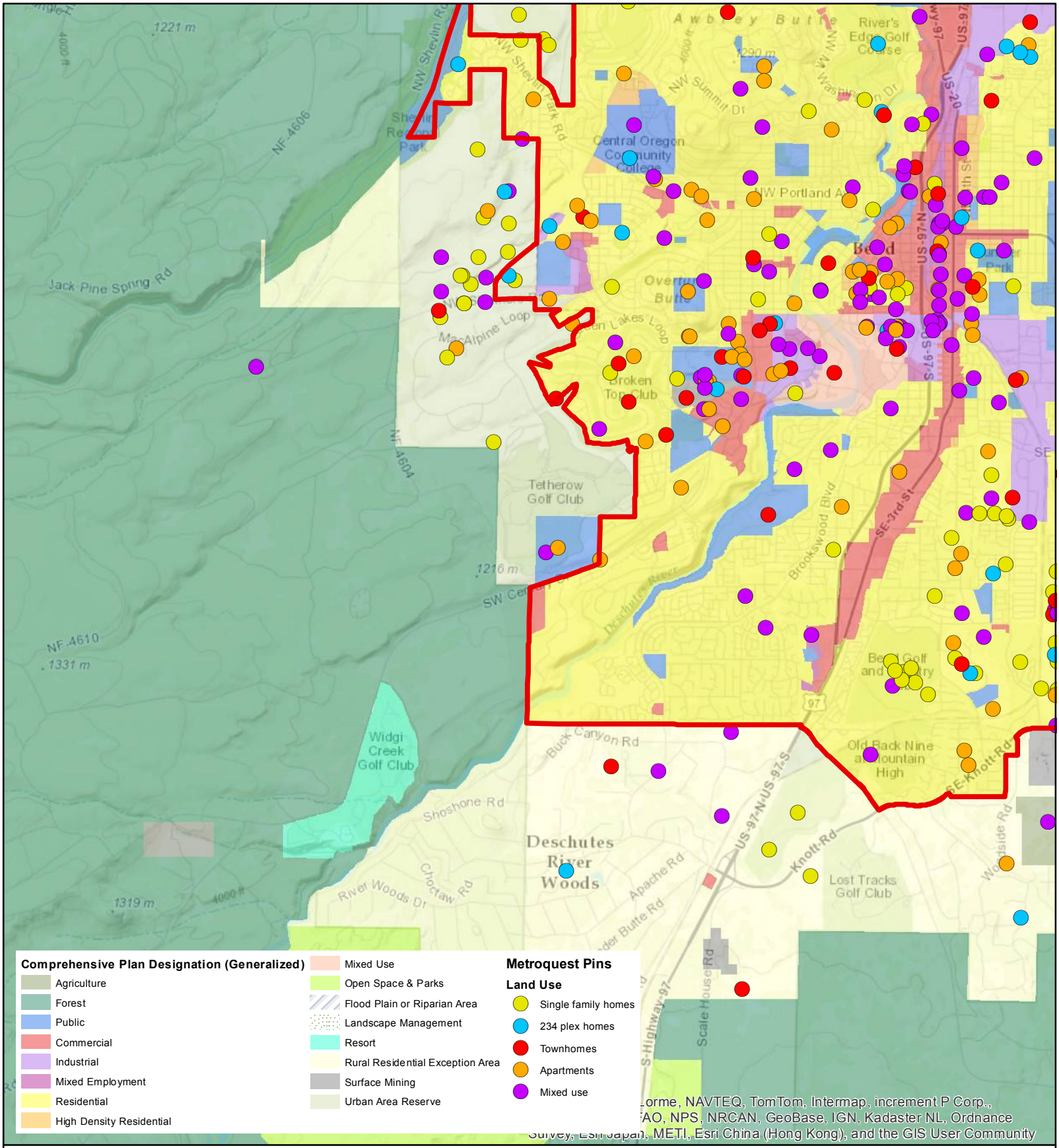
URBAN GROWTH BOUNDARY REMAND

NORTH

Prepared 10/30/2014

0 0.5 1 2 Miles

MetroQuest Map Pins: Land Use



URBAN GROWTH BOUNDARY REMAND

NORTH

Prepared 10/30/2014

0 0.5 1 2 Miles

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Current UGB Workshop

Small Group Instructions

GROUND RULES AND GUIDELINES

1. Focus on big picture outcomes and urban form concepts. The urban form diagram and chips are general and conceptual; they are not intended to be precise and highly site-specific.
2. Don't dwell on details. Rather, note details and comments that the team needs to consider, so the group's time is focused on the larger questions.
3. If the group is in agreement, note it and move on.
4. Alternatives are good – if you see two or more reasonable ideas for an area, it's okay to capture all options that your group would like to see tested.
5. Think long term: 20+ years. Group discussions should recognize the Remand planning period (through the year 2028), but not be constrained by it. How much growth a given area might accommodate through 2028 will be addressed in the evaluation.
6. Have fun!

STEP BY STEP INSTRUCTIONS

Getting started

Are there any questions on the instructions or urban form types? The facilitator or one of the resource people will help.

Key Opportunity Areas

There are five key redevelopment areas that were identified by the Employment TAC and four key large vacant opportunity sites discussed by the Employment and/or Residential TACs. A summary of the current conditions and TAC thinking to date for each of these areas is included in the opportunity sites comment log table.

For each area, the group should do the following:

1) The facilitator will briefly summarize the TAC's recommendation or direction to date and place the relevant chip on the map (without sticking it down).
2) The group should discuss whether to support the TAC recommendation, or whether there is a different idea that ought to be tested instead of, or in addition to, the TAC recommendation.
3) Once the group has reached consensus, place the chip on the map that best represents the group's desired urban form ideas for the area in question.
4) Consider whether the area is a high-priority to become more pedestrian- or transit-oriented. If so, place a pedestrian or transit sticker, as appropriate.
5) Note any refinements or additional comments with notes in the edges of the map and/or notes in the table provided.

Other Areas

The Residential and Employment TACs have discussed many additional areas beyond those highlighted in the first exercise, but the remainder were relatively small, did not have potential for major changes in urban form, were already approved projects, or were otherwise special situations (e.g. Galveston Street as an emerging mixed use Local Corridor). The TACs have not discussed specific strategies and locations for directing infill and redevelopment to support transit, mixed use centers, and employment districts.

Discussion question: **Are there any other employment districts, commercial centers and corridors, or residential neighborhoods where you would like to suggest a different future urban form (i.e. something different from the base case), or that you think are a high-priority to become more pedestrian- or transit-oriented?** You may also add notes or refinements to the base case urban form. Consider the following:

- Lands within ¼ mile of transit corridors
- Lands within ¼ mile of mixed use centers
- Lands within ½ mile of employment districts

Note that in the base case (i.e. absent any rezoning or new code standards), infill growth in developed residential areas will be estimated under the existing zones based on observed trends. The question for these areas in the workshop is: Should some of these areas be tested for something different than the base case – e.g. more housing or mixed use in support of urban form objectives and the project goals?

Wrap up and post the map

Paste up any loose chips, annotate the map with the group's number and facilitator name, and hang it up in the gallery.

BEND URBAN FORM DIAGRAM

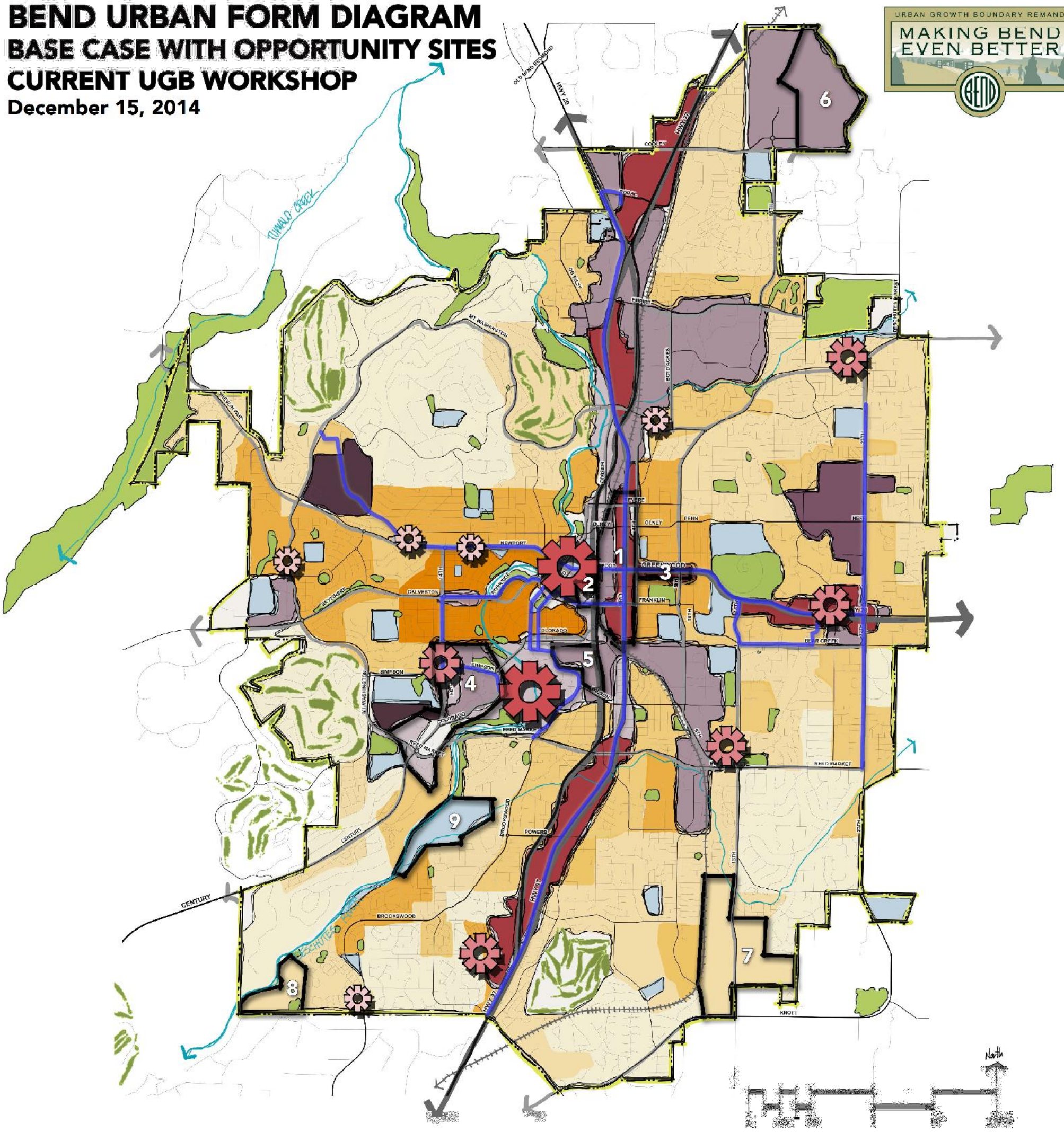
BASE CASE WITH OPPORTUNITY SITES

CURRENT UGB WORKSHOP

December 15, 2014

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space
- Primary Transit Corridors

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot

Opportunity Sites

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

CHIP MENU

Bend Urban Growth Boundary Remand December 15, 2014 Workshop

EMPLOYMENT DISTRICTS

Institutional

Map:

Chip:

INST

Typical Uses

- Employment: educational institutions and related facilities
- Residential: student housing
- Open space

Transportation Characteristics

- Generally pedestrian-oriented, with concentrations of off-street parking areas
- Transit supportive/transit dependent

Density & Scale

- Varies; generally 2-8 story buildings
- Low to medium job density

Typical Plan Designations

- Public Facilities (PF)

Medical Center

Map:

Chip:

MC

Typical Uses

- Employment: hospitals, medical offices, and related facilities
- Residential: group homes with some multi-family

Density & Scale

- Generally 1-6 story buildings
- High job density

Transportation Characteristics

- Generally pedestrian-oriented core with large peripheral parking areas
- Transit supportive; transit access important

Typical Plan Designations

- Medical District Overlay Zone (not a plan designation)

Industrial/Professional Office

Map:

Chip:

I/PO

Typical Uses

- Employment: manufacturing, industrial, and office
- Residential: limited, some live/work space

Density & Scale

- Generally 1-3 story buildings
- Generally low job density with some pockets of higher density

Transportation Characteristics

- Generally auto-oriented with large parking areas
- Streets oriented for freight and truck traffic
- Limited transit; transit access not usually a priority

Typical Plan Designations

- General Industrial (IG), Light Industrial (IL), Mixed Employment (ME)

Mixed Employment

Map:

Chip:

ME

Typical Uses

- Employment: office, retail/services, manufacturing, and industrial (often “creative” and flexible work space)
- Residential: minimal, but generally multi-family

Density & Scale

- Generally 1-3 story buildings
- Job density varies

Transportation Characteristics

- Varies; may have both auto-oriented and pedestrian-oriented areas
- May be transit supportive in some cases; transit access not usually a priority

Typical Plan Designations

- Mixed Employment District (ME), Mixed-Use Riverfront District (MR), Light Industrial (IL)

CHIP MENU

Bend Urban Growth Boundary Remand December 15, 2014 Workshop

COMMERCIAL CENTERS & CORRIDORS

Major Commercial Corridors

Map:

Chip: MCC

Typical Uses

- Employment: large retailers/wholesalers, shopping malls, hotel/hospitality, some office; businesses typically depend on high visibility and auto access
- Residential: little or none

Density & Scale

- Generally 1-2 story buildings Moderate job densities

Transportation Characteristics

- Generally auto-oriented with access to major arterial streets or highways
- May be transit supportive in some cases; transit access not usually a priority

Typical Plan Designations

- General Commercial (CG), Limited Commercial (CL)

Urban Mixed Use Centers and Corridors

Map:

Chip: MU

Typical Uses

- Employment: retail, services, hospitality, office
- Residential: multi-family, townhomes, and apartments/condos over retail

Density & Scale

- Generally 1-5 story buildings
- Relatively high job and housing density

Transportation Characteristics

- Typically pedestrian-oriented with good connectivity
- Transit-supportive; transit access desirable

Typical Plan Designations

- Mixed-Use Riverfront District (MR), Central Business District (CB), or new/refined plan designations & zones

Community Commercial Centers

Map:

Chip: CC

Typical Uses

- Employment: retail, services, office
- Residential: limited, but generally multi-family

Density & Scale

- Generally 1-2 story buildings
- Moderate job density

Transportation Characteristics

- Varies; may have both auto-oriented and pedestrian-oriented areas
- May be transit supportive; transit access desirable

Typical Plan Designations

- General Commercial (CG), Limited Commercial (CL), Convenience Commercial (CC)

Local Commercial Centers & Corridors

Map:

Chip: LC

Typical Uses

- Employment: small-scale retail, services, office
- Residential: some single family residential or second story residential

Density & Scale

- Generally 1-2 story buildings
- Moderate job densities

Transportation Characteristics

- Primarily pedestrian-oriented, with access to collector streets
- Generally transit supportive; transit access not usually a priority

Typical Plan Designations

- Limited Commercial (CL), Convenience Commercial (CC)

CHIP MENU

RESIDENTIAL NEIGHBORHOODS

Bend Urban Growth Boundary Remand December 15, 2014 Workshop

Historic Neighborhoods

Map:

Chip: HN

Typical Uses

- Employment: limited small-scale service or office within the neighborhood; generally close to employment areas
- Residential: largely small-lot single family homes, some small apartments and townhomes

Density & Scale

- Generally 1-2 story homes
- Moderate residential density

Transportation Characteristics

- Typically grid pattern of local streets with good connectivity
- Fairly transit-supportive

Typical Plan Designations

- Standard Density Residential (RS), Medium Density Residential (RM)

Traditional Neighborhoods

Map:

Chip: TN

Typical Uses

- Employment: limited small-scale service or office within the neighborhood; generally close to employment areas
- Residential: detached single family homes with small to medium lot sizes, some duplex/ triplexes, townhomes and small apartment complexes

Density & Scale

- Generally 1-2 story homes
- Low to moderate residential densities

Transportation Characteristics

- Typically grid pattern of local streets with good connectivity
- Somewhat transit-supportive

Typical Plan Designations

- Standard Density Residential (RS), Medium Density Residential (RM)

Mixed Suburban Neighborhood

Map:

Chip: MS

Typical Uses

- Employment: limited; generally small-scale service or office
- Residential: detached single family homes with medium to large lot sizes, some apartment complexes, and townhomes

Density & Scale

- Generally 1-2 story homes
- Moderate residential densities

Transportation Characteristics

- Limited connectivity with culs-de-sac, non-through streets or winding streets
- May be transit-supportive at higher end of density range

Typical Plan Designations

- Standard Density Residential (RS), Medium Density Residential (RM), High Density Residential (RH)

CHIP MENU

RESIDENTIAL NEIGHBORHOODS

Bend Urban Growth Boundary Remand December 15, 2014 Workshop

Single Family Suburban Neighborhood

Map:

Chip: SFS

Typical Uses

- Employment: None
- Residential: medium- to large-lot single family homes

Density & Scale

- Generally 1-2 story homes
- Low residential density

Transportation Characteristics

- Limited connectivity with culs-de-sac, non-through streets or winding streets
- Not transit-supportive

Typical Plan Designations

- Standard Density Residential (RS)

Large Lot Neighborhood

Map:

Chip: LL

Typical Uses

- Employment: None
- Residential: large-lot single family homes, acreages or ranchettes

Density & Scale

- Generally 1-2 story homes
- Very low residential densities

Transportation Characteristics

- Limited connectivity, winding local streets with private drives or secluded winding driveways
- Not transit-supportive

Typical Plan Designations

- Standard Density Residential (RS), Low Density Residential (RL)

Open-Space Neighborhood

Map:

Chip: OSN

Typical Uses

- Employment: mostly recreation-based (golf courses and recreational amenities)
- Residential: small- to large-lot single family homes and/or cottage housing with large areas of preserved open space

Density & Scale

- Generally 1-2 story homes
- Low gross residential densities, but may have high net residential densities due to clustering

Transportation Characteristics

- Typically winding streets with limited connectivity
- Generally not transit-supportive

Typical Plan Designations

- Standard Density Residential (RS), Low Density Residential (RL)

CHIP MENU

Bend Urban Growth Boundary Remand December 15, 2014 Workshop

PEDESTRIAN- & TRANSIT-ORIENTED PRIORITY AREAS

Pedestrian-Oriented Areas

Typical Building & Site Design Features

- Buildings close to the street
- Windows and doors facing the street
- Parking areas located behind or beside buildings (not in front)
- May include outdoor seating areas along the sidewalk

Typical Street Design Features

- On-street parking
- Street trees in wells / landscape strips
- Wide sidewalks
- Pedestrian-scale street lights
- May include benches
- May include awnings or other weather protection
- Blocks no larger than 400’
- Good local street connectivity
- May include alleys, especially in residential areas

Transit-Oriented Areas

Typical Building & Site Design Features

- Buildings close to transit street
- Windows and doors facing transit street
- Parking areas not located between transit street and building
- Safe, convenient & direct pedestrian walkways connecting to transit stops or sidewalks
- Transit-supportive densities and land uses (e.g. residential densities of 12+ units per acre; employment uses that have high job densities, such as offices; and customer-oriented businesses, such as retailers, restaurants, banks, and medical offices)

Typical Street Design Features

- Good local street connectivity to transit street
- May provide shelters, seating, or other dedicated space for the transit stop

KEY OPPORTUNITY AREAS

Map ID	Area Name & old ID #	Scale/ Size	Existing Conditions	Base Case Urban Form & Current Plan Designations	Opportunities Identified by TAC	Working Recommendation for Future Urban Form	Potential Strategies	Table Recommendation & Ideas
1.	Central 3rd Street (Redev. Area #3)	~135 ac	Commercial / Mixed Employment (Retail, lodging & food, services, other commercial, health care, industrial / manufacturing) This is an emerging hot location in Bend. Appears to have sewer capacity and electrical capacity. Recent planning project – Multi-modal Mixed Use Area About 5 acres vacant.	Major Commercial Corridor & Industrial / Professional Office Employment District CL & ME plan designations	Good for more mixed use and employment, additional retail, additional residential component, as planned within the Bend Central District Multimodal Mixed-Use Area Project.	Urban Mixed-Use Corridor MU	Multi-modal investments and improvements supporting mixed use and pedestrian character. Improved bike/ped/parking to facilitate additional mixed use development. Upzoning or more flexible uses and development standards would be an incentive.	
2.	East Downtown (Redev. Area #4)	13 ac	Commercial (Services, health care & other commercial) Walkable today Current zoning and parcelization does not allow economics to work in favor of redevelopment Very little vacant land.	Mixed Employment District CG plan designation	Has potential to become part of the downtown central business district core and an extension of this regional center	Urban Mixed-Use Center (The area would be planned as part of the downtown.) MU	More intensive zoning designation may be required to incentivize redevelopment. Invest to further enhance walkability. Consider upzoning to CB and extend the CBD to the tracks/parkway.	
3.	Central Hwy 20 (Redev. Area #5)	12 ac	Commercial (retail / services / healthcare / lodging & food Area is emerging with more places to eat. Little or no vacant land	Major Commercial Corridor + Community Commercial Center (auto-oriented) mostly CC, a little CL plan designations	Could support a greater mix of retail, or small scale, mixed use serving the adjacent neighborhoods and larger community. Additional entertainment, restaurants, etc would be good.	Major Commercial Corridor + Community Commercial Center (pedestrian-oriented) MCC CC	Enhance pedestrian environment and local-serving role to adjacent neighborhoods.	

Current UGB Workshop

Map ID	Area Name & old ID #	Scale/ Size	Existing Conditions	Base Case Urban Form & Current Plan Designations	Opportunities Identified by TAC	Working Recommendation for Future Urban Form	Potential Strategies	Table Recommendation & Ideas
4.	SW Century Drive (Redev. Area #8)	~220 ac	Mixed employment (Services, healthcare, manufacturing, industrial, lodging & food, retail, and other commercial) About 30 acres vacant land remaining	14th Street: Community Commercial center & Local Commercial corridor Other areas: Industrial / Professional Office Employment District; Mixed Employment District Plan designations include CL, IL, CG, CC, and ME	With siting of OSU consider more mixed use emphasis with strong influence of uses to serve the university, housing, retail, entertainment, etc.	14th Street: Community Commercial center & Local Commercial corridor CC LC Other areas: Mixed Employment District ME	Commercial designations are OK, but industrial, surface mining, and public facility designations may be in conflict with market. Mixed use will require investments for all modes and focus on key pedestrian streets and nodes. Major urban form considerations depend on long-term master planning and sub-area planning project, and legal challenges.	
5.	Mill District / Core Pine site and area (Redev. Area # 9)	14 ac	Industrial (Manufacturing, other commercial, industrial, services) Large property close in. Current industrial use is not a good fit for surrounding uses. No vacant land.	Industrial/Professional Office Employment District IG plan designation	Big redevelopment opportunity. Consider moving the industrial uses to another location and creating a new mixed use, multi-story, retail, office, housing, entertainment district.	Mixed Employment District ME	Mixed use or some type of non-heavy industrial designation would be the more appropriate plan designations. Mixed use will require investments for all modes and focus on key pedestrian streets and nodes.	

Current UGB Workshop

Map ID	Area Name & old ID #	Scale/ Size	Existing Conditions	Base Case Urban Form & Current Plan Designations	Opportunities Identified by TAC	Working Recommendation for Future Urban Form	Potential Strategies	Table Recommendation & Ideas
6.	Juniper Ridge east (Res. Opp. Site NE-7)	~200 acres	This eastern area is currently vacant. TSP doesn't include transportation facilities needed to serve this part of Juniper Ridge.	Industrial/Professional Office Employment District IL plan designation, zoned UAR10 (not part of special employment overlay zone)	TAC discussed the following as options for the area, with more information need on geologic and infrastructure issues. Opportunity to provide housing opportunities adjacent to employment. Opportunity for affordable housing development - potentially as part of a corporate campus Opportunity for mixed use town center Regional economic development opportunity	Not determined. Option proposed for testing: two traditional neighborhoods, per Juniper Ridge Master Plan, inclusive of a locally serving town center. TN LC	Change plan designation to mixed use or residential with master plan requirement If residential uses are included, ensure future development provides a mix of housing types and makes efficient use of residential land.	
7.	SE 15th Street / JL Ward Co properties (Res. Opp. Site SE-1)	~330 acres	Currently vacant. While access is currently limited by the railroad, a new road connection is planned that will improve access and connectivity for this area. The area does not currently have sewer service, but the southeast intercept is planned to serve the area by the end of 2017. In addition, a new school is planned in the area.	Suburban Neighborhood – Single Family Housing RS plan designation	Opportunity to create a new complete neighborhood that considers clustering housing around green space and strong pedestrian and bicycle connections throughout development	Master planned new Traditional Neighborhood TN	Re-designate to RM or a mix of RM and RS, or a higher-density version of RS Allow / require inclusion of a neighborhood center	

Current UGB Workshop

Map ID	Area Name & old ID #	Scale/ Size	Existing Conditions	Base Case Urban Form & Current Plan Designations	Opportunities Identified by TAC	Working Recommendation for Future Urban Form	Potential Strategies	Table Recommendation & Ideas
8.	River edge / Thompson properties (Res. Opp. Site SW-1)	80 acres	Currently vacant. Two parcels are under common ownership and adjacent to the river. The land is on the edge of the UGB; the adjacent land outside the UGB is exception land. There are single family subdivisions to the east. They are just over a half-mile from transit. Road access is currently limited to the private streets of the adjacent River Rim PUD. Much of the land also falls within the River Corridor Area of Special Interest (ASI) and an Upland ASI. Topographic constraints on far southwest portion. Water & sewer availability issues.	Single Family Suburban Neighborhood RS plan designation	Open space on southern portion; single-family development on buildable portion.	Open Space Neighborhood 	Enhance master planning requirements Density bonuses for open space preservation & public river access	
9.	COID property (Res. Opp. Site SW-4)	130 acres	These parcels are owned by the Central Oregon Irrigation District (COID). Portions of the land are steeply sloped and/or within the 100-year floodplain. A canal and power lines run through the middle of the site. View easements to Mt. Bachelor Village on a portion of the site. The site is close to transit and a school but has limited access to neighborhood-serving retail or services. The COID has expressed an interest in using the land for other purposes, potentially including residential and mixed use development. About 50 acres estimated to be buildable	Single Family Suburban Neighborhood The plan designation is Public Facilities (PF), and zone is RL and RS.	Part of the site could be redeveloped for residential uses. Consider open space along for sensitive areas/irrigation facility locations.	Open Space Neighborhood 	Redevelopment would likely require piping and protection of critical irrigation district infrastructure. Re-designate buildable portion to a mix of RM and RS	

OTHER LOCATIONS

Map ID	Recommended Future Urban Form	Comments
10.		
11.		
12.		
13.		
14.		

Current UGB Workshop

Map ID	Recommended Future Urban Form	Comments
15.		
16.		
17.		
18.		
19.		
20.		

URBAN GROWTH BOUNDARY REMAND

Sign in Sheet

Meeting: UGB BOUNDARY TAC # 5

Date: 12 - 16 - 2014

Location: BARNES / SAWYER

Name	Organization	Email Address
~~Melanie~~		
CINDY EVEREST	COAR Res. TAC	
TOBY BAYARD	SELE - BEND UGB BOUNDARY TAC	
Dale VanVuttery	Brooks Resource	
Ken Rieck	TUMALO ID	Ken@TUMALO.org
Ron Ross		rross@compassscommercial.com
Scott Jackson	Land Owner	jackson@countrycablevision.net
Scott Edelman	DLCD	
Jim BRYANT	ODOT	
ROD Tomcito		
Ruth Williamson	Bend 2030	ruthw@bendcable.com
Sid Snyder	RL TAC	
ROCKIANA DUNN	PLANNING COM.	
Steve Hultberg	TAC	
Suzanne Butterfield	Swalley ID	SUzanne@Swalley.com
Brian Litt	TAC	

City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting Notes
Date: December 16, 2015

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday, December 16, 2014 in the Barnes/Sawyer Room of the Deschutes Services Building (1300 NW Wall Street, Bend). The meeting was called to order at 10:05 am by Brian Rankin.

Members Attending

- ☐ Toby Bayard
- ☐ Jim Bryant
- ☐ Paul Dewey
- ☐ Rockland Dunn
- ☐ Scott Edelman
- ☐ Ellen Grover
- ☐ Steve Hultberg
- ☐ Nick Lelack
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Dale Van Valkenburg
- ☐ Peter Werner
- ☐ Bruce White
- ☐ Ruth Williamson

Discussion

1. Welcome.

Brian opened the meeting at 10:05 am. Sid Snyder of the Residential TAC gave his brief recap of the joint Residential TAC/Employment TAC/USC workshop on Monday December 15, 2014. Gary Everett also provide some additional comments on the workshop.

Sharon asked the TAC to review the October and November meeting minutes. TAC members provided following comments on these minutes: incorporate text of recommendations acted on by TAC in minutes and reiterate motions in minutes. Sharon recommended that adoption of the October and November minutes be deferred to the next meeting.

In addition to the minutes, several TAC members requested that the 2009 record of the prior UGB proceedings be uploaded to the City's website.

Before moving to the next item, the TAC received short reports from liaisons from the Residential and the Employment TACs.

2. Preview of Stage 2 base mapping for Factor 1

Mary Dorman of the APG Team introduced this topic, and referred the TAC to page 24 of the packet[1]. The packet for this meeting included pdf copies of several maps presented to the TAC: 1) Priority 2 Exception Land Parcel Size; 2) Improvement to Land Value Ratio; 3) Exception Land – Distance from UGB; 4) Topography – Slopes 25% or Greater, and; 5) Subdivisions with known CC&Rs.

The TAC members present asked a number of questions related to the use of this data for Stage 2 base-mapping, including:

[1] Four maps were also presented that are now available in pdf form through the City's website: http://www.bendoregon.gov/index.aspx?page=52&parent=19718.

- Clarification of the topics mapped (e.g. land/improvement ratio)
- Consistency between maps (e.g. exceptions identified consistently)
- The use of a 25% slope versus a lesser or greater slope
- The subdivisions with CC&Rs and whether all lots with restrictive CCRs were correctly identified.

After this discussion, Sharon asked for a motion to the two questions posed on page 11 of the packet (page 3 of 15), which are incorporated below:

Questions for the TAC:
1. Do the preliminary base maps in Appendix A adequately reflect the Factor 1 indicators approved by the TAC at the November meeting?
2. Can the TAC provide suggestions on how and when it would be appropriate to obtain additional supporting data on CC&Rs for rural subdivisions in the Study Area?

Sharon moved, Steve seconded. The vote was unanimous in support of these questions.

3. Legal and Planning Context for Factor 2 (Orderly and Economic Facilities)

This was an information item. Mary Dorman provided a brief report to the TAC.

4. Recommended criteria/measures for Factor 2

Brian and Mary Dorman provided an introduction to this agenda item for the TAC. They directed the TAC to page 15 of the TAC packet (Page 15 of 40) with the focus of the discussion today on water, sewer, stormwater, and transportation. They also referred the TAC to several maps on display at the meeting that were then referred to by several presenters.

Transportation. Chris Maciejewski of DKS and Associates presented a transportation map for Bend and the study are that identified barriers, existing bottlenecks, and system connectivity. The questions and discussion around this map and its use included congestion, transportation projects planned in the next five years, the use of the Envision Tool for evaluating transportation, the use of the ODOT travel demand model.

Brian then asked the TAC if there was agreement on the principles presented on page 15 of the packet with respect to transportation, with Sharon further confirming direction.

Questions for the TAC:
1. Does the TAC support the proposed principles for the consideration of "orderly and economic provision of transportation facilities" under Factor 2?
2. Does the TAC support the key indicators used for the transportation principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision and Transportation Demand Models)?

Rod moved, _____ seconded TAC agreement on the transportation principles. The TAC concurred with the general principles for transportation on page 15. Brian committed to bringing back more details on how this analysis would be used later in the process.

Water/Sewer/Stormwater. Tom Hickmann gave presentations on each map presented for water, sewer collection, and stormwater.

Water – Tom referred the TAC to the UGB Expansion: Water Analysis map. The map shows the two-mile study area boundary, with areas colored in brown as those the City of Bend can serve. City can use gravity to provide water to those areas in brown. Areas to the north, east, and southeast of Bend are in Avion's territory. Areas to the south of Bend include those served by the Agate, Avion, and Roats Water companies. The TAC's discussion with respect to this map addressed coordination with these other utilities, and finding out their respective priorities: what they can and can't serve, whether gravity is important, and their respective business plans.

Stormwater – Tom referred the TAC to the UGB Expansion Soils Infiltration map. The TAC's discussion here focused on whether the City is required per the Clean Water Act to have a stormwater collection and treatement system; Tom confirmed the City is not required the CWA to do this. TAC also requested that colors used to identify different areas on this map use a color scheme consistent with those used on other maps.

Sewer – Tom referred the TAC to the "Excess Dry Weather Flow at Full Build-out of the Existing UGB with Implementation of all CSMP Improvements" map. The areas show in tan are those can be served with gravity sewer; blue areas require pumping to conveyance. Green areas can pump directly to the water reclamation facility (WRF). The collection system has excess capacity to serve another 2,100 people after buildout with the current system. A storage element in the collection system is not included here, but can be included in Stage 4. TAC members asked for clarification on which areas can be served by gravity and which would require regional pumping stations. Areas in blue would require investment beyond the investment needed to serve those areas in brown.

Sharon recommended that Item no. 5 on the agenda be deferred to the next meeting.

Public Comment: Suzanne Butterfield of the Swalley Irrigation District requested that the City coordinate with the four irrigation districts with facilities and patrons inside and outside the boundary.

Sharon adjourned the meeting at 12:25 pm.

Action Items/Next Steps

Action	Assigned To

Meeting Agenda

Urban Growth Boundary Technical Advisory Committee – Meeting 5
Tuesday, December 16, 2014 10:00 AM – 12:30 PM
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Review and approve Stage 2 Base Maps for Goal 14, Factor 1 (Efficient Accommodation of Identified Land Needs)
- Review and approve criteria/measures for Goal 14, Factor 2 (Orderly & Economic Provision of Public Facilities)
- If time is available, review and approve criteria/measures for Goal 14, Factor 4 (Compatibility with Activities on Resource Lands Outside the UGB)

The specific discussion questions, i.e. the feedback we would like from the TAC, are listed in bullets under each agenda item. They are a starting point for the agenda.

1. Welcome — 10:00 AM

a. Welcome and convene — Co-chairs
b. Approval of minutes (attached)
   - October 14, 2014 meeting
   - November 18, 2014 meeting
c. Short reports from other TACs — Liaisons

2. Preview of Stage 2 Base Mapping for Factor 1 (Efficiency) — 10:15 AM

Discussion and action

a. See maps in Appendix A — Mary Dorman, APG

- Parcel size
- Improvement to land value
- Proximity to existing UGB
- Topography (25% slopes)

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

- Rural subdivisions with CC&Rs

Discussion and TAC action:

- Do the preliminary base maps capture key indicators for Goal 14, Factor 1 for Stage 2 (prioritizing exception lands within Study Area)?
- Other sources of data for CC&R's?

3. Legal and Planning Context for Factor 2 (Orderly & Economic Facilities) — 10:45 AM

Information

Mary Dorman

a. Overview of Goal 14 rule relating to Factor 2
b. Remand requirements relating to Factor 2 (See Appendix B)
c. Brief overview of updates to Public Facility Plans since remand

4. Recommended criteria/measures for Factor 2 (Orderly & Economic Facilities) — 11:00 AM

Information and action

a. Transportation – see discussion in memo — Chris Maciejewski, DKS
   - Overview of proposed methodology
   - Review available Stage 2 base maps for Transportation (provided at meeting)
   - Discuss coordination with ODOT and data that will be available from Travel Demand Model to compare scenarios
b. Water – see discussion in memo — Tom Hickmann, City of Bend
   - Overview of proposed methodology
   - Review available Stage 2 base maps for Water (provided at meeting)
   - Discuss data that will be available from Optimization model to compare scenarios
c. Sanitary Sewer – see discussion in memo
   - Overview of proposed methodology
   - Review available Stage 2 base maps for Sewer (provided at meeting)
   - Discuss data that will be available from Optimization model to compare scenarios
d. Stormwater – see discussion in memo
   - Overview of proposed methodology

- Review available Stage 2 base maps for Stormwater (provided at meeting)
- Discuss data that will be available from Optimization model to compare scenarios

Discussion and TAC action:

- Preliminary approval of proposed methodology to address Factor 2 for transportation, water, sewer and stormwater facilities
- Preliminary approval of available Stage 2 base maps for infrastructure (map series will be supplemented)

5. Recommended criteria/measures for Factor 4 (Compatibility with Resource Activities Outside UGB) — 12:00 PM

Information and action, if time is available

a. See memo from Boundary TAC 2 meeting packet (excerpt from memo included in Appendix C) — Mary Dorman
b. See preliminary Stage 2 base maps in Appendix C

Discussion and TAC action:

- Preliminary approval of criteria/measures to address Factor 4
- Preliminary approval of available Stage 2 base maps in Appendix C (map series will be supplemented)

6. Public Comment — 12:20 PM

This is an opportunity for visitors to provide comments to the TAC — Chair

7. Adjourn — 12:30 PM

City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting Notes
Date: November 18, 2014

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday November 18, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 10:04 am by Sharon Smith.

Roll Call

- ☐ Toby Bayard
- ☐ Susan Brody
- ☐ Paul Dewey
- ☐ Robin Vora
- ☐ Dale Van Valkenburg
- ☐ Bruce White
- ☐ Ellen Grover
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ Ruth Williamson
- ☐ Rockland Dunn
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Scott Edelman
- ☐ Jim Bryant
- ☐ Nick Lelack

Discussion

Joe walked the TAC through the agenda at the beginning of the meeting.

TAC reports.

- Dale reported on the Residential TAC meeting from 11/17/14.
- Brian Meese reported on the Employment TAC meeting from 11/18/2014.

Follow up from TAC 3 (See Page 3 of packet).

- Wild and scenic designations. Federal Wild and Scenic designation does not have development standards. The designation relies upon development standards for the Oregon Scenic Water and related standards in the Deschutes County Zoning Ordinance.
- No TAC opposition to team recommendation.

Phase 2 framing and approach (See Page 4 of packet).

- The new chart includes Stage 2 – Base Mapping: map indicators for Goal 14 factors 1 through 4 and Goal 5 inventory.
- State 4 – Scenario Evaluation will include: scenarios testing using the Envision Tomorrow tool; Goal 14 evaluation; water and sewer optimization; transportation modeling; team review of results, and; Goal 5 ESEE analysis.
- The TAC discussion on this topic included how this process will be different from the one used in 2008, the participation of TAC members in Phase 2, the level of analysis (parcel – based); public involvement, and the timing of Goal 5 inventory work.

Approach to Ranking during Base Mapping (See Page 5 of packet). The TAC discussion transitioned to this item, which focused on how to address the four location factors under Statewide Planning Goal 14 (Urbanization) in both the Base Mapping (Stage 2) and Scenario Evaluation (Stage 4). Joe directed the TAC to Table 1 in the meeting packet.

- Factor 1 (Efficient accommodation of land needs) focused on three proposed indicators for Stage 2 Base Mapping.
- TAC also reviewed the four proposed indicators under Factor 2 (Orderly and economic provision of public facilities and services). The TAC closed on the Factors 2 analysis at Stage 2 with criteria on system impacts, physical barriers, substandard roads, and system connectivity (for multi-modal transportation). For stormwater – TAC closed on proximity to drinking water, geology, injection wells, and water quality.
- Factor 3 (Comparative environmental, social, economic, and energy consequences (ESEE)). The discussion of potential Factor 3 criteria at Stage 2 included impacts to existing neighborhoods, proximity to Goal 5 resources, impacts to neighborhoods outside the UGB, solar energy, possible use of the Greenprint Plan as a resource for this analysis, the expansion of relative wildfire risk to all hazards, and consideration of irrigation facilities.
- State 2 criteria for Factor 4 (Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB) included looking at parcels with irrigation, adding efficiency to consideration of irrigation district water, mapping presence of high-value farmland, prescribed burning, measuring proximity between the proposed UGB and farm and forest activities occurring on nearby farm and forest lands.

The approach to ranking was deferred to the next Boundary TAC meeting.

No public comment.

Meeting adjourned at 12:30 pm by Joe Dills.

City of Bend
UGB Remand Boundary Growth Scenarios Technical Advisory Committee
Meeting #3
Meeting Notes
Date: October 14, 2014

The UGB Remand Boundary Growth Scenarios TAC held its regular meeting at 10:00 a.m. on Tuesday, October 14, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 10:05 a.m. by Mike Riley, Chair.

Roll Call

- ✓ Sharon Smith,
- ✓ Dale Van Valkenburg,
- ✓ Paul Dewey,
- ✓ John Dotson,
- ✓ Gary Timm,
- ✓ Ellen Grover,
- ✓ Rockland Dunn,
- ✓ Brian Meece,
- ✓ Susan Brody,
- ✓ Charley Miller,
- ✓ John Russell,
- ✓ Mike Riley,
- ✓ Peter Carlson,
- ✓ Rod Tomcho,
- ✓ Scott Edelman,
- ✓ Nick Lelack
- ☐ Peter Werner,
- ☐ Jim Bryant,
- ☐ Toby Bayard,
- ☐ Steve Hultberg,

Discussion

Welcome and Agenda Review. After the meeting was called to order, Dale Valkenburg gave an update on the Residential TAC meetings (RTAC), from October 9th & 13th, regarding Urban Form including BLI policy discussions – private open space, public open space, CCRs – point of diminishing returns – City staff will coordinate with TAC on correcting CCR spreadsheet and map. Most of RTAC meeting focused on efficiency measures discussion; RTAC reviewed 1.5 of 4 city quadrants. RTAC will meet earlier at 9:00 a.m. at next meeting as they were not able to finish on time.

Brian Meece attended the Employment TAC and updated the team on the Urban Form discussion which focused on centers and corridors. Most of meeting focused on redevelopment analysis of employment lands. A total of 13 potential areas were reviewed at a high level down with a good outcome. Several areas were agreed upon: Central Area plan, zone changes, and southeast area.

Phase 2 Milestones. The TAC then moved into a quick discussion and action of Phase 2 milestones. General consensus was that the budget needs to be a continued priority and the preferred goal to have Phase 2 scenarios completed is by Thanksgiving of 2015. It was agreed that these milestones would continue to be framework which may change in the future.

Approach to Step 2 Screening. Mary Dorman presented the consultant's team initial work on identifying unbuildable lands (See pg. 23 of Meeting packet). She began with the NE quadrant

and posed the question if TAC agreed with the land shown. TAC agreed, with the exception of looking at whether the mining sites can be reclaimed and available for future urban uses over the planning period of 2008-2028. Dale Valkenburg moved and Sharon Smith seconded to keep those mining sites listed as unbuildable until Step 3. Ellen Grover moved and Dale Valkenburg seconded obtaining more information on removing federal and state lands as unbuildable as they are under public ownership.

GOAL 5. Mary Dorman explained there were three options for Goal 5 (Pg. 16 & 17 of packet). Ellen Grover moved we go with Option 2, but take a closer look at TPL Greenprint Plan, and any gaps with data, Brian Meece seconded. Joe Dill amended the motion to add a scoping memo that would come back to committee to be used as a tipping point on the direction the committee will continue with Goal 5 and have another vote at that time. Gary Timm further amended Option 3 be rolled into Option 2, and have a deadline for the scoping memo in the January 2015 meeting. These amendments all passed unanimously. Susan Brody asked TAC to bring back analysis, using Tumalo Creek (Pg. 26 of packet), before the January meeting, to look at the time, costs and implications that area may have. The first vote was tied 6 for and 6 against; Ellen Grover agreed to change her vote to yes and Brian Meece voted yes. The motion passed on a second vote of 8 to 5.

Goal 7. Mary Dorman explained there were three options for Goal 7 (Pg. 20 of packet) and referenced Wildfire Risk Maps (see appendices) to show the high risk areas. What was not clear was how TAC needed to use this information. New information would need to be submitted from the team to be put into record and the guidance of a specialist in wildfire would be helpful before making a decision on the options. A motion was put forth to combine option 2 and 3; John Dotson moved to combine them and Ellen Grover seconded with an amendment that a specialist/educated speaker be contacted to assist in clarifying how we use this information to move forward with Goal 7. Motion passed with only one no vote.

Step 2 Screening vs. Step 3 Evaluation. Mary Dorman presented three options (See pg. 7 & 8 of packet). Sharon Smith motioned to adopt Option 1. Rod Tomcho seconded. Dale concurred and commented that we should let analysis decide what areas shake out, such as Deschutes River Woods and Cascade Highlands. Motion passed unanimously.

Compatibility with Resource Activities. Mary Dorman gave a brief description of the wording of Factor 4 as outlined on page 8 of the packet. Dale Valkenburg moved, Sharon Smith seconded recommended option. Passed unanimously.

Action Items/Next Steps

Action	Notes	Decision made/ Assigned To
Phase 2 milestones.	**Budget needs to be a continued priority.**	**Approved**
Approach to Step 2 Screening	**Mining sites listed as unbuildable until Step 3.** **Need to obtain more info on removing federal and state lands as unbuildable as they are under public ownership.**	**Approved** **Approved**
Goal 5	**Take another look at TPL Greenprint plan and any gaps with data.** **Amendment to add a scoping memo to be voted in January 2015.** **Amendment: Option 3 be rolled into Option 2, and have a deadline for the scoping memo in the January 2015 meeting.** **Motion: TAC to bring back analysis, using Tumalo Creek, before the January meeting.**	**Approved** **Approved** **Approved** **Approved Vote: 8 to 5**
Goal 7	**Motion to combine option 2 and 3.** **Amendment that a specialist/educated speaker be contacted to assist in clarifying how we use this information to move forward with Goal 7.**	**Approved** **Approved**
Step 2 Screening vs. Step 3 Evaluation.	**Motion to adopt Option 1 with the opportunity for screening.**	**Approved**
Compatibility with Resource Activities.	**Approval of Factor 4 wording**	**Approved**

Meeting adjourned at 12:28 pm by Joe Dill.

Memorandum

December 10, 2014

To:	Boundary and Growth Scenarios Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team
Re:	DRAFT METHODOLOGY FOR CONSIDERATION OF ORDERLY & ECONOMIC PUBLIC FACILITIES – FACTOR 2 OF GOAL 14

INTRODUCTION

The Boundary TAC will be continuing its work on developing the methodologies to evaluate lands in the two-mile study area (Stage 2) and specific UGB expansion areas in Stage 4.[1] It is worth noting that the project team appreciates the difficulty of the Boundary TAC's somewhat esoteric mission, but must also reinforce the importance of the TAC's work. The Boundary TAC is spending a tremendous amount of time discussing topics that were not a central focus of the original UGB expansion proposal. The project team hopes the new approach of developing guidance and agreement on the boundary methodology will pay off in the long run, and be more tangible in Phase 2 of the project.

At the November meeting, the Boundary TAC discussed and confirmed how to consider and apply the four factors of Goal 14 at two important stages shown in the diagram for Phase 2 Milestones:

- Stage 2 Base Mapping – Analyzing the study area (using GIS) based on principles and key indicators for the Goal 14 factors. The Stage 2 evaluation is intended to determine which lands are best suited for eventual consideration in a specific UGB expansion scenario to meet anticipated land needs.
- Stage 4 Scenario Evaluation – Analyzing the specific UGB expansion scenarios (using Envision, the Travel Demand Model and Sewer and Water Optimization models, and possibly any useful GIS data) to consider and balance the four factors of Goal 14 based on principles and key measures and identify a preferred scenario. The Stage 4 evaluation will involve forming geographically specific UGB expansion scenarios to meet anticipated land needs.

As described at the November meeting, we are trying to achieve the same objectives in both stages of the analysis: an efficient urban form that is cost-effective to serve, avoids hazard areas, protects natural resources and is compatible with activities on forest and high-value

[1] See Phase 2 Milestones Diagram in packet for Boundary TAC Meeting 4, page 15.

agricultural lands outside the UGB. The Goal 14 factors are considered at both stages at different levels of detail and using different analysis tools. The reason for the different methodologies at Stage 2 and Stage 4 is because some analytical tools like the optimization models and travel demand model cannot be applied until specific land use and expansion proposals are determined.

The Boundary TAC focused on the Stage 2 Base Mapping for all four Goal 14 factors at the November meeting. The Table that was used to facilitate the discussion at the November meeting has been revised and supplemented and will be used again at the December meeting (see Table 1 on page 12).

Subsequent to the November meeting, the project team started assembling preliminary base maps to address several of the Stage 2 Goal 14 factors. A preview of base maps to address Factor 1 (Efficiency) will be the first item on the agenda for the December meeting. Following that discussion, the agenda will focus on Factor 2 (Orderly & Economic Public Facilities). A brief overview of the legal and planning context for Factor 2 will be provided for information only. The bulk of the meeting agenda will be devoted to discussion of the proposed methodology, principles and measures to address Factor 2. Chris Maciejewski (DKS) and Tom Hickmann (Director of Bend Engineering & Infrastructure Planning Dept.) will take lead roles in the presentation to help the Boundary TAC explore appropriate methodologies to apply at Stages 2 and 4.

Preview of Stage 2 Base Mapping for Factor 1 (Efficiency)

As a follow-up to the November meeting, the project team has prepared preliminary base maps for Factor 1 (Efficient Accommodation of Identified Land Needs). The purpose of the Stage 2 base mapping for Factor 1 is to prioritize exception lands within the Study Area (more than 18,000 acres) based on the following key indicators of land use efficiency approved by the TAC at the November meeting (see maps in Appendix A):

- Parcel size
- Improvement to land value
- Proximity to existing UGB
- Topography (slopes >25%)
- Rural subdivisions with known CC&Rs

The project team used available GIS data to prepare the first four maps bulleted above. The Topography map identifies areas with slopes >25% (categorized as unbuildable). The project team intends to supplement this map to also show areas with slopes >15% and less than 25%. For the fifth map, city staff provided a spreadsheet that listed rural subdivisions with known CC&Rs and highlighted those with provisions that restricted land divisions. APG linked the information in the spreadsheet with a County GIS layer with subdivision names. The project team assumes that the fifth map is incomplete and will be refined as more data becomes available. Tracking down supporting evidence on CC&Rs can be very labor intensive. The Residential TAC provided helpful information in identifying subdivisions with CC&Rs that restricted land divisions and/or additional dwellings inside the UGB.

Questions for the TAC:

1. Do the preliminary base maps in Appendix A adequately reflect the Factor 1 indicators approved by the TAC at the November meeting?

2. Can the TAC provide suggestions on how and when it would be appropriate to obtain additional supporting data on CC&Rs for rural subdivisions in the Study Area?

LEGAL AND PLANNING CONTEXT FOR FACTOR 2

As described at earlier meetings, Statewide Planning Goal 14 requires that alternative boundary locations be evaluated 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.

The Goal 14 factors apply only if there is more suitable land than needed among the first priority exception lands. The factors are used to "break the tie" and determine which among the first priority exception lands to include in the UGB, based on consideration and balancing of all four factors. This follows from the Boundary TACs approved methodology implementing the McMinnville case.

Guidance from Goal 14 Rule

The administrative rule for Goal 14 (OAR 660-024-0060) provides the following guidance specific to Factor 2.

(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 of more, the provision of public transit service.

As outlined above, Factor 2 is clearly intended to take an integrated view of orderly and economic provision of public facilities and services – considering not only which expansion areas can be served most efficiently, but also considering how alternative expansion areas have different impacts on areas already inside the UGB. The project team believes that some of these factors can be addressed at a high level in the Stage 2 evaluation, and that Stage 4 evaluation with the use of more sophisticated models will include all of these Factor 2 requirements. This conclusion is mostly because the models used at Stage 4 are not appropriate or applicable to evaluating the entire study area, rather, they are appropriate for evaluating specific boundary alternatives.

Key Remand Issues Relating to Factor 2

The Remand Order identified several issues relating to the City's application of Factor 2 of Goal 14. [2]

- Whether the Public Facility Plans (PFPs) submitted by the City comply with Goal 11 for lands within the prior UGB (Issue 7.1). This issue has largely been resolved by the city's decision to first create PFPs for the current UGB only, which will be the basis of the analysis of expansion areas.
- Whether PFPs were improperly used to determine the location of the expanded UGB (Issue 7.3). This issue has also largely been resolved by the city's decision to first create PFPs for the current UGB only, which will be the basis of the analysis of expansion areas.
- Whether City must reconsider relative costs of providing public facilities to UGB generally, and in planning for needed housing in particular (Issue 7.9)
- Whether City's findings adequately explain the relative costs of providing transportation improvements to serve alternative UGB expansion areas (Issue 8.1)
- Whether City must provide more detailed transportation analysis to consider "extraordinary" improvement costs (Issue 8.2)
- Whether City must re-analyze relative costs of transportation improvements on the west side to be comparable with other expansion areas (Issue 8.3)
- What must City do to comply with the Transportation Planning Rule? (Issue 8.6)

[2] See Appendix B for a list of Remand Issues Relating to Factor 2.

Overview of Updates to Facility Plans since the Remand

A very brief summary of Facility Plans that have been updated since the 2008 UGB proposal is provided below. This information is intended to convey that the analysis of "orderly and economic public facilities" will be supported by detailed plans, data and technical models for public facilities. The models which were used to create the approved (or in process) PFPs will be relied upon in a limited way in Stage 2, and more comprehensively in Stage 4. Also, there has been policy guidance related to these systems and PFPs which inform the Stage 2 and Stage 4 analysis.

Water Public Facility Plan

The City adopted a Goal 11 Water Public Facility Plan (Water PFP) in 2012.[3] The plan shows the water public facility plans for the City of Bend, Avion Water Company, and Roats Water Company based on planned land uses within the existing UGB. The Water PFP was affirmed by LUBA on appeal and is acknowledged.

Having an acknowledged Water PFP for the existing UGB will be very helpful to the Bend UGB Remand project. Additionally, the Optimization Study (2011) identifies water infrastructure investments needed in the next ten years. The Water PFP and the corresponding water model for the current UGB will provide the factual basis for evaluating different infill and UGB expansion scenarios and considering the relative costs, advantages and disadvantages of alternative expansion areas on existing and planned water infrastructure within the existing UGB.

Sewer Public Facility Plan

In 2014, the City of Bend completed the Collection System Master Plan (CSMP) and is in the process of approving the Collection System PFP. The plan evaluated the capacity of existing public sewer collection and conveyance facilities to serve areas within the existing UGB, as well as areas in which the city is contractually obligated to serve.

The results of the existing capacity analysis and planned future system excess system capacity analysis (based on improvements identified in the CIP) will be very helpful to the Bend UGB Remand project. Similar to the Water PFP, an Optimization Study has been completed for the CSMP. The SE Interceptor, Colorado Lift Station and North Area Diversion are confirmed as high priority projects (1-3 year implementation) in the Optimization Study. Final recommendations from the Sewer Infrastructure Advisory Group (SIAG) have been forwarded to the City Council, with public hearing(s) and adoption of a Sewer PFP anticipated by early 2015.

The Sewer PFP, the Optimization Study and the corresponding sewer model for the current UGB will provide the factual basis for evaluating different infill and UGB expansion scenarios and considering the relative costs, advantages and disadvantages of alternative expansion areas on existing and planned sewer infrastructure within the existing UGB.

[3] http://www.bend.or.us/modules/showdocument.aspx?documentid=10880

Stormwater Master Plan

The City Council adopted its first Stormwater Master Plan in August 2014,[4] and is now in the process of having this plan approved as a Stormwater PFP. Once adopted, the Stormwater Master Plan will serve as the oversight plan for addressing stormwater quantity and quality issues. In addition, the plan provides a delineation of drainage areas and runoff quantities throughout Bend, and programmatic goals for addressing water quantity and quality concerns.

The remand did not raise specific issues relative to the consideration of stormwater in the Goal 14 boundary analysis. However, similar to the Water and Sewer PFPs, having an adopted Stormwater Master Plan in place will be very helpful to the Bend UGB Remand project.

During Phase 2, it is expected that the City will take the lead on any modeling and analysis required to evaluate different infill and UGB expansion scenarios to consider the relative costs, advantages and disadvantages of alternative expansion areas relative to the strategies in the Stormwater Master plan. This effort will be coordinated with the scenario modeling work of the APG team.

Update to MPO Metropolitan Transportation Plan

The Bend Metropolitan Planning Organization (BMPO) recently updated the regional long range transportation plan, called the Metropolitan Transportation Plan (MTP), for the Bend Metropolitan Planning Area. This effort included an update to the MPO travel demand model. The update was necessary to address state and federal requirements; to reflect changes to the transportation network; to incorporate existing and planned future land uses; and to include updated financial forecasts. The update also integrated other recently completed planning efforts such as the regional transit plan and regional Intelligent Transportation System (ITS) plan.

The 2014-2040 MTP represents Stage I of a two-stage update process. Stage I provided an update of the prior plan based on a new 2040 land use scenario and an updated 2040 revenue forecast. It is expected that the land use patterns within the MPO (which is a fundamental assumption that drives transportation needs) will be revised in the next few years as part of the City of Bend's current Urban Growth Boundary update efforts. Once that work is complete and a new future land use pattern and UGB boundary is established, a comprehensive Stage II update of the MTP will be undertaken to be consistent with those new land use plans. The Stage I efforts focused update of the current MTP to conform with federal requirements, reflect changes and work completed since the last plan adoption in 2007, and, to the extent possible, incorporate goals of the most current federal transportation bill (MAP-21). The update was critical to maintain federal funding eligibility within the Bend area. The Stage I MTP update was adopted by the BMPO Policy Board on September 25, 2014.

[4] http://www.bend.or.us/modules/showdocument.aspx?documentid=17354

PROPOSED METHODOLOGY FOR CONSIDERATION OF FACTOR 2

Link with UGB Project Goals

The UGB Steering Committee has adopted goals for the Urban Growth Boundary Project. Two of the eight goals are directly related to orderly and economic infrastructure and the city's urban form:

- *Balanced Transportation System* – Bend's balanced transportation system incorporates an improved, well-connected system of facilities for walking, bicycling, and public transit, while also providing a reliable system for drivers.
- *Cost Effective Infrastructure* – Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

Consistent with these project goals, the project team proposes principles and measures for achieving the principles for each of the four infrastructure categories (shown in Table 1 on pages XX). The principles have been derived from recent updates to the Bend Area General Plan (Chapter 8: Public Facilities and Services) associated with recent work on the PFPs. To keep the analysis manageable and meaningful, the team has made an effort to focus on the key principles and measures that provide the best opportunity for comparing the relative costs, advantages and disadvantages of boundary alternatives. This is especially true in the Stage 2 analysis, since all the modeling tools available to the Boundary TAC and process cannot be fully utilized until the Stage 4 analysis.

Transportation Facilities

Four general principles are proposed for the consideration of orderly and economic transportation facilities under Factor 2.

- **Route choice:** The system should provide optional circulation choices.
- **Connectivity and reasonably system hierarchy:** The system should provide logical and reasonable connections and routes between roadways of varying function and the uses they support.
- **Balanced system flow:** The system should work to balance flow across all available facilities and work to improve the utilization of under-capacity roadways.
- **Multimodal system:** The system should provide adequate facilities and connectivity for non-auto modes.

These principles will inform the Stage 2 base mapping before scenarios are formed, as well as the Stage 4 analysis. Table 1 shows proposed indicators that could be considered for transportation in the base mapping stage (Barriers, Existing Bottlenecks and System Connectivity). The principles will be considered more rigorously and thoroughly through the Stage 4 evaluation, after scenarios have been formed and land uses and development types applied spatially. Envision will be used in Phase 2 (prior to or along with Stage 4 evaluation) to

create and evaluate up to four different land use scenarios with a wide variety of performance measures. Specific to transportation, Envision will be used to test the performance of each of the scenarios on measures such as vehicle miles traveled (VMT), mode split, number of jobs and housing within ¼ mile of transit corridors, intersection density, and rough transportation costs (based on unit costs provided by the City of Bend).

In addition, the four land use scenarios will be provided to ODOT's Transportation Planning & Analysis Unit (TPAU) to run the regional transportation demand model for a more focused comparison of transportation performance of the alternatives. DKS has been coordinating with TPAU on the methodology and anticipated schedule when the four alternatives will be ready for the model run (June-July, 2015). With the advanced coordination, DKS anticipates that TPAU will be able to run the travel demand model for all four scenarios within 2-3 weeks. It is worth noting that the Stage 4 evaluation by TPAU is not directly under the control of the City of Bend, or the Boundary TAC, since TPAU is a part of ODOT. The project team will do all it can to coordinate with TPAU to reach desirable timelines.

Following a review of the initial results of the Envision Testing and Transportation Modeling, the project team expects that it may be appropriate to consider refinements to the land use and transportation scenarios (such as including additional transportation connections, etc.) prior to formation of a hybrid or preferred scenario. TPAU will do another run of the regional travel demand model and the output from that step will be used by DKS and the project team to prepare more detailed costs and transportation improvements needed to support the preferred scenario, as required by the Goal 14 rule.

Questions for the TAC:

1. Does the TAC support the proposed principles for the consideration of "orderly and economic provision of transportation facilities" under Factor 2?

2. Does the TAC support the key indicators used for the transportation principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision and Transportation Demand Models)?

Water Facilities

Three general principles are proposed for the consideration of orderly and economic water facilities.

- Prioritize a gravity based system
- Provide water storage capacity for each pressure zone, where practical
- Maximize use of existing and planned system improvements

The principles will inform the Stage 2 mapping, particularly the indicator for a gravity based system (based on elevation and pressure zones). Information from the Water Public Facility Plan and Optimization will also be helpful in forming the initial scenarios. The project team will consider the water investments needed in the next ten years as identified in the Optimization Study (2011). Efficient use of existing and planned infrastructure is a top priority.

The recently completed Water PFP will be the basis for the analysis in Stage 2 and Stage 4. Note that the underlying optimization model must have specific uses identified at specific

locations in order to be utilized to its full extent. Therefore, the Stage 2 methodology is not as complete as the Stage 4 analysis.

Similar to methodology for transportation facilities, Envision will be used for the initial evaluation of the relative costs, advantages and disadvantages of the four scenarios relative to water facilities. The distinct spatial arrangement of land uses for each scenario will be used to calculate relative costs for water infrastructure (based on linear feet of pipe and unit costs provided by the City of Bend). The project team suggests using Envision at this stage rather than optimization in order to save time and resources, and provide the ability to make quick refinements.

Following a review of the initial results of the Envision Testing, the project team expects that it may be appropriate to consider refinements to the land use scenarios. The refined scenarios will then be provided to the Murray Smith & Associates (MSA) to run the Optimization Model for water facilities. The output from the Optimization will be used by the project team to prepare more detailed costs and evaluation of the relative advantages and disadvantages of each scenario for water facilities as required by the Goal 14 rule.

There are three other water service areas in and around the Bend UGB and study area including Roats, Agate, and Avion Water Companies. The city is required to coordinate with these water companies, and will do so with regard to this proposed methodology. Depending on the input from the other water providers, there could be different methodologies required to analyze at Stage 2 and Stage 4 for water facilities.

Questions for the TAC:

1. Does the TAC support the proposed principles for the consideration of “orderly and economic provision of water facilities” under Factor 2?

2. Does the TAC support the key indicators used for the water principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision and Optimization Models)?

3. Three private utilities also provide domestic water to customers inside and outside of the existing UGB (Avion, Agate and Roats). The optimization analysis will only address the City of Bend facilities. The project team will coordinate with and rely on the private utilities for analysis of costs, advantages and disadvantages of alternative scenarios relative to their respective systems. Does this raise any concerns or issues for the TAC?

Sanitary Sewer Facilities

Three general principles are proposed for the consideration of orderly and economic sanitary sewer facilities.

- Update the current and planned collection system to be more reliant on gravity flow
- Provide capacity for existing developed areas in the City that aren’t currently served
- Maximize use of existing and planned improvements

The principles will inform the Stage 2 mapping, particularly the indicator for a gravity based system. Information from the Sewer Public Facility Plan and Optimization will also be helpful in

forming the initial scenarios. The project team will consider the major list of short-term projects identified in the Capital Improvement Plan. Efficient use of existing and planned infrastructure is a top priority in both the formation and evaluation of UGB scenarios.

The recently completed CSMP and Collection System PFP will be the basis for the analysis in Stage 2 and Stage 4. Note that the underlying optimization model must have specific uses identified at specific locations in order to be utilized to its full extent. Therefore, the Stage 2 methodology is not as complete as the Stage 4 analysis.

Similar to methodology for other infrastructure, Envision will be used for the initial evaluation of the relative costs, advantages and disadvantages of the four scenarios relative to sanitary sewer facilities. The distinct spatial arrangement of land uses for each scenario will be used to calculate relative costs for sewer infrastructure (based on linear feet of pipe and unit costs provided by the City of Bend).

Following a review of the initial results of the Envision Testing, the project team expects that it may be appropriate to consider refinements to the land use scenarios. The refined scenarios will then be provided to the Murray Smith & Associates (MSA) to run the Optimization Model for sanitary sewer facilities. The output from Optimization will be used by the project team to prepare more detailed costs and evaluate the relative advantages and disadvantages of each scenario for sanitary sewer facilities as required by the Goal 14 rule.

Questions for the TAC:

1. Does the TAC support the proposed principles for the consideration of “orderly and economic provision of sanitary sewer facilities” under Factor 2?

2. Does the TAC support the key indicators used for the sanitary sewer principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision and Optimization Models)?

Stormwater Facilities

For years, the City of Bend’s drainage system has depended primarily on underground injection (dry wells and drill holes) to discharge stormwater into the fractured volcanic rock that underlies much of the City, or into the Deschutes River in some areas. Bend does not have a city-wide system of pipes collecting and transporting stormwater for treatment. The lack of defined drainage ways, the expense of digging in rock, and the difficult topography have limited the installation of piping.

In light of Bend’s relatively unique system, two principles are proposed for consideration of orderly and economic stormwater facilities:

- Manage stormwater pollutants at the source to the degree possible using low-impact development (LID) and other techniques
- Protect identified drinking water protection areas (DWPA)

The principles will inform the Stage 2 base mapping, particularly the available maps of drinking water protection areas. Surface geology will also be a consideration for areas that are more suitable or cost-effective for stormwater management using LID techniques.

Questions for the TAC:

1. Does the TAC support the proposed principles for the consideration of "orderly and economic provision of stormwater facilities" under Factor 2?

2. Does the TAC support the key indicators used for the stormwater principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision or other models)?

Introduction to Table 1

The Boundary TAC focused on the Stage 2 Base Mapping for all four Goal 14 factors at the November meeting. Table 1 has been expanded for this meeting to include:

- References to preliminary Stage 2 maps for Factor 1 (Efficiency) and Factor 4 (Compatibility). See maps in Appendix A and Appendix C, respectively.
- Greater detail on the proposed Stage 2 indicators for Factor 2 (Orderly & Economic Public Facilities). Preliminary maps for some of these indicators will be provided at the December meeting.
- Additional details on the analysis tools (models) and measures that could be used for the evaluation of scenarios in Stage 4 relative to transportation, water, sewer and stormwater facilities. Of the four factors of Goal 14, Factor 2 is most dependent on use of models (including Envision, the Travel Demand Model and Optimization) to provide the data and analysis required by the Goal 14 administrative rule.

Similar to the approach used at the November meeting, the project team assumes that Table 1 will continue to be refined based on the discussion and input from the Boundary TAC at this meeting.

Table 1. Goal 14 Factors

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
Factor 1: Efficient accommodation of identified land needs	
Analysis Tool: GIS • Parcel size • Improvement to land value ratio • Proximity to existing UGB – adjacency more efficient than edge of study area • Topography (Note: we currently only have GIS layer for 25% slopes or greater) • Existing CC&Rs prohibit or limit additional development *See Appendix A – Preliminary Base Maps for Factor 1*	**Analysis Tool: Envision** • Urbanized acres • New housing units built inside vs. outside existing UGB in 2028 (# and %) • New jobs located inside vs. outside existing UGB in 2028 (# and %) • Estimated average density for housing and jobs in 2028 (units/acre and jobs/acre – measure for entire scenario and associated UGB expansion area) • Percent of new growth accommodated through infill/redevelopment by scenario
Factor 2: Orderly and economic provision of public facilities and services	
Transportation	
Analysis Tools: GIS & existing transportation modeling data • **Barriers**: Consideration of physical barriers to connectivity (new river crossings, railroad crossings, etc.). Maps would reflect these physical barriers, which are associated with higher costs to construct, as well as representing bike and pedestrian barriers. • **Existing Bottlenecks**: Consideration of bottlenecks that are already nearing or at capacity and what land areas rely on those facilities for circulation (based on trip patterns in 2010) • **System Connectivity**: Consideration of existing roadway spacing of arterials and collectors and opportunities for connectivity for multiple modes. Mapping would consist of identifying if the existing major roadway network meets ideal grid-spacing (e.g., one-mile between arterials) and the	**Analysis Tool: Envision** • VMT/capita • VMT/facility type (including trip-type) • Mode split • Housing & jobs within ¼ mile of transit corridors (# and %) • Intersection density • # of new lane miles • Rough costs for transportation improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Travel Demand Model** • Scenario balances VMT between highway and other street classifications and between trip types (local, city-wide, regional) • Scenario supports system that provides logical connections and progression of

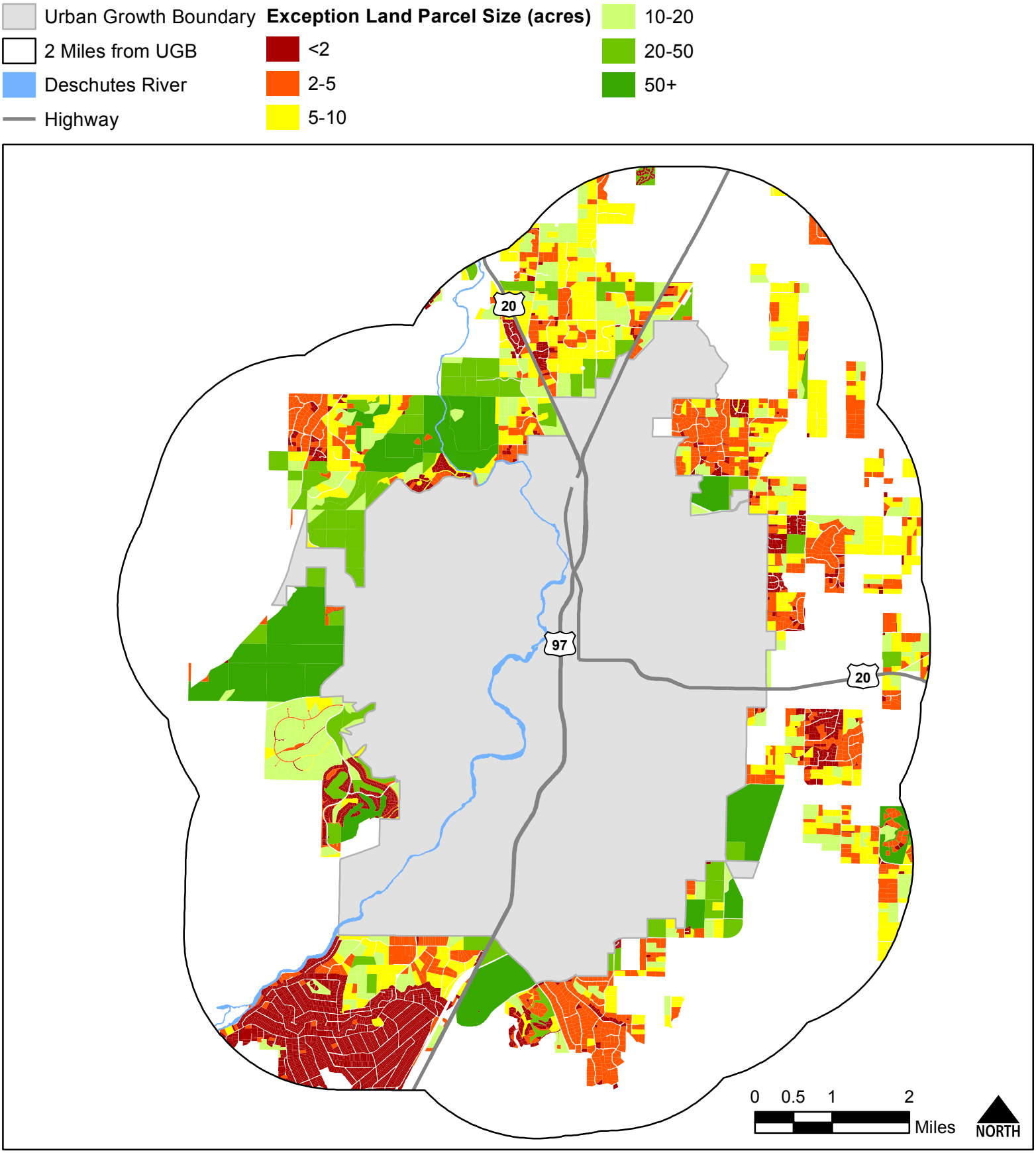
Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
potential to extend arterials and collectors into the study area, to rank these areas of the study area with a more subjective approach. It may also be helpful to identify existing intersection densities (connectivity) inside the current UGB as well, in order to see if subareas in the study area are adjacent or near well connected streets inside the current UGB (which various expansion areas would presumably flow into if added to the UGB). *Preliminary Stage 2 Base Maps for Factor 2 will be provided at the December meeting*	system hierarchy (local street – collector – arterial – highway) • Scenario balances flow across available facilities and improves utilization of under-capacity roadways (congestion analysis) • Scenario better balances number of system lane miles for both state and local system • Scenario improves grid system for pedestrian/bicycle travel • Scenario supports efficient transit corridors • More detailed types and costs of transportation improvements including the need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements (identified by scenario and UGB expansion area associated with each scenario)
Water	
Analysis Tool: GIS & existing water system master plan information • **Gravity system**: Consideration of areas that can be served via gravity. This would be illustrated by a map showing areas outside the UGB in the study area that could be served via gravity. • **Pressure zones:** Consideration of pressure zones with existing water storage capacity. This would be mapped similar to the above. *Preliminary Stage 2 Base Maps for Factor 2 will be provided at the December meeting*	**Analysis Tool: Envision** • Acres served by gravity system by scenario • Rough costs for water improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Optimization** • New housing units & jobs (# and %) within pressure zones with storage by scenario • Additional water storage facilities required by scenario • More detailed types and costs of water system improvements by scenario – along with roll up as cost per acre for expansion area associated with each scenario
Sanitary Sewer	
Analysis Tool: GIS & existing sewer system	**Analysis Tool: Envision**

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
master plan information • **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. *Preliminary Stage 2 Base Maps for Factor 2 will be provided at the December meeting*	• Acres served by gravity system by scenario • Rough costs for sewer improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Optimization** • Number of existing pump stations removed by scenario • More detailed types and costs of sewer system improvements by scenario – along with roll up as cost per acre for expansion area associated with each scenario
Stormwater	
Analysis Tool: GIS and existing stormwater master plan information • **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. This could be shown by a map of more impermeable soils in areas outside the UGB, but inside the study area. • **Water quality limited streams**: Consider proximity to water quality limited streams. This could be illustrated by a map showing areas outside the UGB inside the study area that drain to Tumalo Creek and the Deschutes River. *Preliminary Stage 2 Base Maps for Factor 2 will be provided at the December meeting*	**Analysis Tool: Envision** • Acres of new development within DWPA by scenario • Acres of scenario with welded tuff geology • Acres of scenario draining to water quality limited streams

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)	
Analysis Tool: GIS • 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 • Proximity to existing or planned parks, trails, elementary schools *Preliminary Stage 2 Base Maps for Factor 3 will be provided at the January meeting*	**Analysis Tool: Envision** • Development (acres, number of housing units, number of jobs) in areas where Goal 5 resources are present • Development (acres, number of housing units, number of jobs) in Goal 7 hazard prone areas • Housing units within walking distance of existing/planned elementary schools, parks and trails in 2028 (# and % of total units) • Housing mix & affordability by income level • Jobs housing balance (by TAZ or quadrant) • Greenhouse gas emissions • Total impervious surface area • % of job growth in downtown Bend
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB	
Analysis Tool: GIS • Proximity to designated forest land • Proximity to designated high-value agricultural land • Proximity to irrigated agricultural land *See Appendix C – Preliminary Base Maps for Factor 4*	**Analysis Tool: Envision** • Perimeter of proposed UGB in proximity to designated forest land (lineal feet/miles) relative to existing UGB • Perimeter of proposed UGB in proximity to designated high-value agricultural land (lineal feet/miles) relative to existing UGB • Designated forest or agricultural land included in scenario, if any (acres)

APPENDIX A
Preliminary Base Maps for Factor 1

Priority 2 Exception Land Parcel Size



URBAN GROWTH BOUNDARY REMAND

BEND

Prepared 12/3/2014

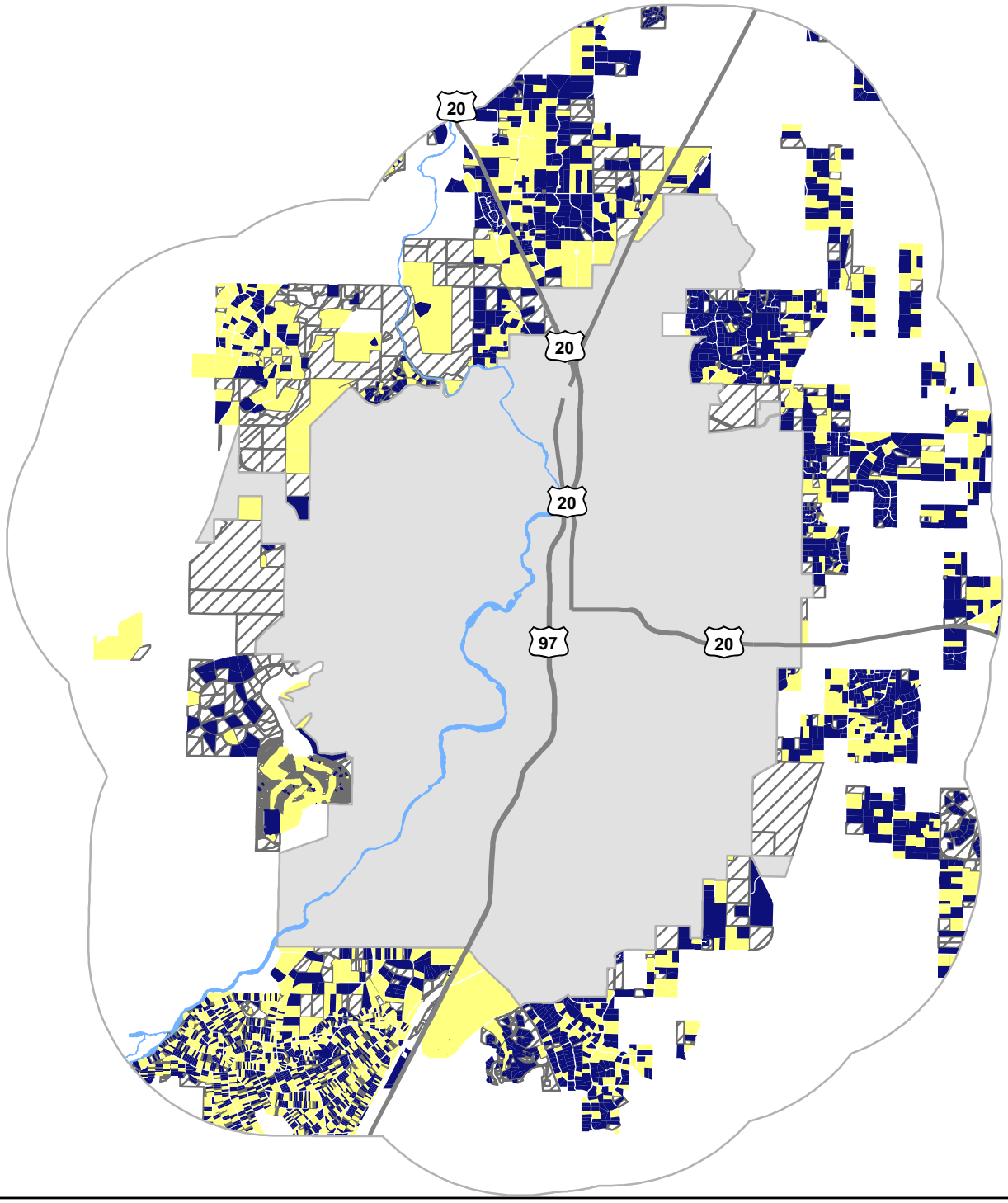
02957

Improvement to Land Value Ratio

Urban Growth Boundary
2 Miles from UGB
Deschutes River
Highway

Improvement to Land Value Ratio

1 and Below (Improvement Less than Land Value)
Above 1 (Improvement More than Land Value)
No Improvement Value



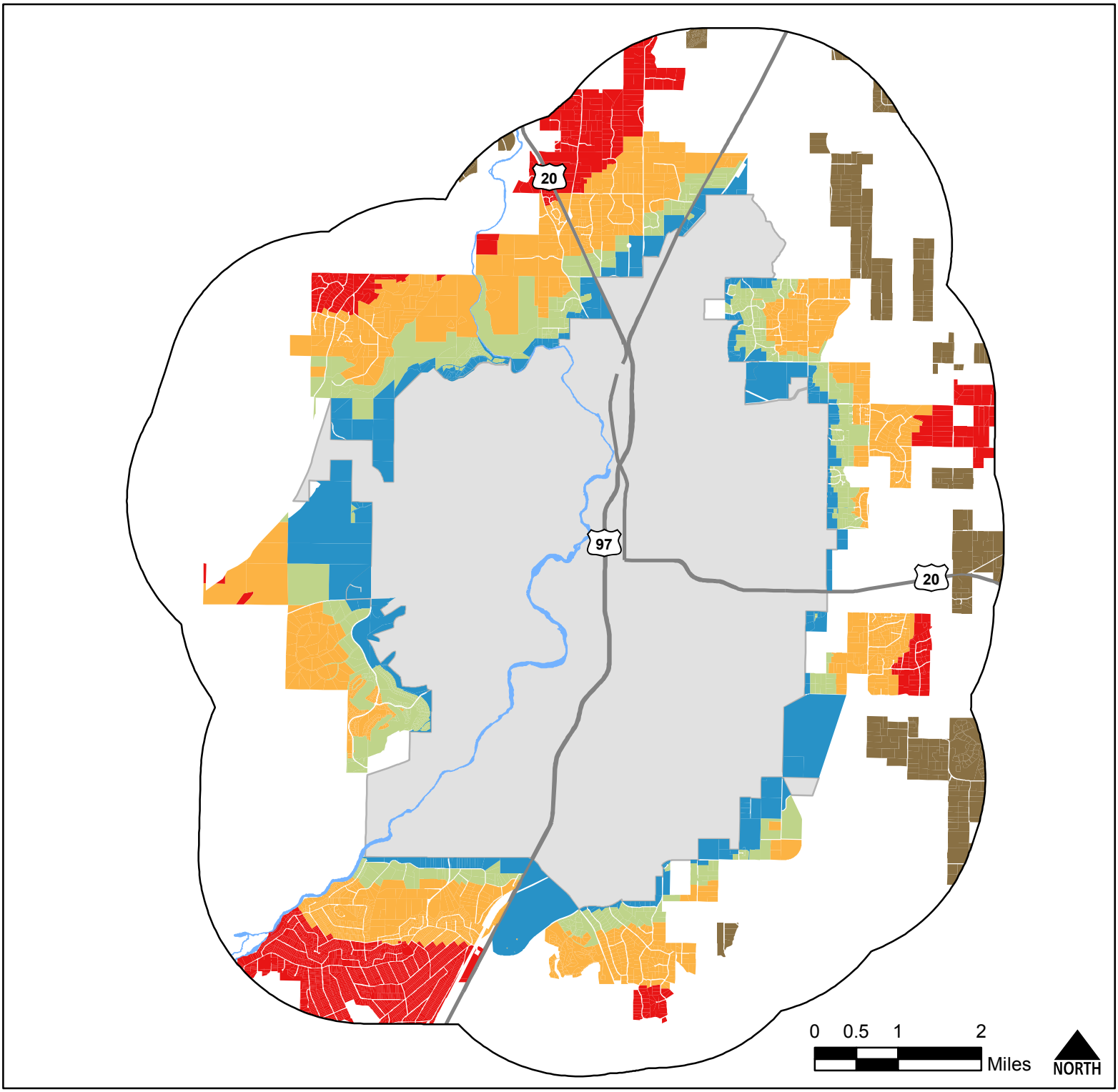
URBAN GROWTH BOUNDARY REMAND
BEND

Exception Land - Distance from UGB

Urban Growth Boundary
2 Miles from UGB
Deschutes River
Highway

Exception Land
Contiguous
Within .25 miles

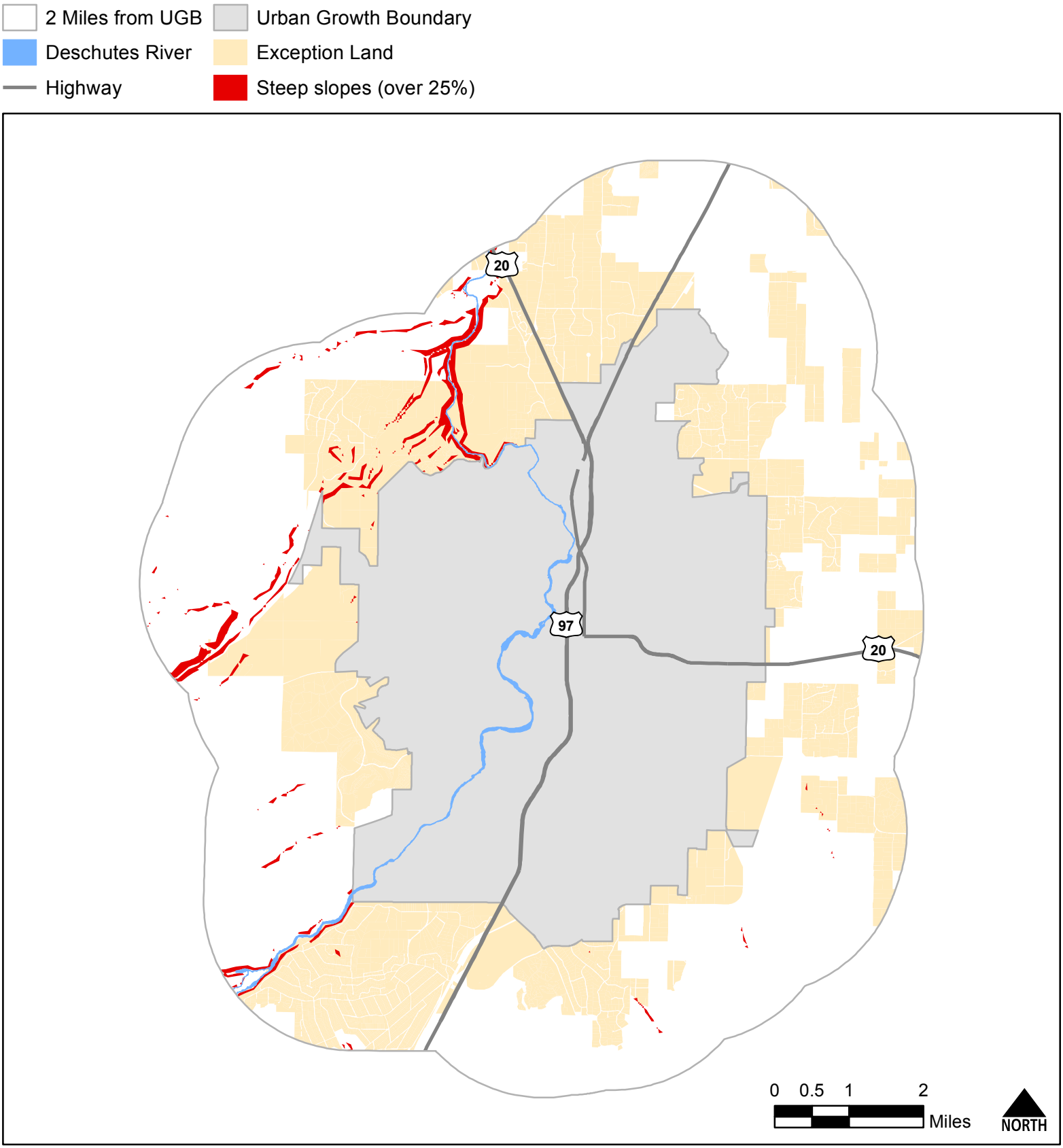
Within 1 mile
Greater than 1 mile
Separated from UGB by Resource Land



URBAN GROWTH BOUNDARY REMAND
BEND

Prepared 12/3/2014
02959

Topography - Slopes 25% or Greater



URBAN GROWTH BOUNDARY REMAND

BEND

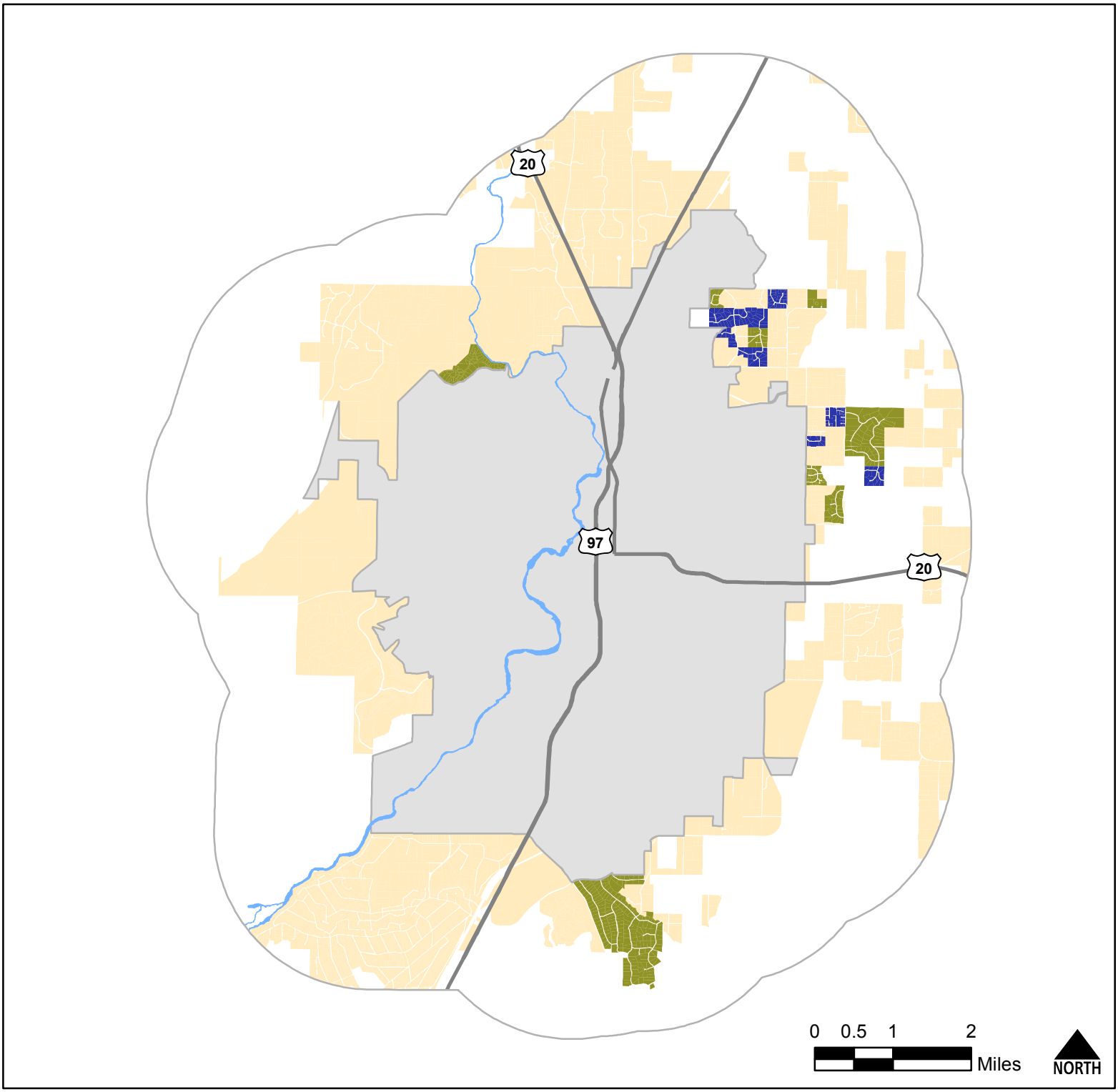
Prepared 12/3/2014

02960

Subdivisions with known CC&Rs

2 Miles from UGB
Deschutes River
Highway
Urban Growth Boundary
Exception Land

CC&Rs
Land Division Restriction
No Land Division Restriction



URBAN GROWTH BOUNDARY REMAND
BEND

Prepared 12/3/2014
02961

APPENDIX B
Remand Issues Relating to Factor 2

Excerpts from Remand Index Relating to Factor 2 Issues

Public Facilities – Goal 11	
7.1 (Conclusion) Page 101	87. The City may adopt public facilities plans as needed for acknowledged land uses within its prior, acknowledged UGB on remand. 88. The city may then, subsequently, adopt revisions to its public facilities plans for any revised UGB expansion proposal and any other related amendments to its acknowledged comprehensive plan.
7.7 (Conclusion) Page 110	89. On remand, the City must address the entire expansion area under Goal 11 and Goal 14, locational factor 2. The City is not required to do so through amendments to its public facilities plan, although it may do so. 90. If the City elects to carry out the analysis(es) of the feasibility of serving the expansion area independently of its public facilities plan, it should nevertheless formally adopt the analysis and incorporate it into the city's comprehensive plan (and the analysis must not conflict with existing provisions of the public facilities plan).
Transportation – Goal 12	
8.1 (Analysis) Pages 114-115	91. The city is required to compare lands in the same priority classes under ORS 197.298, Goal 14 and OAR 660-024-0060 (except when lower priority lands are included as necessary to serve higher priority lands under ORS 197.298(3)(b)). 92. The city may aggregate its underlying data, by TAZs and priority category, and address the results in revised findings
8.1 (Conclusion) Page 115	93. On remand, the city must analyze the relative costs of lands in the same priority category, rather than aggregating its analysis into subareas without regard to the priorities under ORS 197.298.
8.1 (Director's Report) Page 89	94. Identify and assign costs of individual UGB expansion areas, rather than combinations of different areas; 95. Provide additional information regarding the costs of providing transportation facilities to serve individual areas, including any extraordinary costs related to overcoming topographic barriers or rights of way; 96. Provide more detailed analysis of the extent to which the costs of improvements for major roadway improvements in north area (including proposed improvements to Highways 20 and 97) are a result of and should be assigned to development in the north area rather than the city as a whole. (That is, the city's analysis and evaluation should assess whether the extent of improvements in north area might be avoided or reduced in scale or cost if the UGB was not expanded in this area, or if the extent of the UGB expansion was

	reduced.); and 97. Provide comparable estimates for providing needed roadway capacity for areas that, because of topographic constraints, may need to be served by different types of road networks. For example, growth on the east side can apparently be served by a fairly complete grid of streets, while topographic barriers limit potential for a full street grid in this area.
8.2 (Conclusion) Page 116	98. On remand, the city must revise its findings to address this issue. If the city chooses to rely on existing analysis that there is no cost differential between alternate lands in the same priority category, that decision must be supported by substantial evidence in the record as a whole. 99. While no specific method or outcome is required, the city must explain its basis(es) for assigning the costs of extraordinary improvements to expansion areas in the same priority category, and consider whether changes in the extent or location of the UGB expansion would reduce the need for major improvements in this area.
8.3 (Conclusion) Pages 117-118	100. On remand, the city must revise its findings to address this issue including not only the relative cost of required transportation improvements, but the relative advantages and disadvantages as well. OAR 660-024-0060(8) (which may include the relative amount of development capacity the city can support for a particular unit of cost). 101. On appeal, at oral argument, the city agreed to strengthen its findings in this area to the extent that lands on the west of the city are included in the UGB expansion area on remand.
8.6 (Conclusion) Pages 120-121	102. The City is required to comply with OAR 660-012-0035 before it may complete its UGB expansion. 103. The City has agreed to prepare analyses of its baseline VMT per capita in 2003 (with VMT as defined in OAR 660-012-0005), along with an analysis of projected VMT per capita over the planning period with proposed "packages" of land use and transportation measures to reduce VMT per capita. 104. If the City demonstrates that its revised UGB expansion, along with proposed land use and transportation measures, results in an estimated change in VMT per capita: a. of a decline of 5% or more per capita, then the City is in compliance with this aspect of the TPR under 0035(6); b. of a decline of between 0% and 4.99 percent per capita, then the City may proceed by preparing for DLCD/LCDC review and approval concurrently with the revised UGB, a work program/plan to achieve a reduction of 5% or more over the planning period; or c. of an increase in VMT per capita, then the city must prepare, submit and obtain DLCD/LCDC approval of an integrated land use and transportation plan as provided in OAR 660-012-0035(5) prior to approval of a revised UGB.

APPENDIX C
Criteria/Measures for Factor 4
Excerpt from Boundary TAC 2 Packet

FACTOR 4 OF GOAL 14: COMPATIBILITY OF URBAN AND RESOURCE USES

As summarized in the City Attorney Memorandum included in the packet of materials for this meeting, the McMinnville case set out an analytical 3-step process for integrating Goal 14 and ORS 197.298. The diagram attached to the City Attorney Memorandum illustrates the 3-step process. Based on the McMinnville decision, consideration of compatibility of proposed urban uses with resource uses occurs at two distinct steps in the process:

- High level, initial consideration of compatibility in Step 2 (Initial Suitability Evaluation); and
- More focused evaluation of compatibility in Step 3 (Goal 14 Factor Analysis)

The proposed evaluation criteria that follow are intended to be applied to the more focused evaluation of compatibility in Step 3 when the City is considering alternative growth and UGB expansion alternatives.

The wording of Factor 4 of Goal 14 is very specific:

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

First, proposed urban uses must be near agricultural and forest activities. Second, any agricultural and forest activities must be occurring on designated farm and forest land (e.g., not on exception land).

Two maps are attached to this memo. The first map shows City of Bend plan designations for lands inside the existing UGB and Deschutes County plan designations for lands within a 2-mile and 3-mile radius of the UGB. The map clearly shows that large blocks of contiguous forest land (public and private) are located to the west and south of the UGB. Designated farm lands are located to the north and east of the UGB and are more heavily parcelized and interspersed with exception lands relative to the forest land. The second map shows the same area, with lands grouped by Priority Category as defined by ORS 197.298.

Potential evaluation criteria and measures to address Factor 4 are presented below for consideration by the Boundary TAC.

Compatibility of Urban and Resource Uses

Proposed Evaluation Criteria & Measures

Potential Evaluation Criteria	Potential Measure(s)
Does the scenario include any designated resource lands?	Gross acres of designated Forest land (categorized by site class) included in proposed UGB, by scenario Gross acres of designated Agricultural land (categorized by capability class) included in proposed UGB, by scenario
Does the scenario expand the perimeter of proposed urban uses in closer proximity to designated resource lands?	Map the perimeter of the following: • For the existing UGB, how much of the UGB abuts designated Forest or Agricultural land (by site/capability class) • For existing plan designations, how much of the existing exception areas abut designated Forest or Agricultural land (by site/capability class) • For each scenario, how much of the perimeter of the proposed UGB abuts designated Forest of Agricultural land (by site/capability class)
For each scenario, focus on the areas where the perimeter of the proposed UGB is in closer proximity to designated resource lands to assess compatibility in greater detail	Gather GIS or other available data to describe current farm and forest activities for subareas that share similar characteristics: • For the Forest zone, what range of forest activities occur in proximity (1/2 mile) of proposed urban uses? For example, timber harvest, fuel reduction programs, public access/recreation, habitat protection/enhancement, etc? • Identify and evaluate potential compatibility issues associated with closer interface of urban and forest uses. For example, trespass, vandalism, increased fire risk, wildlife disturbance, etc. • For Agricultural zones, what range of agricultural activities occurs in proximity (1/2 mile) of proposed urban uses? For example, hay/grain production, specialty crops, cattle/calves, horse pastures, etc. • Identify and evaluate potential compatibility issues associated with closer interface of urban and agricultural uses. For example, trespass, vandalism, higher traffic volumes, displacement of irrigated lands, etc. **Note:** This evaluation criterion/measure is also relevant to Factor 3, Environmental, Social, Economic and Energy Consequences

Potential Evaluation Criteria	Potential Measure(s)
Are tools available to minimize compatibility issues at the interface between urban and resource lands?	Qualitative evaluation – not something that can be measured. • For example, require buffers/defensible space and implement "Firewise" standards to reduce wildfire risk (condition of annexation) • Other urban form tools (greenbelts/designated open space corridors) to minimize compatibility issues and address other community goals? **Note:** This evaluation is also relevant to Factor 3 – ESEE consequences.

Questions for the Boundary TAC:

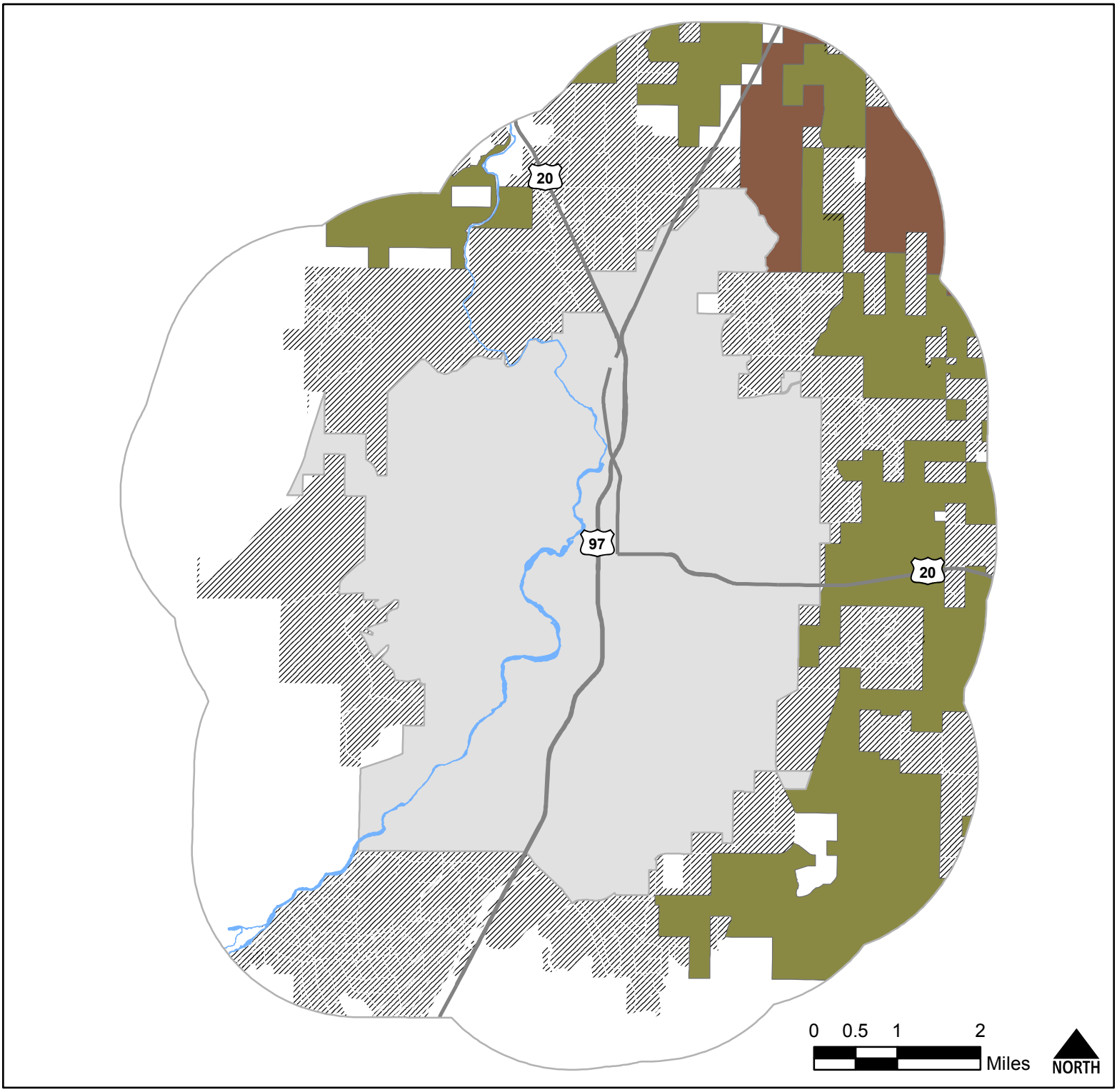
1. Are the potential evaluation criteria listed above reasonable and appropriate to address the issue of compatibility between urban and nearby farm and forest uses occurring on designated agricultural and forest lands?

2. Are there other criteria that you think should be added to address Factor 4? If yes, are there things we can measure (using GIS or Envision) to evaluate if the criteria are met?

APPENDIX C
Preliminary Base Maps for Factor 4

EFU Zoning

- Urban Growth Boundary
- 2 Miles from UGB
- Deschutes River
- Highway
- Exception Land
- EFU - ALFALFA SUBZONE
- EFU - TUMALO / REDMOND / BEND SUBZONE



URBAN GROWTH BOUNDARY REMAND

BEND

Prepared 12/3/2014

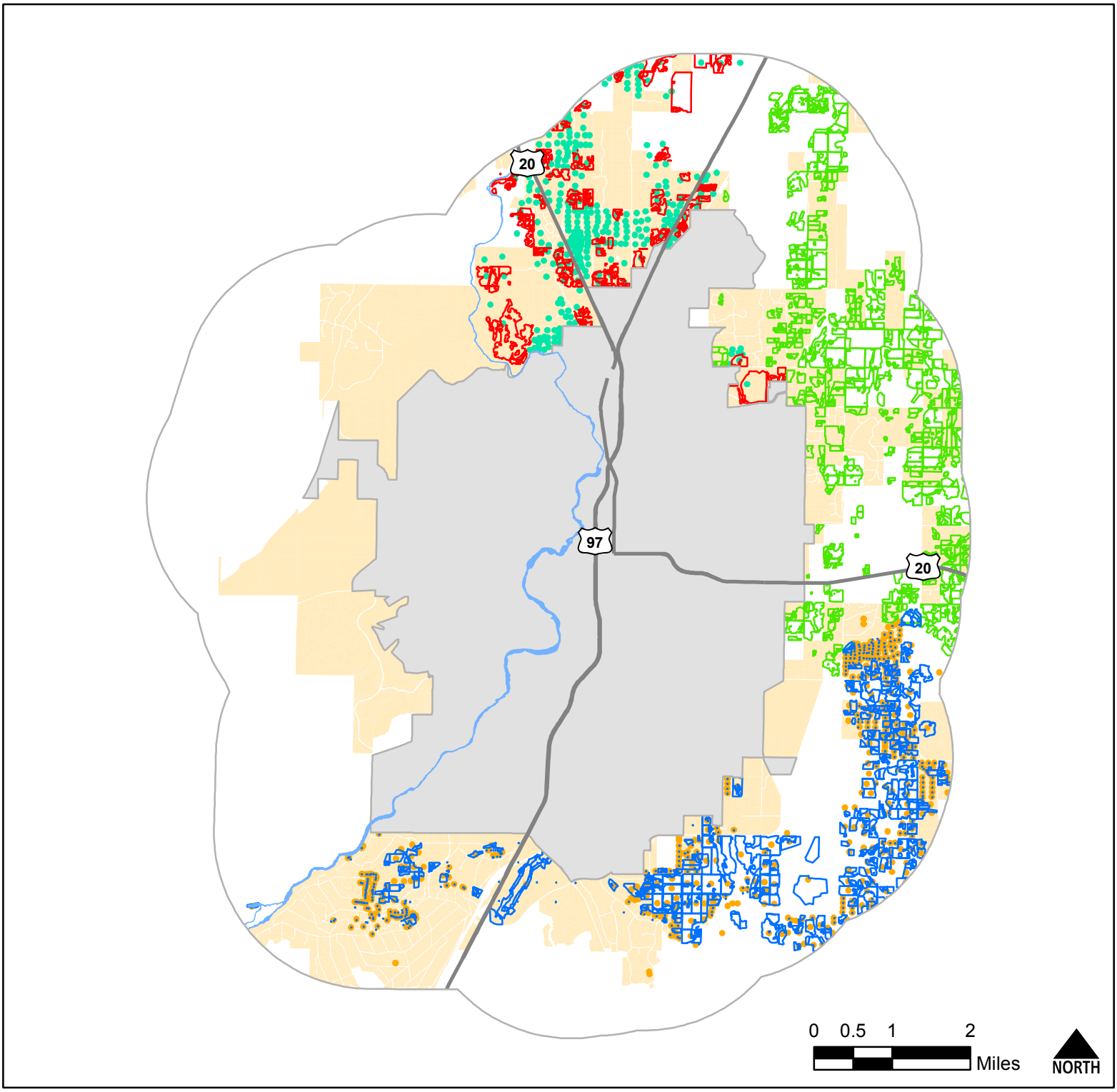
02970

Irrigation and Water Rights

Urban Growth Boundary
2 Miles from UGB
Deschutes River
Highway

Irrigation Districts
Arnold
COID
Swalley

Arnold Water Rights
Swalley Water Rights



URBAN GROWTH BOUNDARY REMAND

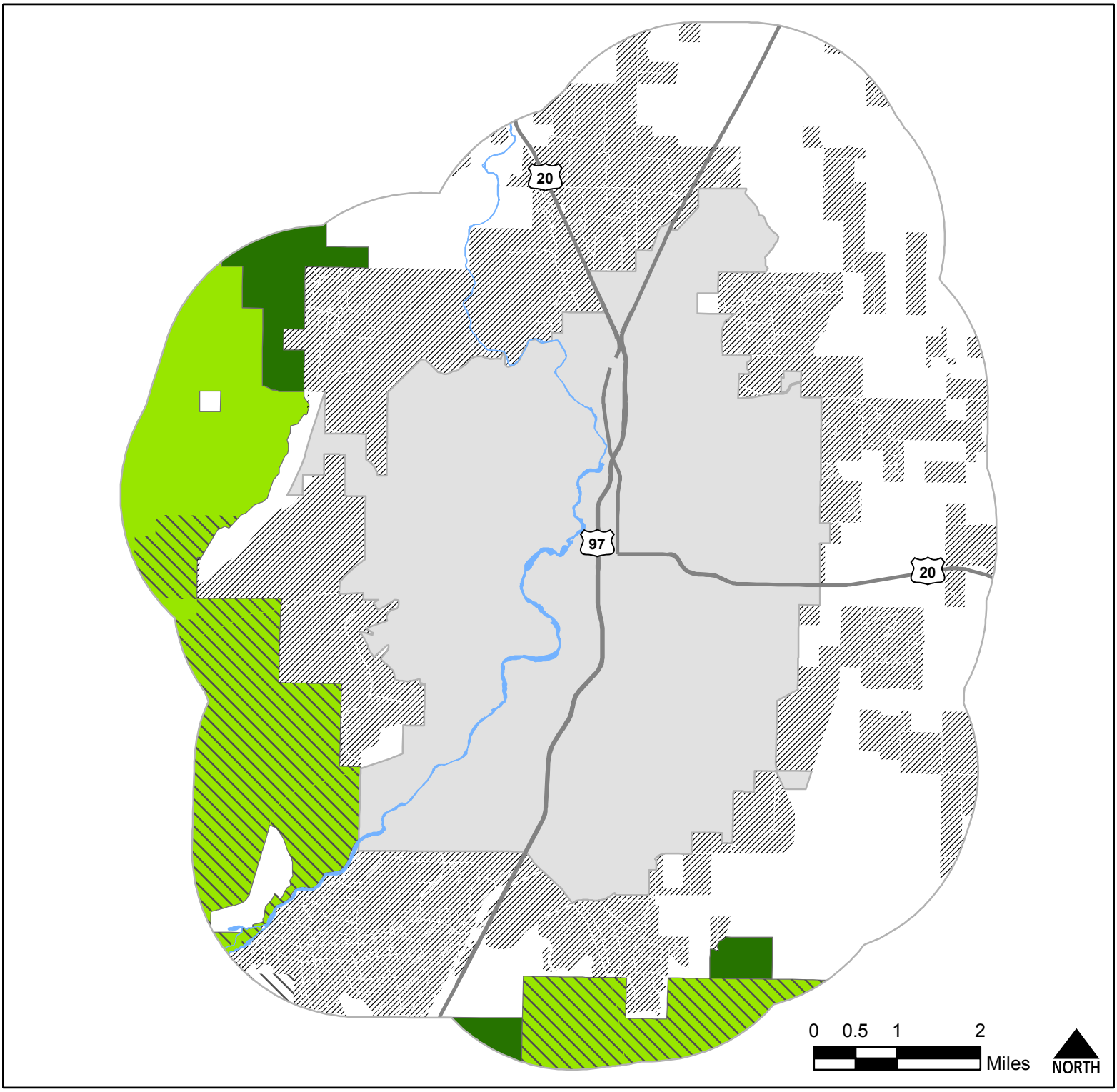
Prepared 12/8/2014

Forest Use Zoning

Urban Growth Boundary
2 Miles from UGB
Deschutes River
Highway
Exception Land
Deschutes National Forest

Zoning

Forest Use Zone (F-1)
Forest Use Zone (F-2)



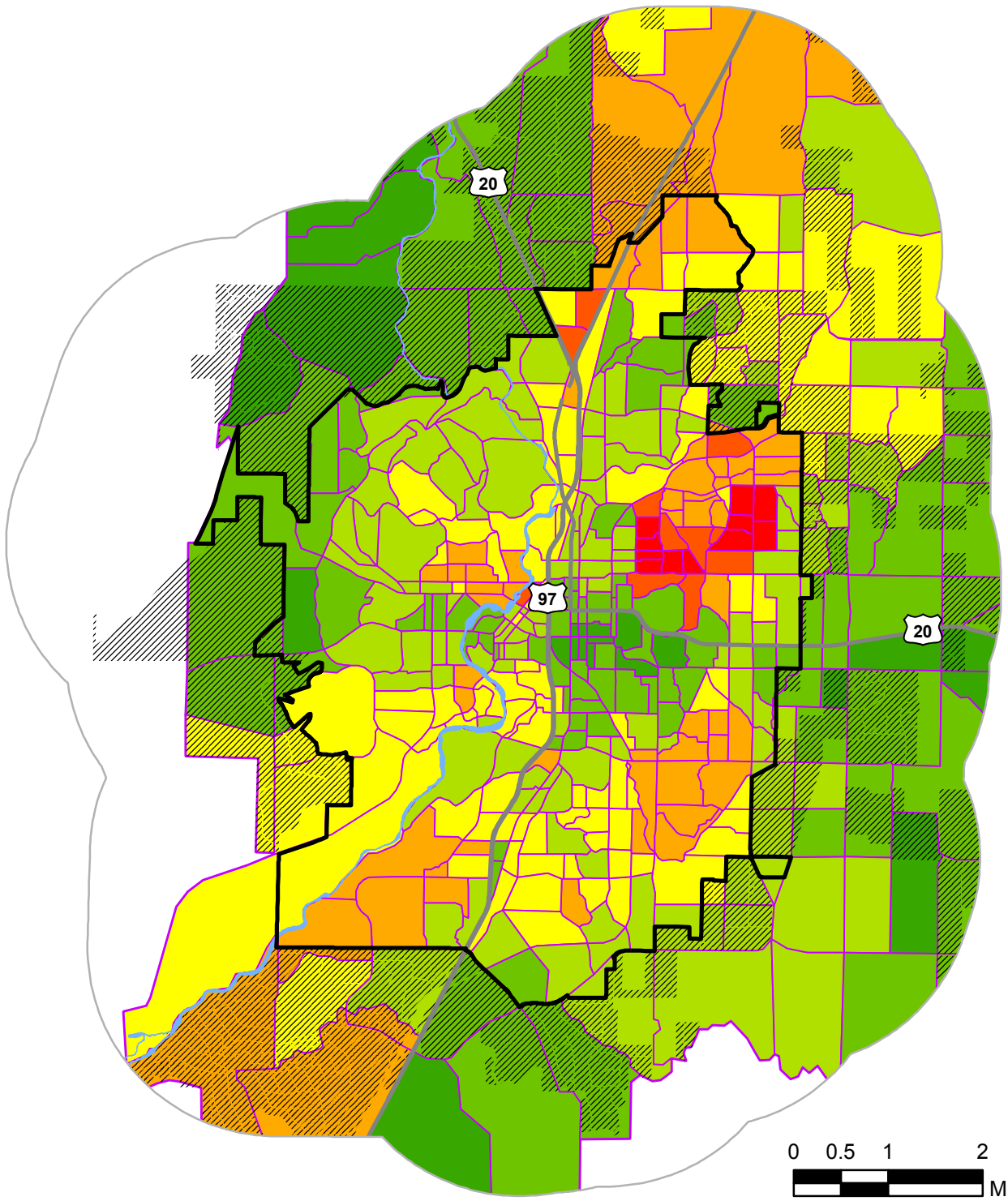
URBAN GROWTH BOUNDARY REMAND
BEND

Year 2010 Percent Congestion by TAZ

Urban Growth Boundary
2 Miles from UGB
Deschutes River
Highway
Exception Land

Percent Congestion

< 40%
40.1% - 50.0%
50.1% - 60.0%
60.1% - 70.0%
70.1% - 80.0%
80.1% - 90.0%
90.1% - 100.0%



URBAN GROWTH BOUNDARY REMAND
BEND

Prepared 12/11/2014
02973

Legend

- Growth Node
- Gravity Main - Existing Trunk
- Gravity Main - Existing
- Force Main - Existing Trunk
- Force Main - Existing
- UGB

New Sewer Basin Service Type

- Gravity to Existing Pump
- Gravity to Gravity
- Gravity to WRF
- Pump to Gravity
- Parcel

Dry Weather Excess Capacity

- > 3,000 gpm
- < 3,000 gpm
- < 2,000 gpm
- < 1,000 gpm
- < 500 gpm
- < 400 gpm
- < 300 gpm
- < 200 gpm
- < 100 gpm
- 0 gpm
- Force Main

Each Growth Node represents approximately 3,000 people with a peak dry weather flow of 285 gpm.

Excess capacity is based on peak dry weather flow at full build-out of the UGB with all CSMP improvments implemented, and a depth to diameter ratio of 0.8.

People served assumes 76 gpcpd.

200 gpm
2,100 people

4000 gpm
42,000 people

WRF

450 gpm
4,700 people

700 gpm
7,400 people

3000 gpm
32,000 people

7000 gpm
74,000 people

6000 gpm
63,000 people

12000 gpm
130,000 people

10000 gpm
110,000 people

600 gpm
6,300 people

2000 gpm
21,000 people

3500 gpm
37,000 people

1000 gpm
11,000 people

1600 gpm
17,000 people

3000 gpm
32,000 people

200 gpm
2,100 people

7000 gpm
74,000 people

300 gpm
3,200 people

4000 gpm
42,000 people

1500 gpm
16,000 people

2000 gpm
21,000 people

1200 gpm
13,000 people

2400 gpm
25,000 people

4500 gpm
47,000 people

0 gpm
0 people

500 gpm
5,300 people

2000 gpm
21,000 people

210 Acres

625 Acres

270 Acres

Medium-10 Density Residential (RM-10)
6 Units Per Gross Acre

Standard Density Residential (RS)
2 Units Per Gross Acre

Standard Density Residential (RS)
4.65 Units Per Gross Acre

0 6,000 Feet

Murray, Smith & Associates, Inc.

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Excess Dry Weather Flow at Full Build-out of the Existing UGB with Implementation of all CSMP Improvements

N W E S

02974

Legend

- Road
- UGB
- Water Feature

Soil Hydrologic Group (Source: NRCS)

- A (15.7%)
- A and B mix (0.2%)
- A and D mix (27.1%)
- A/D and B mix (0.0%)
- B (8.8%)
- B and D mix (38.7%)
- C, D mix (0.4%)
- D (0.4%)
- No Data

0 6,000 Feet

The four hydrologic soil groups are described in the following paragraphs:
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Murray, Smith & Associates, Inc.

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Figure X-X
UGB Expansion:
Soils Infiltration

N W E S

Legend

- HGL- 4,002.5 ft
- Potential Water Service Area

Water Service Areas - Existing

- Agate
- Avion
- City of Bend
- Roats
- Parcel
- UGB
- Water Feature

HGL: 4,002.5 ft
Outback Tanks are 3/4 full delivering 40 psi (static)

0 6,000 Feet

MSA
Murray, Smith & Associates, Inc.

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Figure X-X
UGB Expansion:
Water Analysis

N W E S

BEND OREGON

02976

City of Bend
Residential Lands Technical Advisory Committee
Meeting #6
Meeting Notes
Date: January 26, 2015

The Residential Lands TAC held its regular meeting at 10:00 am on Monday, January 26, 2015 in the Bend City Hall Council Chambers. The meeting was called to order at 9:03 am by Tom Kemper.

Roll Call

- ☐ Allen Johnson
- ☐ Andy High
- ☐ David Ford
- ☐ Don Senecal
- ☐ Gary Everett
- ☐ Gordon Howard
- ☐ Katrina Langenderfer
- ☐ Kirk Schueler
- ☐ Kristina Barragan
- ☐ Kurt Petrich
- ☐ Laura Fritz
- ☐ Lynne McConnell
- ☐ Michael O'Neil
- ☐ Mike Tiller
- ☐ Sidney Snyder
- ☐ Stacy Stemach
- ☐ Steve Jorgensen
- ☐ Thomas Kemper

Discussion

1. Welcome and Introductions

Joe Dills welcomed everyone and gave a short introduction of the meeting agenda. This presentation included a look back and a look forward; the work the Residential TAC has completed and the work left to do. The December workshop was the first attempt to put prior work on a map. The final Phase 1 meeting will be the Residential TAC meeting at the end of February. He announced that the Residential TAC will hold a second meeting in February on the 11th to focus on the buildable lands inventory (BLI).

2. Updated Housing Mix Assumptions

Bob Parker gave a short presentation on proposed housing mix assumptions, and referred the TAC to page 4 of 92 of the packet. This topic included: 1) housing mix; 2) group quarters, and; 3) second homes.

Housing Mix

The TAC received a presentation on housing mix first. The purpose of this discussion was to address housing development that occurred in bend since 2008, and be consistent with the update of the BLI to recognize development between 2008 and 2014. Bob outlined two potential approaches for applying the housing mix of 55% single family detached/10% single family attached/35% multi-family attached. These approaches were outlines in a memo to the TAC and identified as Options A and B. Option A applies the mix based on remaining need by housing type. Option B applies the mix to the total housing units forecast. The Team recommendation was Option B. No policies or plan pieces existed during the 2008 to 2014 period to encourage the development of needed housing. The TAC discussion of this topic included:

- Conferring with DLCD to make sure they support this approach;
- Trends in building permits;
- Feasibility and the City's burden of proving the new housing mix can be achieved.
- Applying retroactively is a push
- Applying going forward with code and regulatory changes to support the market to develop this mix
- Option A recognizes certain development occurred between 2008-2014 and we're trying to dig out of a hole made bigger by these trends
- Potential push back on density if we go with more aggressive option
- Difficulties in developing multi-family attached; regulatory and economics

After the discussion, Joe asked for a show of hands for each option. Four hands of support for Option A and 11 hands of support for Option B. Sid was asked to provide a minority report to the USC.

Group Quarters

Bob referred to the TAC to pages 9 through 11 of the packet, and summarized the recommendation on page 10. The recommendation from the Team was to include 29 acres of land for group quarters in the residential land need assumption. No one opposed the recommendation presented and the committee came to consensus on this variable.

Second homes

Bob referred to pages 10 and 11 of the packet, in which the Team summarized their work and recommendation on second homes. The question they answered was what assumptions should be used for the mix and density for second homes. The Team recommended assuming the mix of second homes be treated as similar to the needed mix of housing and that the average density of second homes be treated as similar to the overall average density for housing. There was little discussion on this topic, and the TAC came to a quiet consensus on these assumptions for second homes.

3. Buildable Lands Inventory and Base Case

Andrew Parrish gave the TAC a progress report on the BLI, working from a short series of power point slides. He also referred the TAC to Appendix F of the packet for more information. One topic of discussion involved those lands categorized as partially vacant and those categorized as developed with infill potential and how many of these lands will be developed during the planning period. Andrew clarified that this will be linked to the trends analysis and historical rates of redevelopment.

4. UGB scenarios and Envision Tomorrow Analysis and Results

Scenarios

Glen Bolen and the team gave the TAC a presentation on the results of the Envision Tomorrow analysis of the different policy packages and UGB scenarios. The team evaluated nine different scenarios using the ET tool = 3 scenarios x 3 packages each = 9 scenarios. Scenario 1 represented the base case. Scenario 2 was identified as the "intensify" scenario. Scenario 3 was referred to as

"intensify and mix." Glen reviewed the three scenarios and highlighted the differences between them. He noted that changes to Area 7 had the effect of changing the results between scenarios. With respect to the policy packages (Packages), Package A represented the current development code. Package B represented the revised code. Package C represent the revised code plus efficiency measures.

He presented the differences between Packages B and C, and referred the TAC to Appendix D of the packet that highlights the differences between packages. For each scenarios, Envision Tomorrow calculated the numbers of new housing units and jobs based on the changes from one scenarios to the next. Scenarios 1a represents what's built under the current general plan. Scenarios 3c represents the scenarios with the greatest differences. The TAC was referred to Figure 6 in the packet – the big takeaway from this graphic was the single family dwelling capacity was fairly consistent across all nine scenarios. Glen also referred to Figures 7 and 8 in the packet while discussing the housing unit results in each scenario. The employment lands in each scenarios were evaluated in a similar manner. With respect to employment lands, Packages B and C yielded similar results in numbers of jobs.

Opportunity Sites

The presentation then focused on the nine (9) opportunity areas evaluated in the scenarios. These areas are described on pages 36 and 37 of the packet. The results of the ET analysis did not vary significant between scenarios for Opportunity Areas 2, 3, 5, 8, and 9. The ET analysis for the other four opportunity areas – Areas 1, 4, 6, and 7 – showed more differences between scenarios. The following summarizes the results of the ET analysis for the opportunity areas and the direction from the TAC on how to proceed further.

Area 1 (3rd st) – not much difference in the analysis of this area in Scenarios 2 and 3. For 3rd Street, follow MMA plan. Don't include 15 story building type. Parking standards – need to look at these. Carry forward Scenario 3 and include a hybrid of Scenarios 2 and 3 for Area 1.

Area 4 (SW Century Drive) - good example of what happens with changes in housing and employment. Scenario 3 mixed use leads to more housing units, which do not include dormitory units for OSU. County demo dump still being treated as public land. Develop hybrid of Scenarios 2 and 3 for Area 4.

Area 6 (Juniper Ridge) – Should land be removed from this area if it's not available due to Highway 97? Employment TAC needs to review this areas – ask them if more housing should be included. Carry forward Scenarios 2 and 3 for Area 6.

Area 7 – Scenarios 1 through 3; fewer jobs provides more space for additional housing. TAC discussed carrying forward just scenario 2, land for schools and parks, infrastructure data for Scenario 3. Straw poll results – Scenario 2 is my favorite – 11; Scenario 3 is my favorite – 20.

Action Items/Next Steps

Action	Assigned To
Housing Mix: TAC selected Option B	Done

Group Quarters: TAC consensus with Team Recommendation of 29 acres	Done
Second homes mix and density: TAC consensus with Team Recommendation	Done
UGB Scenarios – Direction on Opportunity Areas ✓ Area 1: Hybrid Scenarios 2 and 3 ✓ Area 4: Hybrid Scenarios 2 and 3 ✓ Area 6: Carry forward both 2 and 3 ✓ Area 7: Scenario 2	Done

Meeting adjourned at 12:38 pm by Joe Dills.

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet (1)

Meeting: RESIDENTIAL TAC #4

Date: 1/26/2015

Location: Council Chambers

Name	Organization	Email Address
Scott Edelman	DLCD	
Kristina Barragan	Alzheimers Association	
Steve Jorgensen	Bend Park & Rec. Dist.	steve@bendparksandrec.org
MIKE O'NEIL	SOLAIRE HOMEBUILDERS	
Andy High	COBA	
Janet Burton	COAR	Janet@coar.com
Ron Boozell		ron.boozell@gmail
Dale Van Valkenburg		
MIKE TILLER	BPSD	
Karl Jorgensdorfer	HHPR	
John Russell	DSL	
Lynne McConnell	Neighbor Impact	
Laura Fritz		
Bill Robie		bill@billrobie.com

Meeting Agenda

Residential Technical Advisory Committee – Meeting 6
Monday, January 26, 2014 9 AM – 12:30 PM
Please note the 9 AM start time
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Review and approve updated assumptions about housing mix (2014-2028) and assumptions about second homes and group quarters
- Hear a brief update on the Buildable Lands Inventory and the "Base Case"
- Discuss results from the scenario evaluation and direct the team on the next round of scenarios to be prepared

In September, 2014, the UGB Steering Committee approved recommendations for a projected future mix of different types of housing units for the years 2008-2028. In November, the TAC directed the team to follow up on: how development that occurred between 2008 and 2014 would be factored into the mix of housing; and, how land needs associated with second homes and group quarters are factored into projections of future needed housing. The team will present recommendations on those topics.

Based on a variety of available GIS data and assumptions related to building lands that were previously vetted by the TAC, the team is preparing an update to the City's Buildable Land Inventory (BLI) for the area within the UGB. The working BLI was combined with existing Comprehensive Plan and zoning designations and assumptions about future development to create a working "Base Case" for future development inside the UGB. The team will update the TAC on the BLI and Base Case. The team has prioritized completing work on Base Case and Scenarios memorandum included in this agenda. Therefore, a full BLI document is not included in this packet – it will be provided at a future date.

At a joint TAC/USC workshop in December, TAC and USC members worked with the project team to identify potential future development types within specific opportunity areas inside the UGB, building on previous individual TAC recommendations for those same areas. Based on the results of the workshop, the team created two scenarios for analysis using the Envision Tomorrow modeling tool. Code-related efficiency measures, as

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previously discussed by the TAC, have been factored into the analysis. The analysis provides information about a variety of potential outcomes associated with those scenarios. The team will present the results of this analysis and seek feedback from the TAC about which elements should be carried forward into the next round of hybrid scenarios, which elements should not, and which elements might be unique to the bookends of the scenarios.

Agenda

1. Welcome and Introductions — 9:00 AM

a. Welcome and convene	Tom Kemper
b. Self-introductions	All
c. Where we are in the process – a brief look back and look forward	Joe Dills, Brian Rankin

2. Updated Housing Mix Assumptions — 9:15 AM

Information and action

a. Presentation: Recommended refinements to the housing mix and residential land need projections related to: • Residential development 2008-2014; • Options for incorporating recent development into future housing mix; • Recommended approach for addressing land needs associated with second homes and group quarters	Bob Parker, ECONorthwest
b. TAC discussion and action: does the TAC agree with the project team recommendation or suggest modifications to it?	

3. Buildable Lands Inventory and UGB Base Case — 9:40 AM

Information

a. Brief update and TAC discussion: Buildable Land Inventory and Base Case updates: current work in progress	Andrew Parish, APG
b. Next steps: potential special meeting on the BLI in February	Joe Dills, Brian Rankin

4. UGB Scenarios and Envision Tomorrow Analysis and Results — 10:00 AM

Information and direction

Please see Detailed Agenda on page 12 of this packet.

Note: a 10-minute break will be taken at approximately 10:30 AM.

Fregonese & Associates, other team members

5. Public Comment — 12:15 PM

6. Project News — 12:25 PM

a. Announcements and updates
b. News from the other TACs

7. Adjourn — 12:30 PM

Memorandum

January 15, 2014

To:	Residential Lands Technical Advisory Committee
Cc:	Bend Staff
From:	APG Project Team
Re:	Analysis of Permits Issued for New Residential Development between 2008 and 2014 and Implications for Housing Mix

BACKGROUND

This memorandum summarizes residential development that occurred in Bend between 2008 and July 2014. The analysis is important because it will inform decisions about how the City applies the needed housing mix assumptions. The August 19 memorandum to the Residential TAC presented extensive data on housing and demographic trends as well as two potential housing mix assumptions. The TAC and USC endorsed the Trend 2 housing mix recommendation of 55% single-family detached, 10% single-family attached, and 35% multifamily attached.

The Remand addresses the 2008 through 2028 period, as did the housing needs analysis. Residential development, however, did not stop in the years between 2008 and 2014. Thus, key issues are how much residential development occurred during the 2008-2014 period and how the City should account for that development in addressing housing needs.

The Remand acknowledged a 2028 population forecast of 115,063 for Bend; or 38,512 new persons for the 20-year period between 2008 and 2028. Related to the population forecast, the Remand acknowledged a need for 16,681 new dwelling units between July 1 2008 and June 30 2028. City of Bend building permit data show that 2,912 permits were issued for new residential dwellings between July 2008 and June 2014. That leaves a residual need of 13,770 new dwelling units between July 1, 2014 and June 30, 2028.

The revised housing land need estimates also need to account for (1) land needed for group quarters housing units, and (2) land needed for second homes.

The memorandum is organized into the following sections:

- **Housing Development Trends, 2008-2014** summarizes residential development activity in Bend between 2008 and July 2014.
- **Options for Addressing Needed Housing Mix** presents two potential approaches the City could take to project needed housing units as well as the project team's recommendation.

- **Persons in Group Quarters** presents the working assumption on group quarters.
- **Land Need for Second Homes** presents the land need estimates for second homes as presented in the 2008 HNA.

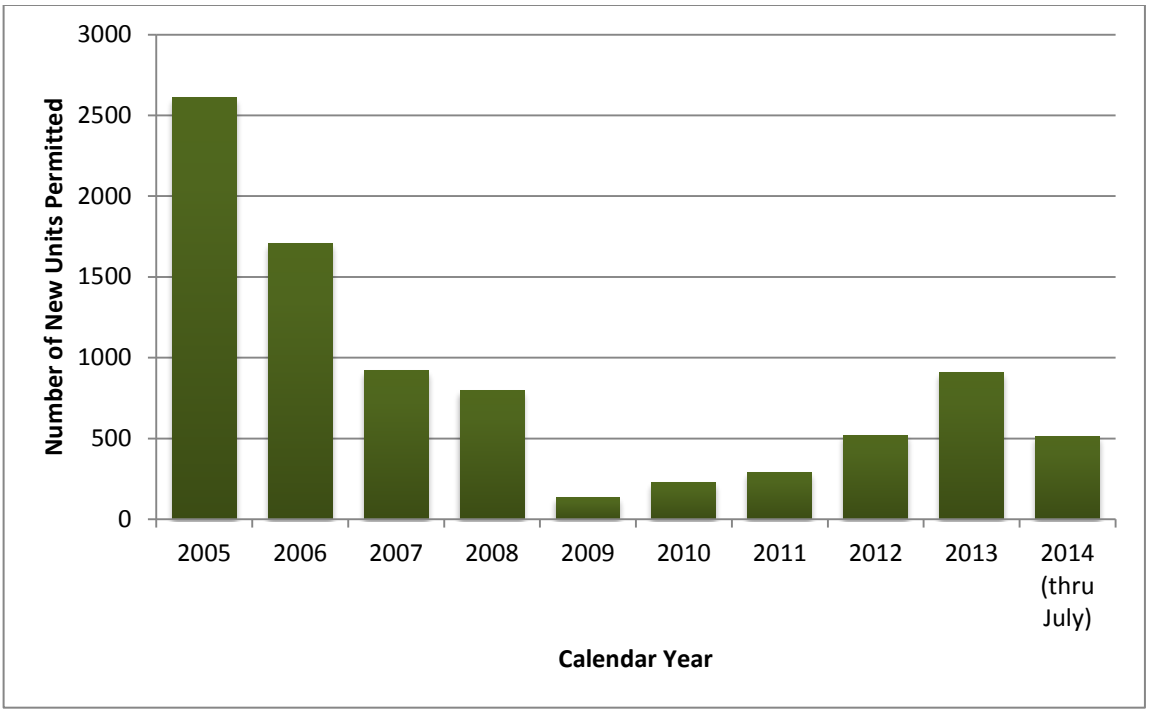
HOUSING DEVELOPMENT TRENDS, JULY 2008-JUNE 2014

This section provides a summary of residential development trends in Bend between 2005 and end of June 2014.[1] The focus is on new residential development after 2008. The analysis is based on building permit data collected by City of Bend staff.

Figure 1 shows total number of dwelling units permitted for housing of all types in Bend between 2005 and end of July 2014. The data show a significant decline in residential development activity between 2005 and 2009 corresponding with the national housing crash. Development has steadily increased since 2009 to a total of 907 permits issued for 2013 and 512 permits issued through the end of July 2014.

Figure 1. Total Permits Issued for New Residential Development (in dwelling units) by Year, 2005 through end of July 2014, Bend

[1] It is worth clarifying the time periods used in this analysis:
Trend Period. ORS 197.296(3)(b) requires the HNA to be based on data relating to land within the City's UGB that has been collected since the last periodic review or five years, whichever is greater. In Bend's situation, the last periodic review ended in 1998 with the adoption of the Bend Area General Plan. This HNA relies on data collected from 1998 to 2008.
Planning Period. ORS 197.296(2) further requires the City to ensure a 20-year supply of buildable land for needed housing. The statute stats that the 20-year period shall commence on the date initially scheduled for completion of the legislative review. For this HNA, the 20-year period begins in 2008 and ends in 2028. The city used the 2008 annual population estimate from the Population Research Center at Portland State University as the base. The base year population estimate was for July 1, 2008. Thus the planning period is July 1,2008 through June 30, 2028.



Source: City of Bend building permit data; analysis by ECONorthwest

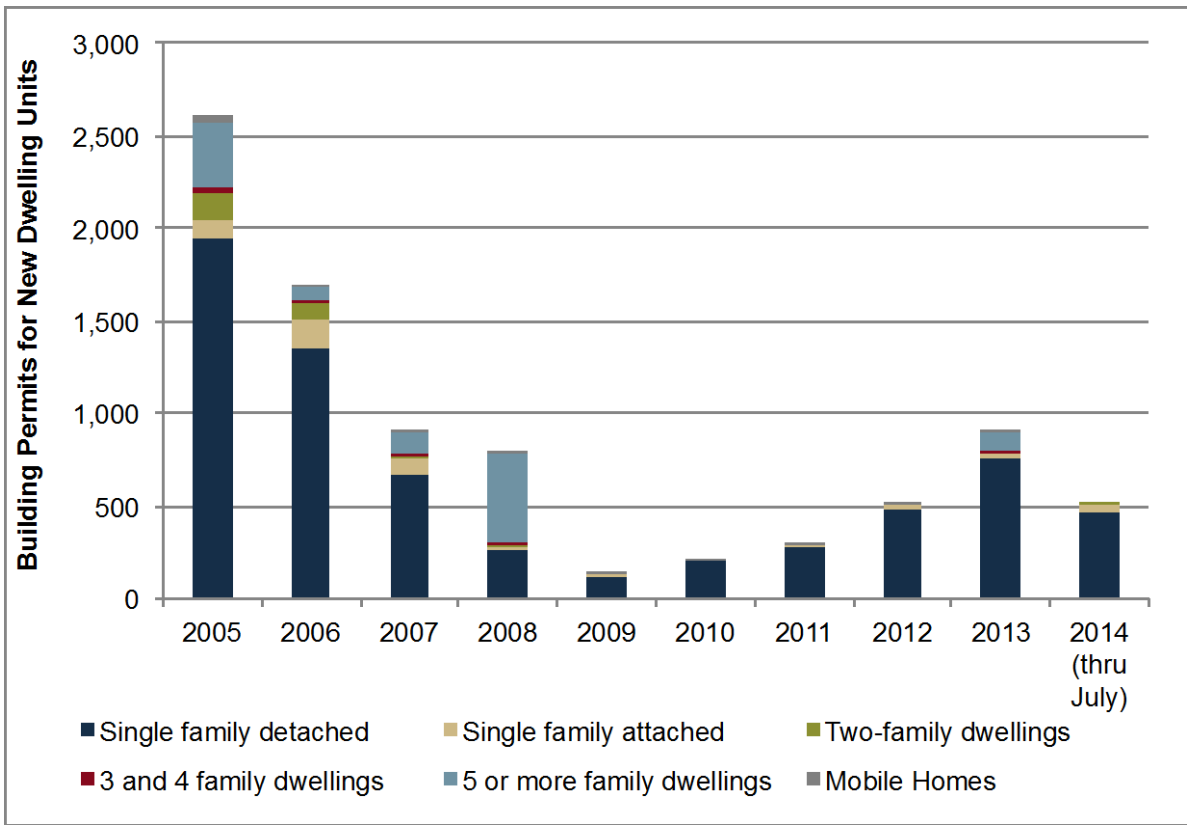
Table 1 and Figure 1 show residential permits for new dwelling units by housing type between 2008 and 2014. The totals are the same figures presented in Figure 1. The data clearly show that the majority of residential development in Bend has been single-family detached housing types. Excluding duplexes, no multifamily development occurred in Bend between 2009 and 2012.

Table 1. Total Permits Issued for New Residential Development (in dwelling units) by Housing Type and Year, 2005 through end of July 2014, Bend

Housing Type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 (thru July)
Single family detached	1,946	1,351	676	268	115	199	282	486	752	464
Single family attached	102	167	83	6	13	5	5	17	30	41
Two-family dwellings	150	74	15	16	0	6	2	6	9	7
3 and 4 family dwellings	24	14	16	10	0	0	0	0	3	0
5 or more family dwellings	352	74	118	485	0	0	0	0	104	0
Mobile Homes	34	26	11	10	4	15	3	12	9	0
Total	**2,608**	**1,706**	**919**	**795**	**132**	**225**	**292**	**521**	**907**	**512**

Source: City of Bend building permit data; analysis by ECONorthwest

Figure 1. Total Permits Issued for New Residential Development (in dwelling units) by Housing Type and Year, 2005 through end of July 2014, Bend



Source: City of Bend building permit data; analysis by ECONorthwest

Table 2 shows new dwellings permitted in Bend for the January 1999 and June 2008, between July 2008 and 2008 through end of June 2014 periods by housing type. The data are consistent with the analysis in Table 1 that shows that the majority (about 3/4) of housing development in Bend during these periods was single-family detached housing.

Table 2. Total Permits Issued for New Residential Development (in dwelling units) by Housing Type and Year, 2008 through end of July 2014, Bend

	1999-June 2008		July 2008-June 2014		Total Units		Annual Average (1999-July 2014)	
Housing Type	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Single family detached	10,455	74%	2,363	81%	12,819	75%	916	75%
Single family attached	463	3%	112	4%	575	3%	41	3%
Two-family dwellings	1,029	7%	34	1%	1,063	6%	76	6%
3 and 4 family dwellings	366	3%	8	0%	374	2%	27	2%
5 or more family dwellings	1,346	10%	347	12%	1,692	10%	121	10%
Mobile Homes	420	3%	48	2%	468	3%	33	3%
Totals	**14,079**	**100%**	**2,912**	**100%**	**16,991**	**100%**	**1,214**	**100%**

Source: City of Bend building permit data; analysis by ECONorthwest

OPTIONS FOR ADDRESSING NEEDED HOUSING MIX

A key question for the City is how to apply the needed housing mix assumption given the development that occurred between 2008 and 2014. Regardless of which mix trend[2] the City ultimately selects, two options for application of the trends exist:

- **Option A:** Apply the mix to the total number of needed housing units for the 2008 through 2028 period.
- **Option B:** Apply the mix to the remaining number of needed housing units for the 2014 through 2028 period.

In short, the question is how the City accounts for residential development that has already occurred. Table 4 illustrates the different outcomes that result from these two options. To summarize the analysis in the table:

- **2008-2028 need projection (Trend 2).** This is the application of the needed housing mix to the total number of needed new dwelling units for the 2008-2028 time period (16,681). This is presented for reference only.
- **Units permitted July 2008 to end of June 2014**. This is the number of new dwelling units permitted in Bend during this period. In short, it is the increment of total housing growth that has already occurred.
- **Option A: Deduct units built by type from Trend 2 mix to determine 2014-2028 remaining need by housing type**. This is the difference between the total need by type (the 2nd column) and the units permitted since 2008 by type (the 4th column). For example, for single-family detached, 9,175-2,411=6,764. The approach assumes that the needed housing mix applies to the entire 2008-2028 period and that the City would need to plan for the remaining needed housing units of each type.
- **Option B: Apply Trend 2 mix to total 2014-2028 remaining need.** This approach applies the needed mix to the total remaining needed housing units (13,770). For example, single-family attached is derived by multiplying 13,770 by 55% (equals 7,574). This methodology assumes that the City would plan for the needed housing mix for the remaining increment of total housing need.

[2] The housing mix trends presented in the August 19 memo were as follows: Trend 1 was a housing mix of 60% single-family detached, 7% single-family attached, and 33% multifamily housing types. Trend 2 is a housing mix of 55% single-family detached, 10% single-family attached and 35% multifamily.

Table 3. Application of Trend 2 Housing Mix Assumptions for the 2014-2028 period

Column 1	2	3	4	5	6	7	8
Housing Type	2008-2028 need projection (Trend 2)		Units permited 2009 to end of July 2014	Option A 2014-2028 remaining need by housing type (Trend 2)		Option B 2014-2028 remaining need - mix applied to total (Trend 2)	
Single-family detached (including mobile homes)	9,175	55%	2,411	6,764	49%	7,574	55%
Single-family attached	1,668	10%	112	1,556	11%	1,377	10%
Multifamily	5,838	35%	389	5,450	40%	4,819	35%
Total	**16,681**	**100%**	**2,912**	**13,770**	**100%**	**13,770**	**100%**

The project team recommends using Option B – applying the Trend 2 mix to the total 2014-2028 remaining need (shaded cells in Table 4). We make this recommendation because:

- The City will be considering policy options to achieve the needed mix. Those policies were not in place between 2008 and 2014. Because the City had not adopted any policies to help achieve the needed mix, one would not anticipate any substantial changes in development trends (which is what was observed between 2008 and 2014).
- The application of the alternative methodology (Option A) would result in a total need of 49% single-family detached housing types. This is 6% lower than the Trend 2 need discussed in the TAC and USC meetings and was not a part of those discussions.
- DLCD staff have given a provisional acceptance of the recommended methodology.

PERSONS IN GROUP QUARTERS

The Remand did not comment on the deduction for persons in group quarters. The City assumed that the percentage of persons in group quarters in Bend would remain the same as reported in the 2000 Census (2.3%). The City assumed that 886 persons would require group housing for the 2008-2028 period. Because this issue was not raised in the Remand, the consulting team recommends continuing to use this assumption.

The next issue related to persons in group quarters is determination of land needed for group quarters housing. A common assumption is that group quarters housing is developed at densities comparable to multifamily housing. The average density for multifamily housing types developed in Bend between 1999 and 2008 was 16.0 dwelling units per net acre.

The next issue is what household size to assume for group quarters. No data exists on the number of people per “dwelling” for group quarters, but it is reasonable to assume household sizes comparable to those for standard multifamily housing. In 2000, Bend had an average of 1.92 persons per household in multifamily dwellings.

Table 4 shows a rough estimate of land needed to house persons in group quarters based on the assumptions described above. Based on the assumptions described above, Bend will need about 29 acres of land for group quarters units.

Table 4. Rough estimate of land needed for group quarter units, 2008-2028

Variable	Number
Persons in Group Quarters, 2008-2028	886
Average persons per GQ unit	1.92
Needed GQ units	461
Average net density of GQ units	15.8
Needed net acres of GQ units	**29**

SECOND HOMES

The 2008 Housing Needs Analysis identified a land need of 500 acres for second homes. In a 2011 memorandum to the Remand Task Force, staff summarized the issue as follows:

> "Findings adopted with the 2009 UGB amendment estimated that second homes could be expected to absorb 500 acres of residential land during the 2008-28 planning period. This estimate was based on evidence in the record that the number of second homes forecasted to develop in the future could be expressed as a proportion of total housing units for permanent residents. Specifically, the City estimated that new second homes, equivalent to 18% of needed housing units, could be expected to be built in Bend during 2008-28. This would amount to slightly over 3,000 units. Based on an average density assumption of 6 units per acre, these second homes would occupy 500 residential acres that would otherwise be available for permanent residents (see Record p. 7692). The total amount of residential acres needed for the planning period was adjusted to include these 500 acres (see Record p. 1058)."

In summary, LCDC accepted the City's findings on this issue, and the factual base which supports them. LCDC added:

> "If during the remand process the density assumption of 6 units/acre for second homes is revised, the 500-acre estimate adopted in 2009 will be revised upward or downward accordingly."

It is likely that the revised analysis will result in a revised average density assumption. The consulting team's recommendation at this time is to:

- Assume that the mix of second homes is similar to the mix for needed housing units
- Assuming that the average density of second homes is similar to the overall average density of needed housing

The consulting team is proposing to use the Envision Tomorrow model to develop a revised estimate of land need for second homes.

SUMMARY

The key discussion items for the January Residential TAC meeting are:

- Does the TAC have other questions about residential development trends based on this analysis?
- Does the TAC agree with recommended approach for addressing the needed housing mix for the remainder of the planning period (2014-2028)?
- Does the TAC have any comments about assumptions related to group quarters housing or need for second homes.

Memorandum

January 21, 2015

To: Residential Technical Advisory Committee
Cc: Project Team
From: Angelo Planning Group Team
Re: Scenarios Discussion Guide – Crafting Hybrid Scenarios

INTRODUCTION

The purpose of this memorandum is to provide guidance to the TAC regarding crafting of the next scenarios for the current UGB. As noted in the scenario analysis memo, the team's work to date has created an analysis and a working understanding about how individual elements of the scenarios perform. The team has been careful to note that these results should not be interpreted as final scenarios. Rather, the team recommends that the TAC discuss the working findings, and select which elements to advance as bookends for further evaluation in Phase 2 of this effort. This memo describes a detailed agenda and provides some questions intended to help organize that discussion by the TAC.

DETAILED AGENDA FOR SCENARIOS DISCUSSION

The following is a proposed approach for discussing the scenarios and obtaining TAC direction on preferred elements. It is a detailed agenda for Agenda Item 4, UGB Scenarios and Envision Tomorrow Analysis and Results.

Step 1 – Presentation and discussion

Staff will summarize key points from the analysis, working from the memorandum titled Draft Analysis of Current Urban Growth Boundary – Base Case and Scenarios.

TAC questions and comments will be taken "as we go", with the facilitator managing time.

Step 2 – TAC preferences regarding Opportunity Area scenarios to advance

This part of the discussion will focus on Opportunity Areas, starting with those which showed the most marked influence on housing capacity and urban form. Using the analysis results – principally Table 2 and Table 5 – the TAC will discuss the Opportunity Areas, focusing on those which vary most significantly by scenario and determine:

- Which of the Opportunity Area scenarios (Scenarios 1, 2, or 3) should be advanced into the next round? In the interest in narrowing, the team's preference is for one of the three to be selected, but the TAC may identify more than one or a hybrid idea.

The order of review will be as follows:

- Opportunity Area 1 – 3rd Street
- Opportunity Area 4. SW Century Drive
- Opportunity Area 6. Juniper Ridge
- Opportunity Area 7. SE 15th / JL Ward Co Properties
- Other Opportunity Areas

Criteria

How should the TAC determine which scenarios to advance? We suggest the following criteria, which are the guiding criteria for project recommendations.

- Meeting Remand and related legal requirements, with a special focus on:
  a. Meeting the City's proposed housing need and mix
  b. Ensuring development is "reasonably likely", i.e. generally feasible from a market perspective

- Meeting the project goals

- Creating explicit urban form outcomes which support the above criteria

Please see attached for a summary of key Remand requirements and the project goals adopted by the UGB Steering Committee.

Step 3 – TAC preferences regarding which code-related Efficiency Measures to advance

Staff will recap which efficiency measures appear to be "drivers", i.e. those that have a relatively higher influence on housing capacity and mix.

Using the results of the analysis in the Results section, the TAC will discuss the efficiency measures. As a starting premise, the team recommends that the TAC identify a range of efficiency measures to carry forward, therefore shaping the bookends for Phase 1 conclusions that will be carried into Phase 2. The specific questions for the TAC are:

- Which of the efficiency measures should not be carried forward in either of the packages? Which efficiency measures should be refined in the next scenario evaluation?

The criteria for selecting efficiency measures are the same as described above for the Opportunity Areas.

Summary of Key Remand Requirements

Relevant to Recommendations for the Current UGB

Enclosed for the TAC's consideration are a brief summary of some of key remand requirements relevant to the review of efficiency measures. The TAC will also find the Remand Index attached for reference. When evaluating which opportunity areas and scenarios to take forward into Phase 2, please consider the following:

- Goal 10, the Goal 10 implementing rule, and the needed housing statutes also require that the City analyze needed housing types at particular price ranges and rent levels commensurate with the financial capabilities of present and future residents of area residents.
- …under Goals 10 and 14 the City also must consider the *future* housing needs of area residents during the (twenty-year) planning period. The purpose of the analysis of both past trends and future needs is that -- if there is a difference – the local government must show how it is planning to alter those past trends in order to meet the future needs.
- if the *future* needs require a different density or mix of housing types than has occurred in the past, then ORS 197.296(7) requires the local government to show how new measures demonstrably increase the likelihood that the needed density and/or mix will be achieved
- On remand, the City also must explain why it believes particular areas planned to meet the future housing needs of residents are appropriate for the expected housing types
- On remand, the City must address both prior trends (as required by ORS 197.296(5)) and recent existing steps it already has taken to increase density and meet its housing needs. The requirement of Goal 14 to reasonably accommodate future land needs within its UGB does not allow the city to use an unreasonably conservative projection of future development capacity
- Under Goal 10 and ORS 197.296 the City must adopt definitive measures and find, based on an adequate factual base, that those measures demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next 20 years.

Project Goals – Adopted by the UGB Steering Committee September 4, 2014

A Quality Natural *Environment*

As Bend grows, it preserves and enhances natural areas and wildlife habitat. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Balanced Transportation System

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

Great Neighborhoods

Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks. Small neighborhood centers provide local shops, a mix of housing types, and community gathering places. The character of historic neighborhoods is protected and infill development is compatible.

Strong Active Downtown

Bend's downtown continues to be an active focal point for residents and visitors with strong businesses, urban housing, civic services, arts and cultural opportunities, and gathering places. Parking downtown is adequate and strategically located. Planning in other areas continues to support a healthy downtown.

Strong Diverse Economy

Bend has a good supply of serviced land planned for employment growth that supports the City's economic development goals, provides a range of diverse jobs and industries, and supports innovation. Employment areas, large and small, have excellent transportation access.

Connections to Recreation and Nature

Bend continues to enhance its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city.

Housing Options and Affordability

Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing design is innovative and energy efficient.

Cost Effective Infrastructure

Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

Bend UGB Remand Scope Index (April 2014)

Remand Subissue	Directives to City on Remand
Buildable Lands Inventory	
2.2 (Analysis) Page 24	1. Additional findings also are necessary to clarify how the City considered "redevelopable" lands. 2. On remand, the City must analyze the development capacity of the vacant and redevelopment lands in light of the actual trends in redevelopment of developed properties and infill of vacant properties. 3. While the Commission understands that this development may have utilized much of the vacant and redevelopable land within the prior UGB, to the extent the City projects that it will deviate from those past trends significantly in the future, the City needs to explain why in its findings
2.2 (Conclusion) Page 26	4. The city's findings must explain what criteria it uses (based on ORS 197.296, OAR 660-024 and 660-008) to determine whether particular lands are vacant or redevelopable, examine the amount and type of development that has occurred on the vacant and redevelopable lands since its last periodic review, and project the capacity of the city's buildable lands (prior to additional measures being implemented) based on that analysis (and as further detailed in connection with Goal 14, below). 5. If the amount of redevelopment and infill within the city's UGB is projected to differ significantly from past trends, the City must explain why, and provide an adequate factual and policy basis to support that change 6. The city's buildable lands inventory may not exclude lots and parcels smaller than 0.5 acres with no improvements without specific findings consistent with OAR 660-008-0005. 7. City may not exclude lots and parcels subject to CC&Rs unless it adopts specific findings, supported by an adequate factual base, that show why the lands are not available for development or redevelopment during the planning period. 8. City has agreed to reexamine lands it identified as "constrained" to determine whether the lands are buildable under OAR 660-008-0005.
2.2 (Director's Report) Page 45	9. Include a map of buildable lands, as required by ORS 197.296(4)(c), as well as a zoning map and a comprehensive plan map for the lands within the prior UGB; 10. Include as its inventory of buildable lands, an analysis for each residential plan district of those lands that are "vacant," and of those lands that are "redevelopable" as those terms are used in ORS 197.296(4)-(5) and OAR 660-008-005(6). As part of this inventory, include an analysis of what amount of redevelopment and infill has occurred, and the density of that development, by plan district, since 1998. The inventory must include the UAR and SR 2 ½ plan districts, as well as the RL, RS, RM and RH district 11. If the city excludes lands on the basis that there is not a strong likelihood that existing development will be converted to more intense residential uses during the planning period, include an analysis of lands within all districts showing the extent to which infill and redevelopment has or has not occurred since 1998 12. For each zoning district, analyze the number of units, density and average

	mix of housing types of urban residential development that has actually occurred since 1998 (including through rezoning) and how much of this occurred on vacant lands, and how much occurred through redevelopment 13. For each zoning district, analyze whether future trends over the 20-year planning period are reasonably expected to alter the amount, density and mix of housing types that has actually occurred since 1998 14. For each zoning district, adopt findings and conclusions regarding the number of units, the density, and the mix of housing types that the city concludes is likely to occur over the planning period, and identify how much is expected to occur on vacant lands, and how much is expected to occur through redevelopment
Housing Needs Analysis – Goal 10	
2.3 (Analysis) Pages 31-32	15. While the City is free to *separate* the three basic housing types required to be analyzed by statute into subcategories, it may not *combine* categories as this effectively makes it impossible to do the analysis required by statute 16. Goal 10, the Goal 10 implementing rule, and the needed housing statutes also require that the City analyze needed housing types at particular price ranges and rent levels commensurate with the financial capabilities of present and future residents of area residents. 17. …under Goals 10 and 14 the City also must consider the *future* housing needs of area residents during the (twenty-year) planning period. The purpose of the analysis of both past trends and future needs is that -- if there is a difference – the local government must show how it is planning to alter those past trends in order to meet the future needs. 18. if the *future* needs require a different density or mix of housing types than has occurred in the past, then ORS 197.296(7) requires the local government to show how new measures demonstrably increase the likelihood that the needed density and/or mix will be achieved.
2.3 (Conclusion) Pages 32-33	19. remands the city's decision for it to revise its findings and chapter 5 of its comprehensive plan consistent with the preceding analysis
2.3 (Director's Report) Pages 45-46	20. Revise the Housing Needs Analysis to comply with ORS 197.296, OAR 660-008-0020, and ORS 197.303. The Housing Needs Analysis must include an evaluation of the need for at least three housing types at particular price ranges (owner occupancy) and rent levels (renter occupancy), and commensurate with the financial capabilities of current and future residents. Those housing types include: (a) attached single family housing (common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot pursuant to OAR 660-008-0005(1)); (b) detached single family housing (a housing unit that is free standing and separate from other housing units pursuant to OAR 660-008-0005(3); and (c) multiple family housing (attached housing where each dwelling unit is not located on a separate lot pursuant to OAR 660-008-0005(5)); 21. Adopt the revised Housing Needs Analysis as an element of the comprehensive plan, along with findings that demonstrate how the revised Housing Needs Analysis complies with the applicable statutory, goal and rule requirements described above;

	22. Analyze what the mix of plan designations should be in the UGB expansion area in direct relation to the city's projected housing needs, and consider the adoption of new residential plan districts that encourage more multi-family, higher density single family housing, and other needed housing types for a greater proportion of the expansion area, in order to meet the city's and the region's demonstrated housing needs;
2.4 (Analysis) Page 35-	23. The City must (under Goal 10 and the needed housing statutes) plan for an adequate supply of buildable land for affordable housing, including workforce housing (whether that land is inside the prior UGB, on lands in a UGB expansion area, or both). 24. On remand, the City also must explain why it believes particular areas planned to meet the future housing needs of residents are appropriate for the expected housing types.
2.4 (Conclusions) Page 35	25. The City must plan lands within its existing UGB and any expansion area so that there are sufficient buildable lands in each plan district to meet the city's anticipated needs for particular needed housing types. 26. To the extent that the City continues to determine that there is a current and projected future shortage of land for affordable housing that translates into a need for more multi-family housing, the City must show how it's planning for lands within the exiting UGB and lands in any expansion area will provide sufficient buildable lands in plan districts that are designed to meet that need. 27. If the City continues to project a future housing mix of 65% single-family and 35% multi-family, it must explain why that housing mix will provide sufficient buildable lands to meet its projected future housing needs over the planning period, and that projection and explanation must be supported by an adequate factual base.
2.8 (Analysis) Page 47	28. The City agreed to adopt findings clarifying why its decision is consistent, and the Commission concurs that this issue can be resolved by the adoption of findings explaining why the city's decision is consistent with its plan policies.
2.8 (Conclusion) Page 47	29. The Commission denies the city's appeal for the reasons stated above, but also clarifies that its remand is solely for the lack of adequate findings by the City.
HNA and Efficiency Measures	
3.1 (Analysis) Pages 50-53	30. LCDC concluded that the City's densities for housing were, in their view, low 31. Need to determine if raising the minimum densities of the residential zones is necessary to encourage the development of needed housing 32. On remand, the City must address both prior trends (as required by ORS 197.296(5)) and recent existing steps it already has taken to increase density and meet its housing needs. The requirement of Goal 14 to reasonably accommodate future land needs within its UGB does not allow the city to use an unreasonably conservative projection of future development capacity 33. Nevertheless, given the apparent market demand for increasing density

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	relative to existing planning and zoning designations, the City must explain why increasing the density allowed, particularly for large blocks of vacant land outside of existing established neighborhoods, is not reasonable during the 20-year planning period. 34. The Director's Decision identifies a number of other efficiency measures that the City should consider (drawn from the city's own Residential Lands Study), but that list is not intended to be exclusive or directive; it is up to the City to determine in the first instance what is reasonable to accommodate its future housing needs within its UGB (See Director's Decision 45-46)
3.1 (Conclusion) Pages 53-54	35. The City must reconsider the projected capacity of lands within its prior UGB for residential development during the planning period in light of its revised BLI, recent development trends, and existing and potential new measures to increase that capacity. 36. The measures the City considers must include, but are not limited to, evaluating the infill capacity (including plan and zone changes) of residential lands with more than five acres that are vacant or partially vacant. 37. The City also should consider the measures as listed in the Director's Decision, at 45-46, that are related to efficiency measures.
3.1 (Director's Report)	38. Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers; 39. Consider splitting the existing RS zone, which covers most of the residential areas of the city, into two or more zones in order to encourage redevelopment in some areas while protecting development patterns in well-established neighborhoods; 40. In areas where the city is planning significant public investments, consider upzoning as a means to help spread the costs of such investments; 41. Consider strengthening the minimum density provisions in the existing UAR and SR 2½ zones by eliminating PUDs and other clustering tools; and 42. Consider strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types, rather than relying on low density residential development.
3.2 (Analysis) Pages 55-56	43. Under Goal 10 and ORS 197.296 the City must adopt definitive measures and find, based on an adequate factual base, that those measures demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next 20 years. 44. The City agreed, on remand, to include provisions in the General Plan requiring adoption and implementation of the Central Area Plan and rezoning of lands along transit corridor as described in its findings.
3.2 (Conclusion) Page 56	45. …directs the City on remand to address the requirements of ORS 197.296(7) and (9) with respect to any new efficiency measures that it relies on. 46. The City may do this by adopting specific timelines for initiation and completion of efficiency measures, including detail about the outcomes that will be achieved as part of the Housing Element of its comprehensive plan. 47. The City also must adopt findings that show why those outcomes are more likely to occur as a result of the measure(s), and how they relate to needed

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	housing types and locations. 48. In addition, in coordination with its Work Plan for Outstanding Metropolitan Transportation Planning Work (issue area 8), if the City continues to rely on these two particular measures, it must: 49. Within two years following acknowledgement, complete and adopt the Central Area Plan. The Plan must include provisions that plan for at least 500 additional medium-density and high-density housing units over the planning period. 50. Within two years following acknowledgement, complete and adopt provisions of its comprehensive plan that authorize at least 600 additional medium-density and high-density housing units on lands abutting or within ¼ mile of existing or planned transit routes.
Other Land Needs	
4.1 (Analysis) Page 58	51. Absent the safe-harbor, the City must demonstrate that the identified need for institutional, private open space and private rights-of-way is an urban need that must be accommodated within the expansion area. 52. …the City's findings must explain why the City believes that the increase from 12.8 percent to fifteen percent is justified
4.1 (Conclusion) Page 59	53. (a)dopt findings that explain why an increase in the amount of land required for these uses from 12.8 percent to fifteen percent is justified. To the extent the City is basing its estimate on the need for stormwater facilities, it should explain why such facilities can't be located within open space and right-of way areas. 54. …the city's findings should not be based only on past trends, but should include consideration of future conditions and needs (and explain why the trend will continue or change over the future planning period).
Park & School Land Needs	
4.2 (Analysis) Pages 60-61	55. The City's findings need to be revised to explain clearly what evidence the city relied on for types of projected school and parks needs and siting criteria and the relation to the districts plans. 56. In addition, to satisfy the requirements of ORS 197.296(6)(a), the city's findings should explain how the City has coordinated with the Bend-La Pine School District.
4.2 (Conclusion) Page 61	57. Adopt revised findings explaining what evidence it relied on in determining the amount of land needed for parks and schools, and how that evidence relates to the districts plans and analyses.
4.3 (Analysis) Page 63	58. Given that much of the city's future housing and population growth is projected within its prior UGB, the city's findings should explain how it will meet its future needs for these uses.
4.3 (Conclusion) Page 63	59. The Commission concludes that the City must make findings to address OAR 660-024-0050(4), regarding the extent to which the estimated need for future parks and schools can reasonably be accommodated inside the existing UGB. 60. The required findings must address how the needs analysis accounts for

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	lands already owned by the districts that are outside of the prior UGB, particularly if those lands were determined to not be suitable for urbanization.
Economic Opportunities Analysis – Goal 9	
5.1 (Conclusion) Page 67	61. The submittal is remanded for the City to clarify in adequate findings that it is utilizing its 2008 EOA, scenario B, as the basis for estimating employment land needs
5.2 (Conclusion) Page 70	62. Commission remands the UGB decision to the City to provide an adequate factual base to support use of a 10 percent redevelopment factor, including an analysis of the amount of redevelopment that has occurred in the past and a reasoned extension of that analysis over the planning period 63. Alternatively, the City may satisfy Goal 9 and division 9 by other means, for example through a site-by-site redevelopment analysis. However, a site-by-site analysis is not required; the Commission determines that using a factor is acceptable where findings explain evidentiary basis and address the Goal 14 requirement to reasonably accommodate development within the existing UGB.
5.4 (Analysis) Page 76	64. As a result, in this case (See 1000 Friends of Oregon v. LCDC, __ Or App __, __P3d __ (A135375)) to the extent that the city continues to base some portion of its employment land need on market choice, it must explain how doing so in the factual context provided by the record for the Bend UGB expansion is consistent with the requirements of Goal 9, OAR 660-009-0025, and the "need" factors of Goal 14
5.4 (Conclusion) Pages 76-77	65. On remand, the City must make findings addressing applicable law, including addressing consistency with Goals 9 and 14 as required in *1000 Friends of Oregon v. LCDC,* __ Or App __, __P3d __ (A135375) (September 8, 2010)
5.5 (Analysis) Page 77	66. Under OAR 660-009-0015(3)(a)(C), the EOA Inventory of Industrial and Other Employment Lands for cities and counties within a Metropolitan Planning Organization, must include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land. 67. This short-term supply analysis required for jurisdictions within MPOs is in addition to the EOA inventory requirements applicable to all comprehensive plans for areas within urban growth boundaries. OAR 660-009-0015(3)(a) 68. Furthermore, division 9 requires that comprehensive plans for cities such as Bend "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." OAR 660-009-0020(2).
5.5 (Conclusion) Page 78	69. The Commission concludes that the Goal 9 rule requires the City to include policies for maintaining a short-term supply. 70. The City must plan for required infrastructure and have identified the funding mechanisms.
5.6 (Analysis)	71. (t)he City must establish a basis in reason connecting the inference that the planning period will present higher vacancy rates for industrial and office than historic and current conditions to the trend data from which it is

Page 80	derived. 72. The City may pursue a mechanism to make industrial and commercial rents affordable under the competitive short-term supply, but not by inflating the long-term need beyond what may be supported by substantial evidence in trend data or reasoned inferences there from.
5.6 (Conclusion) Page 80	73. The Commission concluded that under division 9, the long-term vacancy factor should be based on past and projected future trends over the planning period.
5.8 (Analysis) Page 84	74. The City agreed that on remand it would move the analysis and calculation to the residential/other lands analysis and calculation.
5.8 (Conclusion) Page 84	75. The Commission remands the submittal to incorporate analysis of land needs for employment uses within residential zones in the City's housing needs analysis.
5.9 (Analysis) Page 85	76. The City designated a substantial amount of land as Commercial General along Highway 20 in the expansion area. The City concedes that it did not make findings related to the General Plan policies cited by appellant, but agrees to develop findings addressing the policies on remand.
5.9 (Conclusion) Page 85	77. The Commission remands the submittal to the City to allow it to address Commercial Development Policy 27 and 28 contained in Chapter 6 of the Bend Area Plan
Natural Resources – Goal 5	
6.1 (Analysis) Pages 90-91	78. The rule requires the city to evaluate the expansion area where resources are identified and evaluate them for significance and possible protection. 79. The city may use the county's inventory as a starting point, but it must also evaluate other information and make its own determination of significance.
6.1 (Conclusion) Page 91	80. State scenic waterway – Should a revised UGB expansion area include any areas within the Middle Deschutes River Scenic Waterway as described in OAR 736-040-0072, the city must adopt local requirements to implement the state plan for protecting the Middle Deschutes Scenic Waterway, including a setback from the canyon rim for structures. 81. Riparian protection – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must prepare and adopt an inventory of the significant riparian area that either: 1) finds that the topography along the river does not restrict the use of the safe harbor inventory under OAR 660-023-0090(5)(d) and apply the 75 feet upland from top of each bank safe harbor width provided in OAR 660-023-0090(5)(a); or 2) apply the standard inventory methodology, used within the current UGB, to the expansion area. In either case, the significant riparian area will fall within the canyon walls. For a protection program the city will adopt the county measures that serve to protect the scenic waterway and add restrictions for vegetation removal within the significant riparian area. The

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	City must develop the protection program to meet the safe harbor protection measure standards. 82. Wildlife habitat – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must apply OAR 660-023-0110, the Goal 5 wildlife habitat rule, by conducting a safe harbor inventory under OAR 660-023-0110(4). The rule allows the city to limit consideration of significant habitat to the five habitat categories specified in subsections (a)-(e). The Commission understands that the City anticipates that ODFW will provide the City a letter stating that the agency does not have information that any of the five habitat categories are documented, identified or mapped within the portion of the Deschutes River or Tumalo Creek corridors that pass through the expansion area. 83. Tumalo Creek – Should a revised UGB expansion area include Tumalo Creek in the final expansion area, the city must apply the Goal 5 safe harbor inventory and protection measures for riparian areas along the creek. 84. ..the Commission concludes that the City may not exclude identified ASIs from its BLI (if they are already inside the prior UGB), or excluded ASIs from inclusion in the expansion area.
6.3 (Conclusion) Page 95	85. On remand, if the City includes the property in the revised UGB expansion area, the City should only plan for surface mining that portion of the property within the DOGAMI permit 09-0018 area, as the site is not on the county's acknowledged surface mining inventory.
Wildlife Risk – Goal 7	
6.2 (Conclusion) Page 93	86. It is entirely appropriate and permissible for the City to consider relative risk of wildfire in alternate UGB expansion candidate areas in considering the environmental, energy, economic and social consequences of the alternatives under locational factor 3 of Goal 14.
Public Facilities – Goal 11	
7.1 (Conclusion) Page 101	87. The City may adopt public facilities plans as needed for acknowledged land uses within its prior, acknowledged UGB on remand. 88. The city may then, subsequently, adopt revisions to its public facilities plans for any revised UGB expansion proposal and any other related amendments to its acknowledged comprehensive plan.
7.7 (Conclusion) Page 110	89. On remand, the City must address the entire expansion area under Goal 11 and Goal 14, locational factor 2. The City is not required to do so through amendments to its public facilities plan, although it may do so. 90. If the City elects to carry out the analysis(es) of the feasibility of serving the expansion area independently of its public facilities plan, it should nevertheless formally adopt the analysis and incorporate it into the city's comprehensive plan (and the analysis must not conflict with existing provisions of the public facilities plan).
Transportation – Goal 12	
8.1 (Analysis)	91. The city is required to compare lands in the same priority classes under ORS 197.298, Goal 14 and OAR 660-024-0060 (except when lower priority lands

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Pages 114-115	are included as necessary to serve higher priority lands under ORS 197.298(3)(b)). 92. The city may aggregate its underlying data, by TAZs and priority category, and address the results in revised findings
8.1 (Conclusion) Page 115	93. On remand, the city must analyze the relative costs of lands in the same priority category, rather than aggregating its analysis into subareas without regard to the priorities under ORS 197.298.
8.1 (Director's Report) Page 89	94. Identify and assign costs of individual UGB expansion areas, rather than combinations of different areas; 95. Provide additional information regarding the costs of providing transportation facilities to serve individual areas, including any extraordinary costs related to overcoming topographic barriers or rights of way; 96. Provide more detailed analysis of the extent to which the costs of improvements for major roadway improvements in north area (including proposed improvements to Highways 20 and 97) are a result of and should be assigned to development in the north area rather than the city as a whole. (That is, the city's analysis and evaluation should assess whether the extent of improvements in north area might be avoided or reduced in scale or cost if the UGB was not expanded in this area, or if the extent of the UGB expansion was reduced.); and 97. Provide comparable estimates for providing needed roadway capacity for areas that, because of topographic constraints, may need to be served by different types of road networks. For example, growth on the east side can apparently be served by a fairly complete grid of streets, while topographic barriers limit potential for a full street grid in this area.
8.2 (Conclusion) Page 116	98. On remand, the city must revise its findings to address this issue. If the city chooses to rely on existing analysis that there is no cost differential between alternate lands in the same priority category, that decision must be supported by substantial evidence in the record as a whole. 99. While no specific method or outcome is required, the city must explain its basis(es) for assigning the costs of extraordinary improvements to expansion areas in the same priority category, and consider whether changes in the extent or location of the UGB expansion would reduce the need for major improvements in this area.
8.3 (Conclusion) Pages 117-118	100. On remand, the city must revise its findings to address this issue including not only the relative cost of required transportation improvements, but the relative advantages and disadvantages as well. OAR 660-024-0060(8) (which may include the relative amount of development capacity the city can support for a particular unit of cost). 101. On appeal, at oral argument, the city agreed to strengthen its findings in this area to the extent that lands on the west of the city are included in the UGB expansion area on remand.
8.6 (Conclusion) Pages 120-	102. The City is required to comply with OAR 660-012-0035 before it may complete its UGB expansion. 103. The City has agreed to prepare analyses of its baseline VMT per capita in 2003 (with VMT as defined in OAR 660-012-0005), along with an analysis of

121	projected VMT per capita over the planning period with proposed "packages" of land use and transportation measures to reduce VMT per capita. 104. If the City demonstrates that its revised UGB expansion, along with proposed land use and transportation measures, results in an estimated change in VMT per capita: a. of a decline of 5% or more per capita, then the City is in compliance with this aspect of the TPR under 0035(6); b. of a decline of between 0% and 4.99 percent per capita, then the City may proceed by preparing for DLCD/LCDC review and approval concurrently with the revised UGB, a work program/plan to achieve a reduction of 5% or more over the planning period; or c. of an increase in VMT per capita, then the city must prepare, submit and obtain DLCD/LCDC approval of an integrated land use and transportation plan as provided in OAR 660-012-0035(5) prior to approval of a revised UGB.
UGB Methodology & Boundary Analysis (Goal 14)	
9.1 (Conclusion) Pages 129-130	In evaluating which lands to include within its UGB expansion on remand, the City must follow the following steps: 105. Establish suitability criteria for general housing, employment, and related land needs. These criteria must be consistent with (in the sense of implementing, or being in harmony with) the definitions in OAR 660-008-0005(2) (for lands planned for future general residential uses), and 660-009-0005(9) and (12) and 660-009-0025(1) and (2) (for lands planned for future general employment uses) as well as other provisions of law applicable in determining whether the land will meet the city's general land needs. 106. Document the criteria used to locate lands required to meet any "specific identified needs" as allowed by ORS 197.298(3)(a). The identified land needs include a future university site, a medical center, and two large-lot industrial uses. 107. Document (through existing or supplemental findings) that the sites identified by the City for a university, a medical center, and two large-lot industrial uses. The Commission agrees with the City that these identified future uses are justified under 197.298(3)(a). The City must demonstrate, however, through additional findings, that these future uses cannot reasonably be accommodated within the prior UGB. 108. Apply the suitability criteria (from step 1, above) for general housing, employment and related land needs to exception lands within the expansion study area. In this step, the City must identify exception lands (including lands designated by the City as urban area reserve) that will not accommodate any of its general land needs during the planning period. These lands may be "screened out" from further analysis. 109. For its remaining (general) future land needs over the planning period, the City must compare the remaining (after the screening described above for suitability) exception lands using the Goal 14 locational factors to determine which of those lands are best to include in its UGB expansion area.42 In this step, the City may rely on ORS 197.298(3)(c) (maximum efficiency of land uses *** requires inclusion of [resource lands] *** to include or to provide services to [the exception lands]") to include resource lands, particularly

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	resource lands interspersed with exception lands, within its UGB expansion area. Resource lands included under ORS 197.298(3)(c) need not be evaluated for soil capability, as called for under ORS 197.298(2). 110. If the City is unable to accommodate its need for additional lands during the planning period after undertaking the preceding steps, it may then evaluate lands in the next priority category under ORS 197.298(1) (e.g., resource lands) for its general land needs. If theh City does so, it must consider resource lands with lower soil capability first, as specified in ORS 197.298(2). To the extent that resource lands are needed to meet remaining (general) future land needs over the planning period, the City must apply the general suitability criteria used in Step 1 (above) and then compare suitable resource lands using the Goal 14 location factors to determine which of those lands are the best to include in its UGB expansion area.
9.2 (Analysis) Page 131	111. The remaining work for the City on remand is simply to show, using those criteria, that the uses "cannot reasonably be accommodated" within the prior UGB.
9.2 (Conclusion) Pages 131-132	112. The City must, however, analyze whether these needs could reasonably be accommodated within the prior UGB using its site suitability criteria and buildable lands inventory, and adopt findings explaining its reasoning.
9.3 (Analysis) Page 132	113. The City will need to work through the particular application of ORS 197.298(3)(c) to the facts on remand, and that application may depend, in part, on what the City does with its public facilities plans.
9.3 (Conclusion) Page 133	114. ORS 197.298(3)(c) may be used, as described above under issue 9.1., where resource lands are interspersed with exception lands, and in order to urbanize (provide public services to) exception lands that couldn't otherwise be served.
Implementation – Plan & Zoning Designations	
10.2 (Conclusion) Pages 141-142	On remand, the city and county must: 115. Clearly designate on the appropriate comprehensive plan map, the areas planned for the specific identified land needs described in the city's analysis under 197.298(3)(a), and include policies to assure that the lands are, in fact, used for their intended purpose; 116. Either maintain the former county zoning districts until areas added to the UGB are ready to urbanize, or specifically determine that interim zoning designations maintain the likelihood that the land will develop for the uses and at the intensity that the city's underlying analysis of the capacity of the lands is based on; 117. If the County or City adopt interim zoning for the UGB expansion area, they must determine that the assigned interim zoning in each area will not generate more vehicle trips than development allowed by the zoning designations in place before the UGB expansion; and 118. The City and County must coordinate, and clarify the applicability of the city's plan map and plan policies, including its Framework Plan map, within the

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	UGB expansion area.

Memorandum

January 21, 2014

To:	Residential and Employment Technical Advisory Committees
Cc:	Project Team
From:	Angelo Planning Group Team
Re:	Draft Analysis of Current Urban Growth Boundary – Base Case and Scenarios

INTRODUCTION

This memorandum describes the initial results of the Envision Tomorrow analysis of the Bend UGB Base Case and two additional growth scenarios and packages of efficiency measures. These scenarios were created through the residential and employment Technical Advisory Committee (TAC) recommendations and input from the December 15, 2014 Workshop. Descriptions of the analysis and preliminary results are provided in this memo, followed by a set of illustrative maps and other detailed information included in Appendices.

This memorandum focuses on results from the Envision analysis. The "Analysis and Interpretation" section discusses the implications of these results and evaluates them with regard to project goals, capacity estimates, and other measures.

Important note: The scenarios described in this memorandum are not final proposals or recommendations. These initial results from Envision Tomorrow should not be interpreted as choices to pick from; rather, they present information about how various scenarios and assumptions combine. TAC discussions are expected to result in hybrid scenarios for further discussion and recommendation to the UGB Steering Committee. It is also worth noting that refinements required to implement some of the scenarios related to transit and bike/pedestrian systems will need to be addressed later in the process since it is impractical to provide such detailed planning at this early stage.

Purpose and Goals of the Analysis

The purpose of the analysis is to:

- **Estimate capacity of existing UGB** to accommodate housing and employment growth under current policies, plan designations, and trends, and given various options and combinations of "efficiency measures" to encourage more growth within the current UGB.
- **Evaluate the impacts** of the base case and efficiency measure scenarios against the project goals and remand requirements.

- **Provide the basis for estimating residual housing and employment which will lead to land need** for expansion of the UGB. As noted previously, the team expects this will be a range of land need based on application of different types or combinations of efficiency measures.

In addition to these primary purposes, the City has a number of important goals in conducting the analysis and ultimately determining which types of efficiency measures to implement, including:

- Use certain non-residential areas and large blocks of vacant land to achieve desired urban form outcomes
- Meet Remand requirements
- Ensure that new development uses remaining available land within the UGB efficiently
- Refine requirements for multi-family and single family attached housing to help those housing types get built and achieve the needed future housing mix for the City
- Remove regulatory barriers to desired employment land (re)development
- Achieve the community goals and vision identified at the outset of the planning process (Project goals are provided in Appendix A)

The work being performed to meet the above goals is on-going. Each of the above-listed goals are being addressed the project's Phase 1 evaluation of the current UGB. That work will be refined as the UGB expansion work is conducted in Phase 2.

Overview of Approach

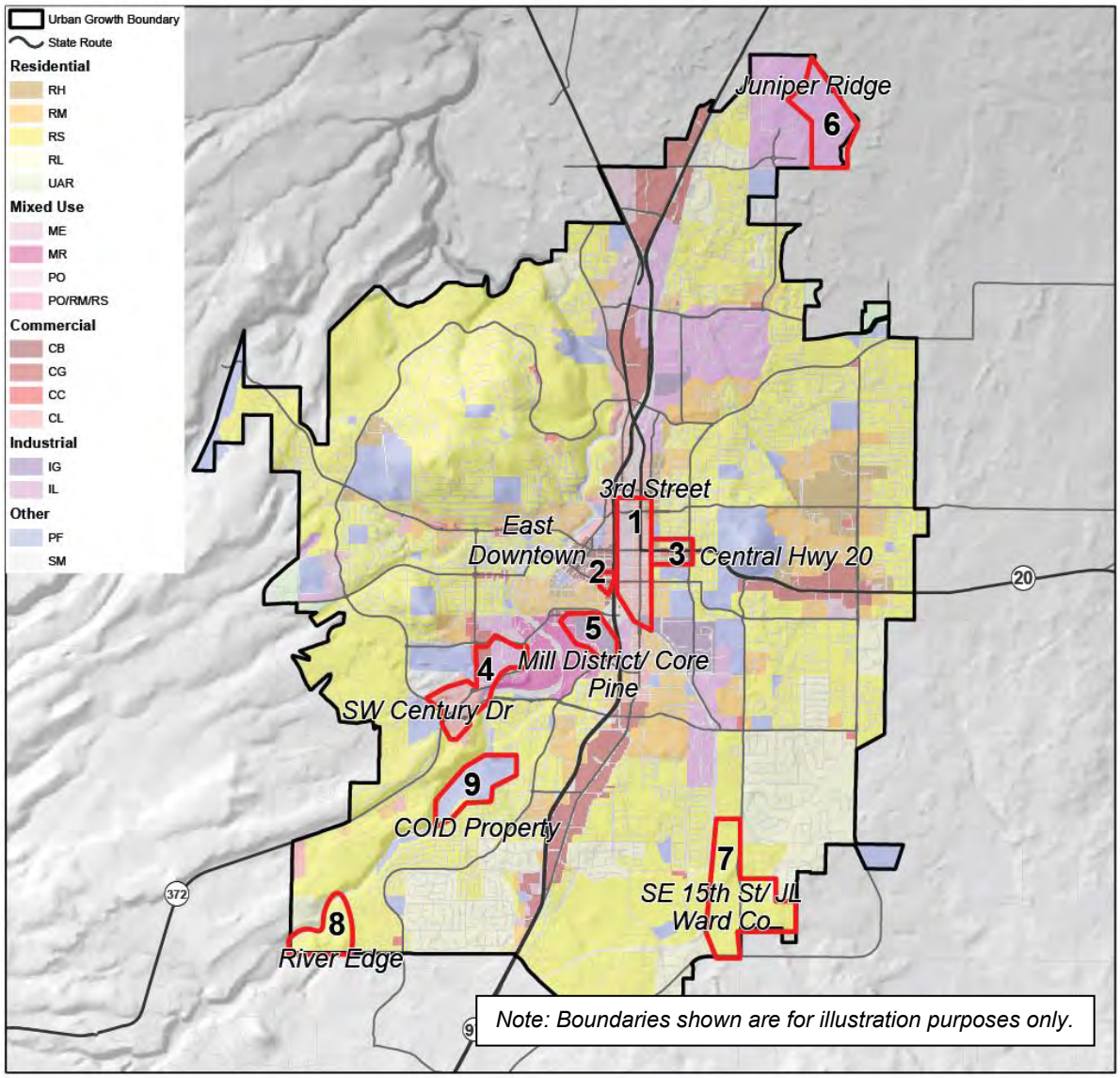
The project team has used the Envision Tomorrow scenario model to evaluate three different growth scenarios:

- **Scenario 1 – "Base Case":** This development scenario incorporates an updated 2014 Buildable Lands Inventory (BLI), including a variety of assumptions about infill and redevelopment which have been calibrated to recent trends consistent with the City's updated Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA)
- **Scenario 2 – "Intensify":** A refined version of the base case which incorporates options for location-specific changes (changes to current plan designations for specific parcels, districts, or other areas) recommended by the project's residential and employment Technical Advisory Committees. In general, Scenario 2 intensifies development in nine different opportunity areas where there is more capacity for future development in the form of vacant land or land with infill and redevelopment potential.
- **Scenario 3 – "Intensify and Mix":** This scenario is based largely on results of a joint workshop with members of the residential and employment Technical Advisory Committees and UGB Steering Committee conducted on December 15, 2014. At this workshop, the committees formed six groups, each of which was tasked with reviewing TAC recommendations of opportunity areas and either affirming or proposing alternative development options. There was significant agreement among the small groups regarding affirmation of or changes to TAC recommendations in individual areas. The

project team used this guidance to develop Scenario 3. In general, this scenario represents both intensification from Scenario 2 and further mixing of different types of land uses within the opportunity areas.

The nine opportunity areas referenced above are shown on Figure 1. The differences between the scenarios in each opportunity area are discussed in detail in the "Results" section of this memorandum.

Figure 1. Opportunity Areas



In evaluating the three scenarios, the project team also applied a set of development code-based, broadly-applicable efficiency measures. These measures affect land throughout the City that is projected to undergo development or redevelopment during the planning horizon. Three different sets of measures were tested:

- **Package A – Current Code:** No additional code efficiency measures
- **Package B – Revised Code:** Market-oriented development code efficiency measures
- **Package C – Revised Code & Additional Efficiency Measures:** Market-oriented & additional development code efficiency measures

The efficiency measures included in these packages are described in an earlier memorandum.[1] They are discussed further in the "About the Scenarios" section of this memorandum. Details about how these efficiency measures were operationalized in the Envision Tomorrow model are provided in Appendix D.

The project team has used a "Matrix" approach to test combinations of development scenarios and efficiency measures. Table 1 below shows the nine total scenarios analyzed.

Table 1. Development Scenarios and Efficiency Measures Matrix

	Package A Current Code	**Package B** Revised Code	**Package C** Revised Code & Additional Efficiency Measures
Scenario 1 – Base Case No location-specific changes	Scenario 1A	Scenario 1B	Scenario 1C
Scenario 2 - Intensify Location-specific changes largely inspired by TAC recommendations ("intensify")	Scenario 2A	Scenario 2B	Scenario 2C
Scenario 3 – Intensify & Mix Location-specific changes largely inspired by workshop recommendations ("intensify & increase mixing")	Scenario 3A	Scenario 3B	Scenario 3C

About the Model: Envision Tomorrow in Brief

Envision Tomorrow is an open-access scenario planning package that is being employed to analyze future growth patterns and policy decisions impacting growth in Bend. The software, comprised of an ARC/GIS extension and a Microsoft Excel model, develops estimates of how these patterns and policies will impact a range of measures, including growth capacity to travel behavior.

Envision Tomorrow is a suite of planning tools that includes analysis tools and scenario design tools. The analysis tools allows for analysis of aspects of the city using GIS data, such as tax assessor parcel data, the General Plan, and Census data. The scenario painting tool was

[1] "Land Use Efficiency Measures through Development Code Changes – Updated per Residential Lands Technical Advisory Committee direction," December 9th, 2014

utilized to "paint" a series of alternative future development scenarios on the landscape within Bend's UGB, and to compare scenario outcomes for this memorandum.

Envision Tomorrow provides a sketch-level glimpse of the possible impacts of policies, development decisions and current growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, development feasibility, fiscal impacts, transportation, environmental factors, and quality of life. These results illustrate a range of possibilities at the city- and neighborhood scale. The model should not be interpreted as a site-specific prediction of how development will occur over the planning period.

Please see Appendices C through E for additional detail about the model and information about how it is being applied to the UGB scenario evaluation process in Bend.

Building the Scenarios

Buildable Lands Inventory

State requirements dictate that the starting point for determining the capacity for future development within the UGB is an inventory of "buildable" land[2]. In Bend, this inventory is captured the City's Buildable Land Inventory report and database. Buildable land is defined as land that can physically accommodate more development based on the size, zoning, natural resource constraints, and other physical constraints of a given parcel of land. The City does not assume that all land in the inventory is currently available for development or will develop in the future, only that it has the capacity to do so. As of the publish date of this memo, the updated Bend BLI is in process – it will be distributed to the Technical Advisory Committee at a future date. All BLI-related information in this memo is preliminary and subject to change based on TAC input.

This section of the memorandum summarizes the approach to defining and identifying different types of buildable land. More detailed information on this topic will be provided in a separate Buildable Lands Inventory Report.

Development Constraints

The following constraints were identified and counted as unbuildable, consistent with state statute & rule and DLCD / LCDC guidance:

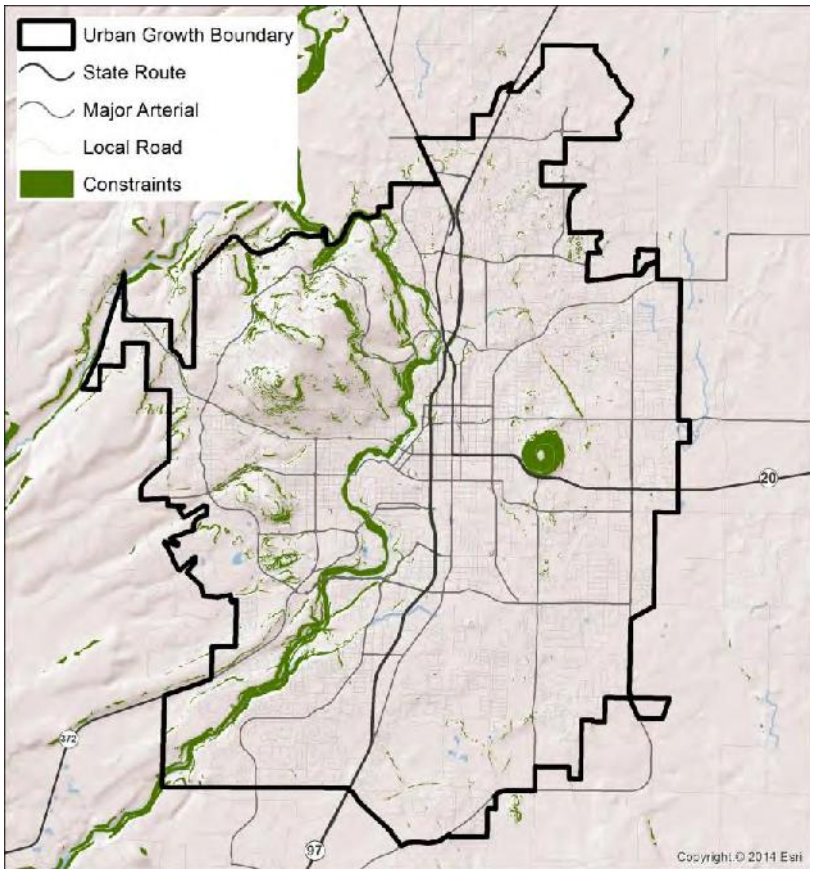
- Floodplains
- Slopes over 25%

Note: Bend's Areas of Special Interest (ASIs) are not allowed to be excluded as unbuildable as they are not acknowledged Goal 5 resources.

Figure 2 shows constrained lands in and around the City of Bend used in the BLI.

[2] OAR 660-008-0005

Figure 2. Constrained Lands



BLI Categories

BLI status categories were assigned to Bend parcels, consistent with state statutes and guidance from the Oregon Department of Land Conservation and Development. The categories are as follows:

Residential land (as required by the Remand Order):

- Developed – Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the zone, and for which the size of the lot does not allow for further division. Residentially zoned land that is currently developed with employment uses is also categorized as Developed.
- Lots Large Enough to Accommodate an Additional Unit under Current Zoning ("Partially Vacant") – Land planned or zoned for residential use that has an improvement value greater than $0, but contains fewer dwelling units than permitted in the zone, and the lot is not large enough to further divide.
- Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential") – Land planned or zoned for residential use that is currently developed, but where the lot is large enough to further divide consistent with its current zoning, based on the minimum lot size of the applicable zone. As with Partially Vacant land, this category does not consider limiting factors such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot.

- Vacant (Completely) – Land planned or zoned for residential use that has an improvement value of $0. Properties that are planned or zoned for residential use, but are dedicated for other uses such as parks, common areas, rights of way or utilities are excluded. Publicly owned land is also excluded.
- Publicly Owned - land in public ownership is assumed to be unavailable for residential use, except where the public ownership has indicated to the City that the land is available for future development.

Note: Only a portion of the land that is classified as "partially vacant" or "developed with infill potential" is assumed to experience infill during the planning horizon, varying by scenario. These areas do not represent geographically-specific proposals or assumptions for future growth, nor do they include any assumptions on market conditions and the extent to which they would motivate a property owner to develop land during the planning period. The development potential for such lands is not taken on a site by site basis; rather, trends analysis already presented to and approved by the TAC is what determines the capacity of these lands for further development.

Employment land (based on definitions in OAR 660 Division 9, and approved by LCDC):

- Vacant - a lot or parcel equal to or larger than one half-acre not currently containing permanent buildings or improvements; or equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements.
- Developed - All other employment land is identified in the BLI map as developed, although only a subset of this will meet the state definition of "developed" land that may be part of the inventory of available employment land ("Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.)

In conducting the BLI, the Residential TAC provided guidance on a variety of policy issues to resolve remaining questions concerning private open space, addressing conflicts between zoning and plan designation, and the BLI status of special districts and mixed use designations.

As noted above, the BLI is currently under review and will be discussed in detail with the Residential and Employment TACs at a later date. BLI information in this memo is preliminary and subject to change

Translating the BLI to Envision Tomorrow

The Envision Tomorrow model projects development based on the acreage of vacant and developed land utilizing assumptions about the types and rates of development/redevelopment; it is not directly linked to the BLI categories defined above. The BLI therefore needed to be translated into compatible information for each category. There is limited information available about the extent of physical development on a given parcel, and the BLI categories are not based on whether there is a realistic ability to add units on a given property given how it is currently developed. Following is a brief description of how lands were considered for the scenario modeling.

Residential land:

Vacant – all unconstrained land considered vacant is utilized by the Envision Tomorrow model.

Lots Large Enough to Accommodate an Additional Unit under Current Zoning ("Partially Vacant") and Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential") – These lands were considered to be developed if the usable portion (estimated through analysis of lot size requirements, existing unit types, and building footprints) was less than one-half acre in size.

Publicly owned land:

These areas were generally considered constrained since they are considered unavailable for residential development or redevelopment. If the public owner has indicated to the City that the land is available for development, it has been classified that way.

Employment land:

All unconstrained land was considered vacant per the state's definitions except where the extent of physical development showed otherwise (estimated based on aerial photography for parcels over five acres with some improvements).

Development Types

Development types act as the "paint" with which scenario maps are "colored". They contain assumptions about various aspects of development, calibrated by the project team with the best available information. Development type assumptions include:

- A mix of specific building types (prepared using the TAC input received in the August, 2014 meetings of the TACs)
- Parking requirements
- Streets and other set-asides
- Net residential density and net job density

Two sets of development types were created for the scenario analysis:

- **Existing Policy.** Each scenario includes some development types that generally match existing general plan categories. For residential zones, the densities and mix of product type were set to match the observed trends from 1998 to 2008 as described in the Housing Needs Analysis (HNA). Employment zones were calibrated to the observed employment mix and density detailed in the Employment Opportunities Analysis (EOA, employment building types were discussed by the Employment TAC in the August, 2014 meetings).

- **New Policies and Efficiency Measures**. The scenarios also include a second set of development types used to assess the potential capacity increases that would result

from application of efficiency measures such as smaller lot sizes, lower parking requirements, and encouraging mixed-use development. Changes to this set of development types were made by adjusting the relevant characteristics within the building library while retaining the same weighted mix of building types. Additionally, a series of new development types were added to capture types of development envisioned in the future and/or which match physical or other conditions in a given area, but for which there no existing General Plan designation.

Detailed descriptions of development types are provided in Appendix C.

ABOUT THE SCENARIOS

Location-Based Choices: Shaping Bend's Urban Form

Discussions with the TACs about future development within the City have focused on the existing and potential future "urban form" of Bend. Urban form generally defines the type and scale of development and the roads and pathways that allow people to connect to the places they live, work, shop, and play within and outside those areas. In terms of the type of development, urban form describes different types of housing and employment uses, the size or scale of buildings and lots, and the design character of new development. Urban form also describes the relative emphasis on using different types of transportation within an area – driving, walking, bicycling, or taking transit. These urban form characteristics have been described using a series of maps that show the locations and relative intensities of different types of development, including areas where there is a mix of housing, shopping, and employment uses.

Figure 3 through Figure 5 illustrate the urban form for the City as a whole for Scenarios 1, 2 and 3. Larger maps can be found in Appendix B. As described above, Scenario 1 is the "Base Case," or how the City would evolve under the current General Plan. Scenarios 2 ("Intensity") and 3 ("Intensity and Mix") are conceptual scenarios of how growth might occur. Note that across all three scenarios, the urban form in many parts of the City remains unchanged. This reflects the reality that many areas are already built out or are simply not conducive to additional growth and change.

Several of the nine Opportunity Areas show different urban form designations across the three scenarios but the differences in the designations, or estimated jobs or housing capacity, are relatively subtle. These areas include:

- Opportunity Area 2. East Downtown
- Opportunity Area 3. Central Highway 20
- Opportunity Area 5. Mill District / Core Pine Area
- Opportunity Area 8. River Edge/Thompson Properties
- Opportunity Area 9 COID Property

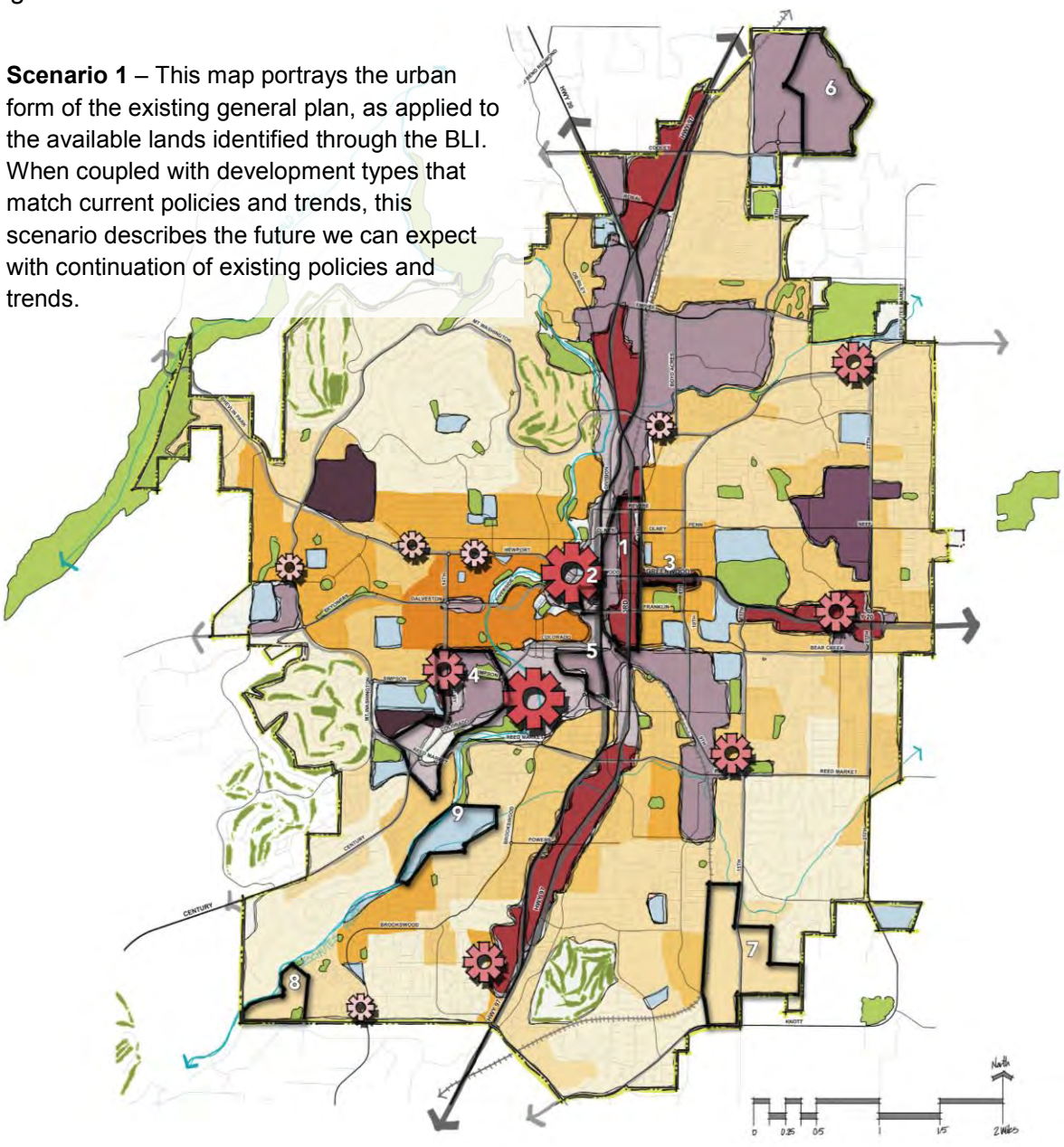
Four opportunity areas have differences with are more marked – they are:

- Opportunity Area 1 – 3rd Street
- Opportunity Area 4. SW Century Drive
- Opportunity Area 6. Juniper Ridge
- Opportunity Area 7. SE 15th / JL Ward Co Properties

Table 2 describes these differences in greater detail.

Figure 3. Scenario 1 – Base Case

Scenario 1 – This map portrays the urban form of the existing general plan, as applied to the available lands identified through the BLI. When coupled with development types that match current policies and trends, this scenario describes the future we can expect with continuation of existing policies and trends.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

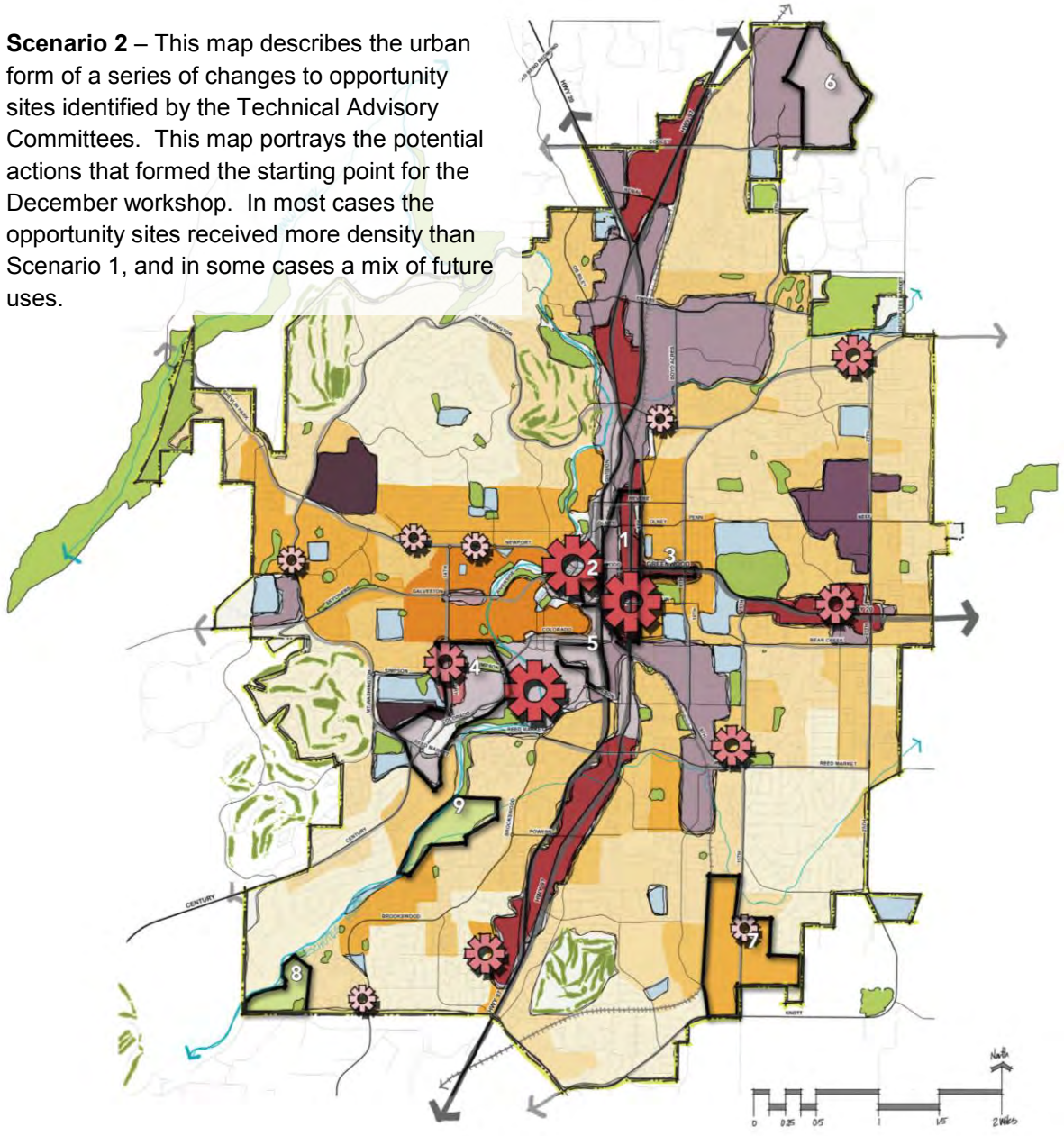
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Figure 4. Scenario 2 – "Intensify"

Scenario 2 – This map describes the urban form of a series of changes to opportunity sites identified by the Technical Advisory Committees. This map portrays the potential actions that formed the starting point for the December workshop. In most cases the opportunity sites received more density than Scenario 1, and in some cases a mix of future uses.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space

Neighborhood

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

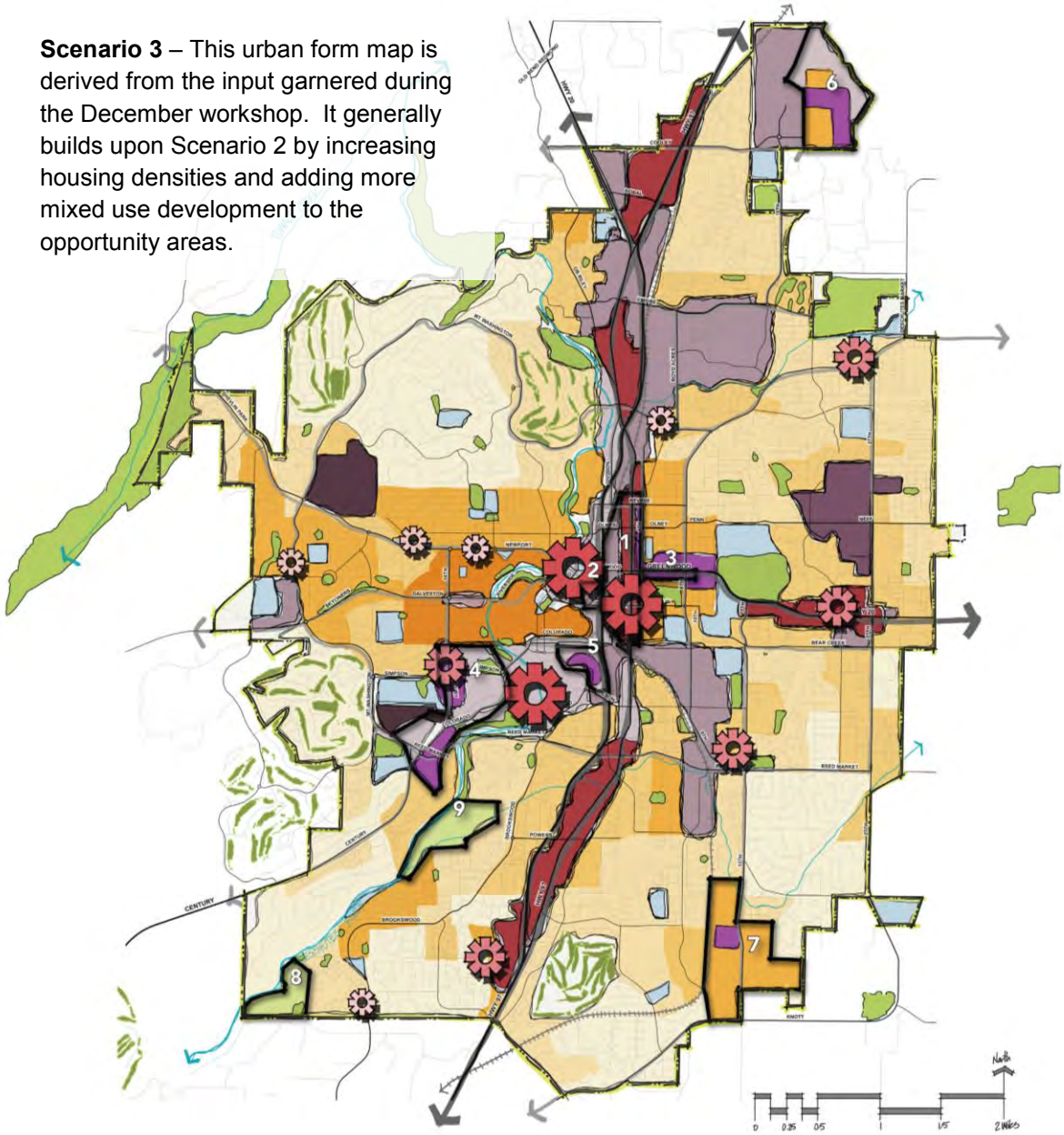
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Figure 5. Scenario 3 – "Intensify and Mix"

Scenario 3 – This urban form map is derived from the input garnered during the December workshop. It generally builds upon Scenario 2 by increasing housing densities and adding more mixed use development to the opportunity areas.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space Neighborhood
- Neighborhood Mixed Use

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

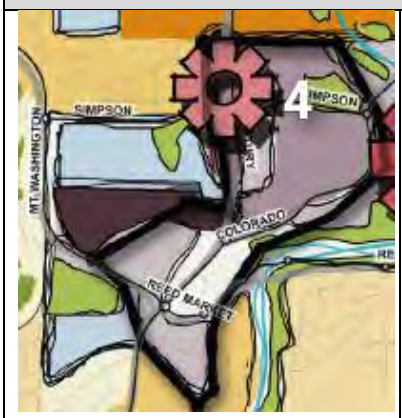
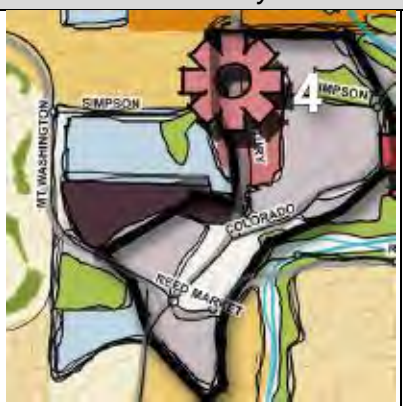
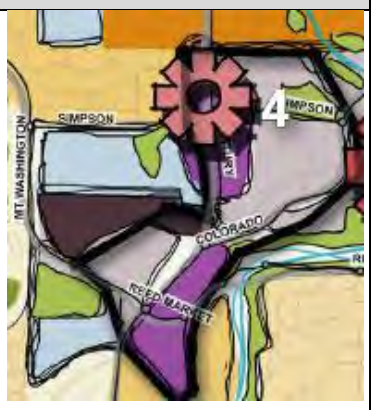
Employment Districts

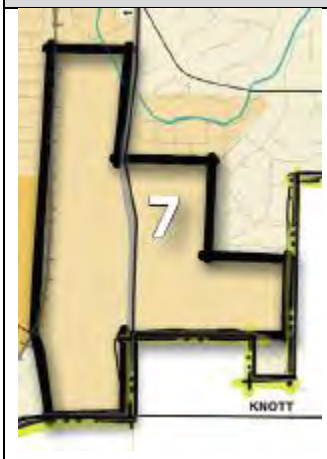
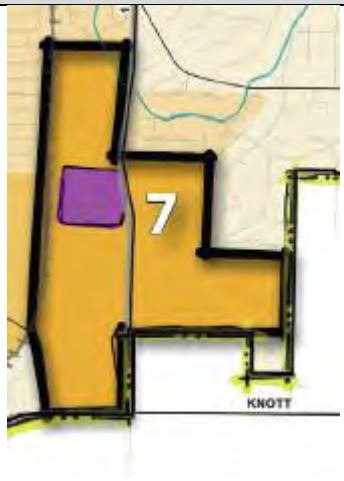
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Table 2. Urban Form Differences between Scenarios 1, 2, and 3

Scenario 1	Scenario 2	Scenario 3
Areas 1 & 3: 3rd Street/Central Highway 20 Corridors		
3rd Street and Greenwood remain commercial corridors.	3rd Street Corridor becomes Urban Mixed Use Center	3rd Street Corridor becomes Urban Mixed Use Center, additional and housing added to US20 to the East.
Area 4: SW Century Drive		
		
No change to existing urban form	Industrial areas become Mixed Employment and commercial areas	Neighborhood mixed use and multifamily housing added to the area

Scenario 1	Scenario 2	Scenario 3
Area 6: Juniper Ridge		
Site remains Industrial	Site becomes Mixed Employment	Site becomes mix of housing and neighborhood mixed use, generally following the 2007 Juniper Ridge Master Plan.
Area 7: SE 15th / JL Ward Co Properties		
		
Site remains large-lot SF neighborhood	Site becomes traditional neighborhood with local commercial center	Site becomes traditional neighborhood with additional higher-density housing and a neighborhood mixed use node

The urban form choices described above informed the selection and painting of development types for scenario analysis by the project team. The Envision Tomorrow model was also informed by:

- Existing conditions and current land uses from the Buildable Lands Inventory and associated analysis
- The forecasted growth from the Housing Needs Analysis and the Employment Opportunities Analysis
- TAC research and recommendations regarding opportunity sites and efficiency measures
- Additional input received from the December workshop

Broadly Applicable Code-Based Efficiency Measures

In addition to the location-specific changes described above, two sets of efficiency measures have been applied to the three scenarios to test their impact on the relative efficiency of development and resulting development capacity within the City. These efficiency measures would generally be applied through changes to the City's development code and would apply to all land within one or more zoning designations. Some could be used in residential zones throughout the city to encourage development of needed housing types and/or encourage more efficient use of residential land. Others could be applied to employment zones throughout the City to enable redevelopment or make more intense new development possible. These measures were reviewed by the TAC and included the following "packages" of tools.

- **Package A** is the "base case" and contains no new efficiency measures.
- **Package B** is focused on changes that make it easier for developers to build at the higher end of the allowed density range in each zone by creating greater flexibility in development standards. This package is a market-based approach that uses provides options and incentives to achieve higher densities. Examples include:
    - reducing minimum lot sizes and setbacks for certain housing types in certain zones
    - reducing parking ratios for certain types of businesses and certain housing types so that less land must be dedicated to parking
    - expanding allowed housing types in the RS zone
- **Package C** also increases flexibility in development standards, but it includes a mix of incentives and regulatory constraints to both allow and require development to utilize land more efficiently. Examples, in addition to those identified above for Package B, include:
    - increasing minimum density standards in the RS and RM zones
    - strengthening master planning requirements for large blocks of vacant residential land
    - prohibiting new single family detached housing in the RH zone

These packages were analyzed with Envision Tomorrow through a combination of changes in development type assumptions and the creation of new "master plan" development types for

select large parcels. Changes to development types included increased minimum gross densities, changes to building mix, reduced lot sizes, reduced parking, and expanded lot coverage. A detailed log of these changes is provided in Appendix D.

RESULTS

Overview

This section describes results from the Envision Tomorrow scenario analysis. The scenarios analyzed should not be interpreted as paths to choose from; rather, the figures and tables below merely present information about how various scenarios and assumptions combine. TAC discussions are expected to result in hybrid scenarios or capacity ranges for use in later phases of the UGB process.

The City of Bend is required to consider all unconstrained vacant lands as capacity to help fulfill housing and employment need, particularly vacant sites greater than five acres. This need is detailed in the Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA). The residential and employment forecasts from the 2008 HNA and EOA were updated with recent employment and housing permit data to arrive at figures for the remaining need from 2014-2028

Envision Tomorrow can evaluate a wide variety of indicators and potential outcomes associated with the different scenarios. In this case, the primary factors considered are related to the projected capacity and mix of different types of housing and employment uses within the UGB for the three scenarios, as measured in housing units and jobs. Preliminary information about transportation impact (i.e. Vehicle Miles Traveled (VMT) per capita) associated with each scenario is also summarized.

These results are considered a draft and are subject to revisions based on City review and feedback from the TACs. In reviewing the Base Case and Buildable Lands Inventory, the TACs may identify refinements to the information and assumptions contained therein. Changes to the BLI would have corresponding changes in Envision and the draft results presented in this memo. They also could identify alternative scenarios to model for one or more opportunity areas. Those changes can be further modeled using Envision Tomorrow.

These results provide general information about the scenarios and efficiency measure packages analyzed. Later sections describe specific opportunity areas in further detail and provide guidance toward the creation of hybrid scenarios.

Housing

Comparison of the scenarios confirms that spatial changes and application of efficiency measures could increase potential capacity for future housing. Increases in residential capacity were greatest among the multi-family housing types, with only modest changes in the capacity for single-family detached homes across all the scenarios. Additionally, the potential capacity for townhomes, while still a relatively small share of the overall, saw substantial increases through the application of efficiency measures.

Table 3. Housing Capacity Estimates

	Package A			Package B			Package C		
	1A	2A	3A	1B	2B	3B	1C	2C	3C
Total New Housing Units	**9,024**	**9,898**	**11,444**	**12,043**	**13,022**	**17,286**	**13,614**	**14,735**	**19,912**
Single Family Units	6,327	6,430	5,487	6,950	7,053	7,250	7,279	7,637	7,259
Large	3,000	2,962	2,422	3,771	3,734	3,361	3,136	3,318	3,082
Std	1,857	1,865	1,531	1,618	1,631	1,606	1,446	1,335	1,258
Small	1,469	1,604	1,534	1,562	1,684	2,284	2,697	2,984	2,919
Town-homes	470	513	746	1,288	1,404	2,166	1,628	1,801	2,806
Multi-Family	2,227	2,955	5,211	3,805	4,568	7,869	4,707	5,297	9,848
% Single Family Detached	70%	65%	48%	58%	54%	42%	53%	52%	36%
% Townhomes	5%	5%	7%	11%	11%	13%	12%	12%	14%
% Multifamily	25%	30%	46%	32%	35%	46%	35%	36%	49%

Figure 6 below shows that the single-family capacity grew modestly as a result of shrinking lot sizes. In some scenarios, however, some of the larger gains in overall housing capacity that are achieved through increasing multi-family options would potentially be accompanied by a reduction in single-family capacity compared to the base case.

Figure 6. Housing Mix of Added Units, by Scenario

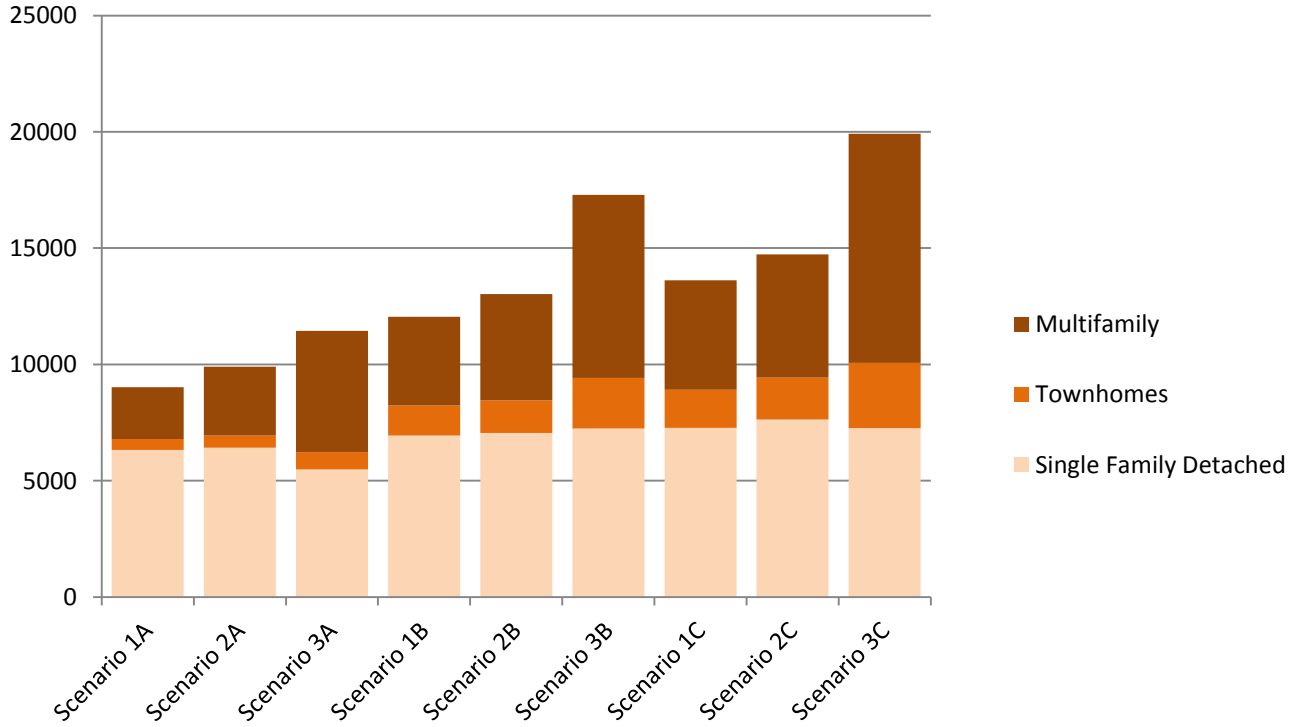
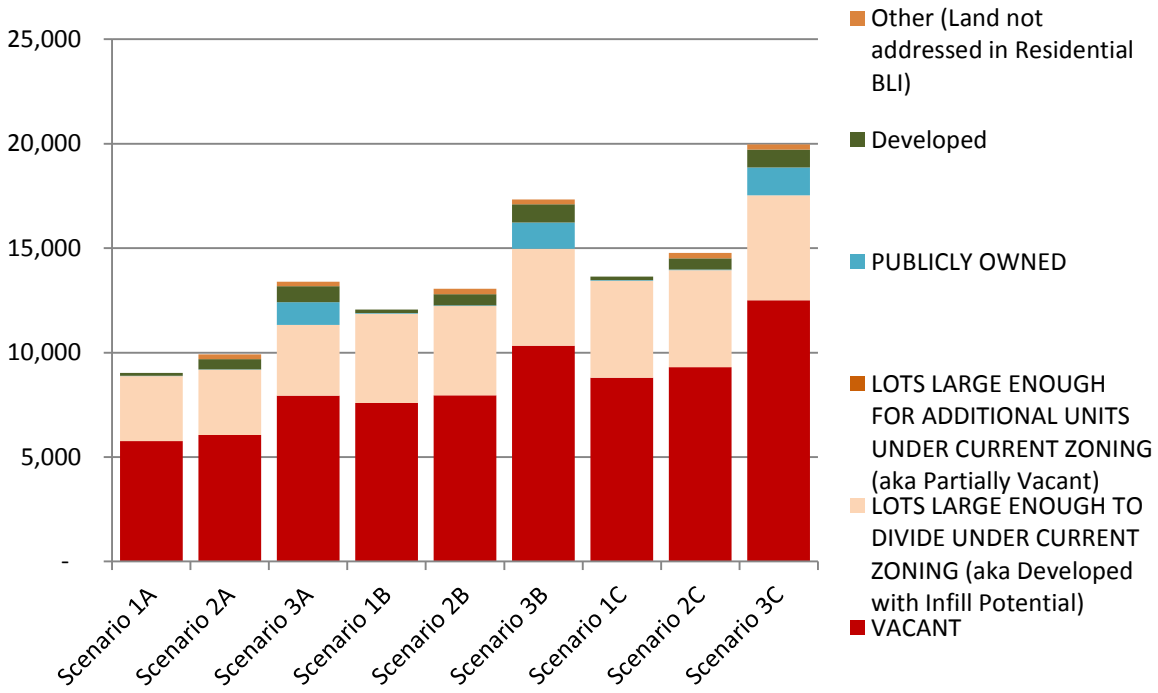


Figure 7. BLI Status of Added Housing Units, by Scenario

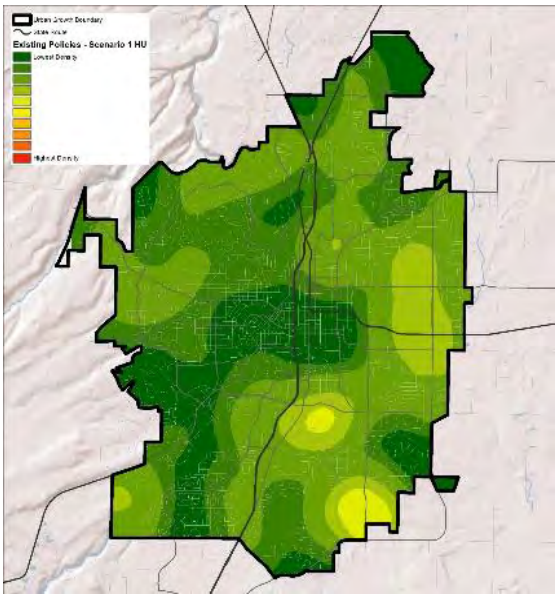


As shown in Figure 7, the majority of the growth in all analyzed scenarios is on land that is currently classified as Vacant. Scenarios 2 and 3 provide some additional housing capacity using land that is currently developed, and Scenario 3 increases housing capacity through Publicly Owned land, namely Juniper Ridge.

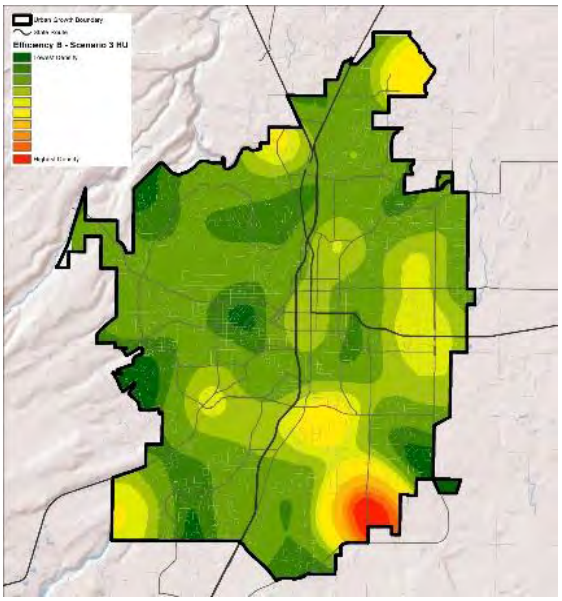
The maps in Figure 8 below show a heatmap of added housing in two of the analyzed scenarios (1A – Base Case; and 3C – Intensify & Mix with Revised Code and Additional Efficiency Measures). Greener areas have a lower density of housing, while yellow and red areas have a higher density. Opportunity Area 7 in the southeast is clearly a major source of new housing, varying by its composition (a single family subdivision or a new “complete community” with a mix of housing types) and the use of masterplan requirements to increase minimum densities. Other housing hotspots include Juniper Ridge (in Scenario 3), underdeveloped land near OBRiley Road and Robal in the north (in Scenario 3), the 3rd street corridor (in Scenarios 2 and 3), and other underdeveloped areas in the eastern and southern areas of the City.

Figure 8. Housing Density Heatmap

Scenario 1A



Scenario 3C



Employment

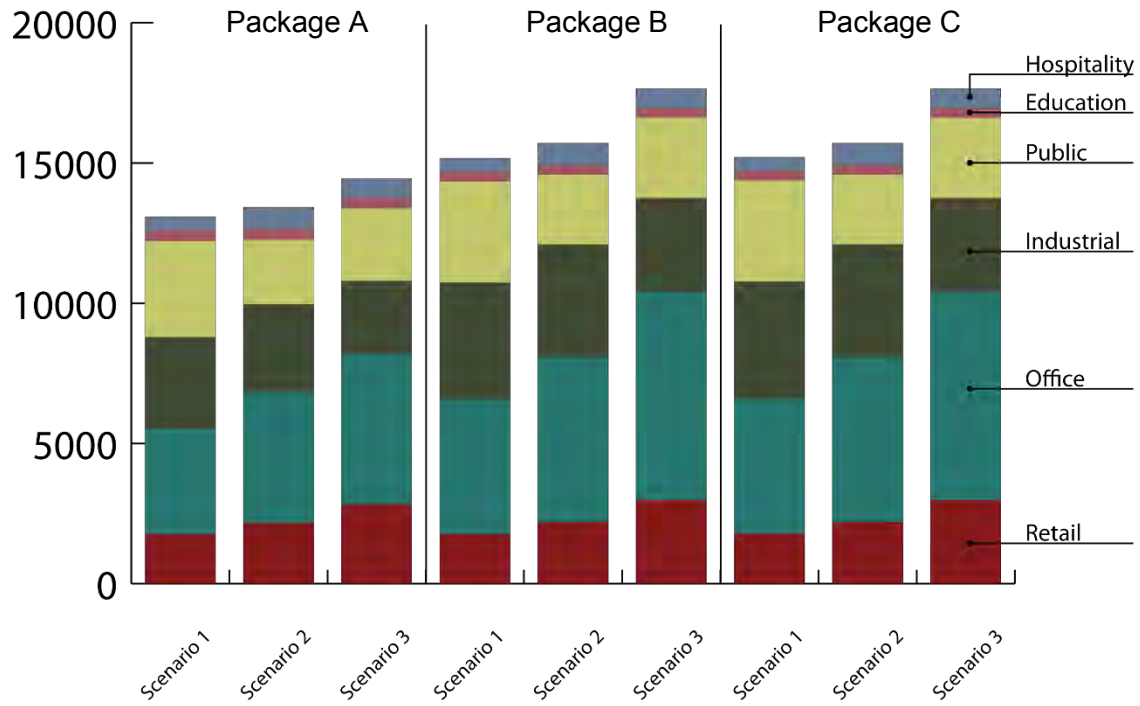
Capacity for jobs within the UGB followed patterns similar to housing. Designation of more intense uses within the identified opportunity areas provided more potential job capacity in all scenarios tested. One potential result of adding more commercial and mixed use development is a growth in the proportion of retail jobs. In the Base Case (Scenario 1A) retail jobs comprise 13% of the overall employment capacity. This increases 20% in Scenario 3A. The trend is similar in the scenarios with efficiency measures.

There was very little difference between Efficiency Measure Package B and Package C with regard to employment capacity. This result is expected, because the efficiency measure packages were developed primarily to encourage residential development. The increase in employment seen in Table 4 is likely due to increases in allowable building height and lot coverage in mixed-use zones, which was a component of both Package B and Package C.

Table 4. Employment Capacity Estimates

	Package A			Package B			Package C		
	1A	**2A**	**3A**	**1B**	**2B**	**3B**	**1C**	**2C**	**3C**
New Jobs	**13,088**	**13,429**	**14,461**	**15,178**	**15,715**	**17,654**	**15,212**	**15,715**	**17,654**
Retail	1,757	2,171	2,831	1,773	2,201	2,982	1,786	2,201	2,982
Office	3,781	4,669	5,358	4,778	5,857	7,409	4,800	5,857	7,409
Ind	3,256	3,123	2,608	4,188	4,038	3,359	4,188	4,038	3,359
Pub	3,420	2,291	2,588	3,600	2,481	2,864	3,600	2,481	2,864
Ed	383	383	383	346	346	346	346	346	346
Hosp	492	792	693	492	792	693	492	792	693
New Jobs/Acre	14.00	15.31	17.99	16.24	17.92	21.79	16.26	17.92	21.83

Figure 9. Potential Employment Capacity

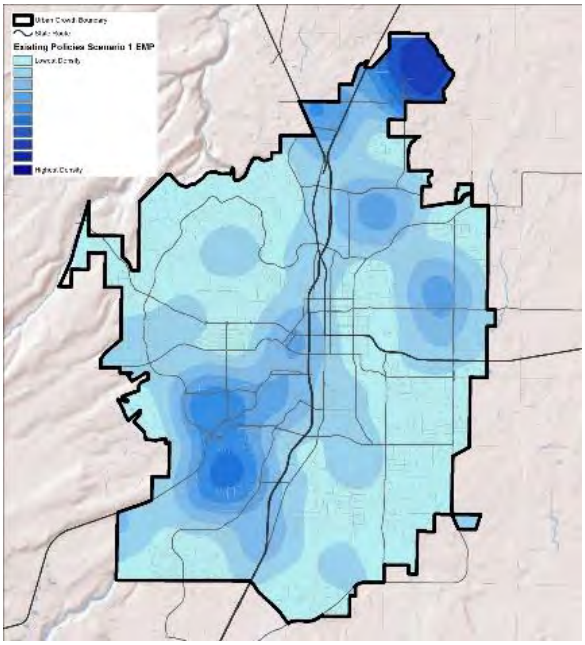


As shown in Figure 9, the greatest areas of jobs growth in the scenarios were on vacant and publicly owned land. As housing intensity and mixing of uses increase in Scenarios 2 and 3, less vacant land is utilized for employment and more job growth through redevelopment is expected.

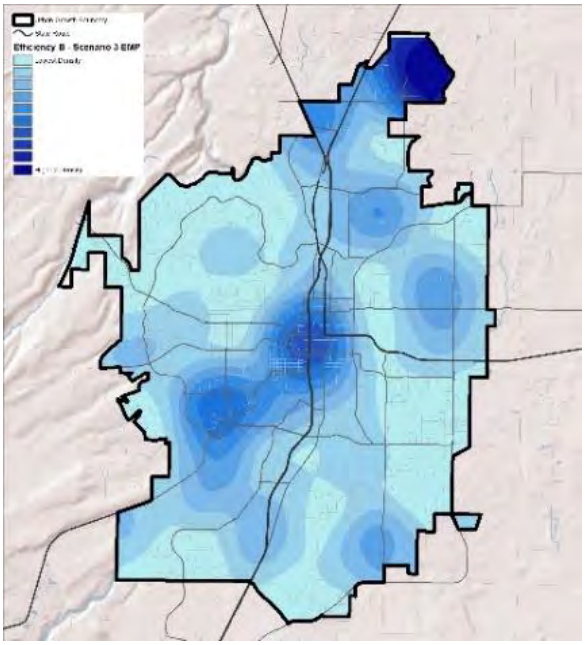
The maps in Figure 10 below show added employment in two of the analyzed scenarios (1A – Base Case; and 3C – Intensify & Mix with Revised Code and Additional Efficiency Measures). Lighter areas have a lower density jobs, while darker areas have a higher density. Juniper Ridge is a major source of new employment in all scenarios. Increased employment downtown, near OSU, and in Opportunity Area 7 come from growth and mixing of uses in these areas Scenarios 2 and 3.

Figure 10. Employment Heatmaps

Scenario 1A



Scenario 3C



Housing & Employment Comparison of Opportunity Areas

The scenario analysis evaluated the capacity for housing and jobs in each of the opportunity areas. The following table describes those results.

Table 5. Housing Units Added by Opportunity Area

		Scenarios								
		1A	2A	3A	1B	2B	3B	1C	2C	3C
Opportunity Area 1	SF Detached	0	0	0	0	0	0	0	0	0
	SF Attached	1	22	23	2	22	23	2	22	23
	Multifamily	8	521	537	9	567	583	10	567	583
	Units Total	**9**	**544**	**560**	**11**	**589**	**606**	**12**	**589**	**606**
Opportunity Area 2	SF Detached	-	-	-	-	-	-	-	-	-
	SF Attached	-	-	-	-	-	-	-	-	-
	Multifamily	0	0	4	0	0	9	0	0	9
	Units Total	**0**	**0**	**4**	**0**	**0**	**9**	**0**	**0**	**9**
Opportunity Area 3	SF Detached	0	0	0	0	0	0	0	0	-
	SF Attached	0	0	3	0	0	3	0	0	3
	Multifamily	0	0	31	0	0	34	0	0	34
	Units Total	**0**	**0**	**34**	**0**	**0**	**37**	**0**	**0**	**37**
Opportunity Area 4	SF Detached	6	6	5	7	7	6	7	7	0
	SF Attached	0	0	48	1	1	72	1	1	72
	Multifamily	27	24	430	34	30	485	34	30	499
	Units Total	**33**	**30**	**483**	**41**	**38**	**562**	**42**	**38**	**571**
Opportunity Area 5	SF Detached	0	0	5	0	0	6	0	0	6
	SF Attached	-	-	-	-	-	-	-	-	-
	Multifamily	0	0	9	0	0	10	0	0	10
	Units Total	**0**	**0**	**14**	**0**	**0**	**17**	**0**	**0**	**17**
Opportunity Area 6	SF Detached	-	-	167	-	-	184	-	-	187
	SF Attached	-	-	76	-	-	135	-	-	163
	Multifamily	-	-	811	-	-	909	-	-	936
	Units Total	**-**	**-**	**1,054**	**-**	**-**	**1,227**	**-**	**-**	**1,286**
Opportunity Area 7	SF Detached	705	704	758	789	784	837	691	928	456
	SF Attached	47	53	164	102	165	524	197	318	890
	Multifamily	41	207	1,217	215	365	1,454	752	751	2,965
	Units Total	**794**	**963**	**2,139**	**1,107**	**1,314**	**2,815**	**1,640**	**1,997**	**4,311**
Opportunity Area 8	SF Detached	93	93	166	93	93	187	93	93	187
	SF Attached	13	13	25	28	28	54	28	28	54
	Multifamily	11	11	169	19	19	207	19	19	207
	Units Total	**117**	**117**	**360**	**140**	**140**	**448**	**140**	**140**	**448**
Opportunity Area 9	SF Detached	-	105	92	-	105	92	-	105	92
	SF Attached	-	14	13	-	31	28	-	31	28
	Multifamily	-	13	11	-	21	18	-	21	18
	Units Total	**-**	**132**	**116**	**-**	**158**	**138**	**-**	**158**	**138**

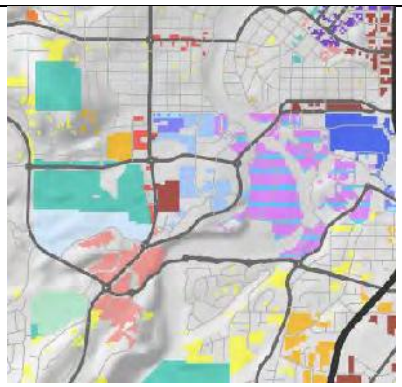
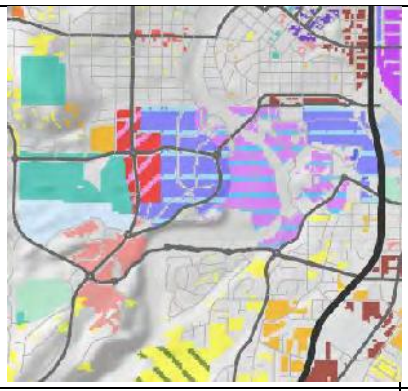
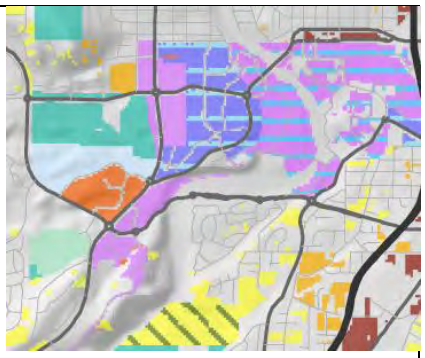
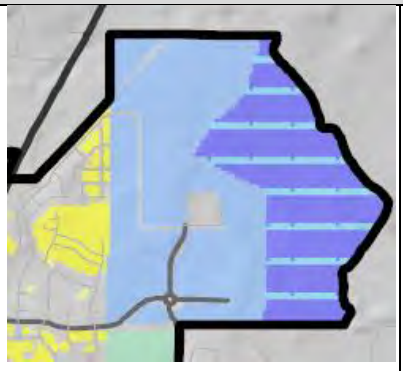
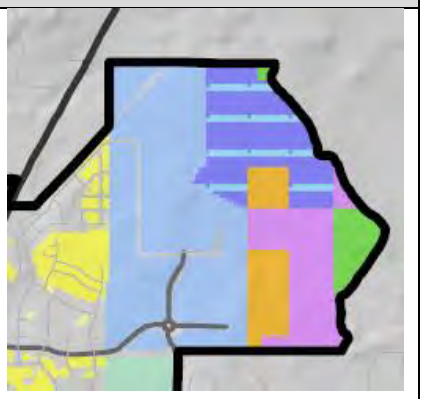
Table 6. Employment Added by Opportunity Area

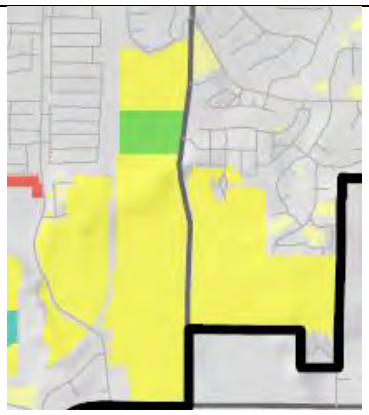
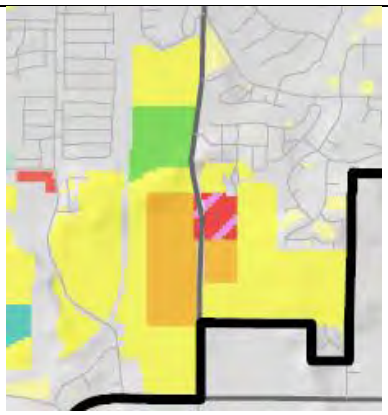
	Scenarios								
	1A	2A	3A	1B	2B	3B	1C	2C	3C
Opportunity Area 1	68	990	1,018	78	1,161	1,192	78	1,161	1,192
Opportunity Area 2	3	3	149	3	3	267	3	3	267
Opportunity Area 3	2	12	51	2	13	73	2	13	73
Opportunity Area 4	540	623	659	608	700	922	608	700	922
Opportunity Area 5	44	48	77	58	59	90	58	59	90
Opportunity Area 6	1,583	1,781	1,739	1,948	2,165	2,361	1,948	2,165	2,361
Opportunity Area 7	4	190	395	5	198	528	39	198	528
Opportunity Area 8	1	1	11	1	1	11	1	1	11
Opportunity Area 9	1,258	80	345	1,273	82	349	1,273	82	349

Table 7 describes and illustrates the results for each of the Opportunity Areas where there was more marked change.

Table 7. Performance of Select Opportunity Areas

Scenario 1	Scenario 2	Scenario 3
Area 1: 3rd Street Corridor		
Package A: 9 Units / 68 jobs **Package B:** 11 Units / 78 Jobs **Package C:** 12 Units / 78 Jobs	**Package A:** 544 Units / 990 jobs **Package B:** 589 Units / 1,161 Jobs **Package C:** 589 Units / 1,161 Jobs	**Package A:** 560 Units / 1,018 jobs **Package B:** 606 Units / 1,192 Jobs **Package C:** 606 Units / 1,192 Jobs
Area 4: SW Century Drive		

		
Package A: 33 Units / 540 jobs **Package B:** 41 Units / 608 Jobs **Package C:** 42 Units / 608 Jobs	**Package A:** 30 Units / 623 jobs **Package B:** 38 Units / 700 Jobs **Package C:** 38 Units / 700 Jobs	**Package A:** 483 Units / 659 jobs **Package B:** 562 Units / 922 Jobs **Package C:** 571 Units / 922 Jobs
Area 6: Juniper Ridge		
		
Package A: 1,583 jobs **Package B:** 1,948 Jobs **Package C:** 1,948 Jobs	**Package A:** 1,781 jobs **Package B:** 2,165 Jobs **Package C:** 2,165 Jobs	**Package A:** 1,054 Units / 1,739 jobs **Package B:** 1,227 Units / 2,361 Jobs **Package C:** 1,286 Units / 2,361 Jobs
Area 7: SE 15th / JL Ward Co Properties		

		
Package A: 794 Units / 4 jobs **Package B:** 1,107 Units / 5 Jobs **Package C:** 1,640 Units / 39 Jobs	**Package A:** 963 Units / 190 jobs **Package B:** 1,314 Units / 198 Jobs **Package C:** 1,997 Units / 198 Jobs	**Package A:** 2,139 Units / 395 jobs **Package B:** 2,815 Units / 528 Jobs **Package C:** 4,311 Units / 528 Jobs

Efficiency Measure Performance

This section addresses housing and employment capacity between the packages of efficiency measures.

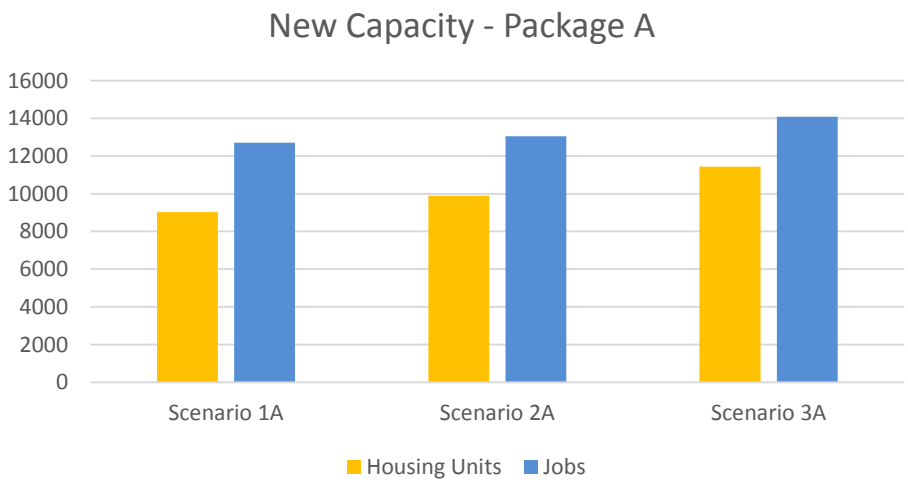
Package A

"Package A" scenarios were analyzed using the existing policy set with no additional code-related efficiency measures. As noted above, Scenario 1A is the base case application of current General Plan designations. In Scenarios 2A and 3A, where densities are increased in the opportunity areas, the result is higher capacity for both jobs and housing.

The additional housing capacity increases through use of higher density single-family designations and increasing the amount of land designated for multi-family products based on the use of new development types, primarily in geographic-specific opportunity areas.

Additional multi-family units from redevelopment grew incrementally from 150 in Scenario 1 (Base Case) to 730 in Scenario 2 and just over 900 in Scenario 3.

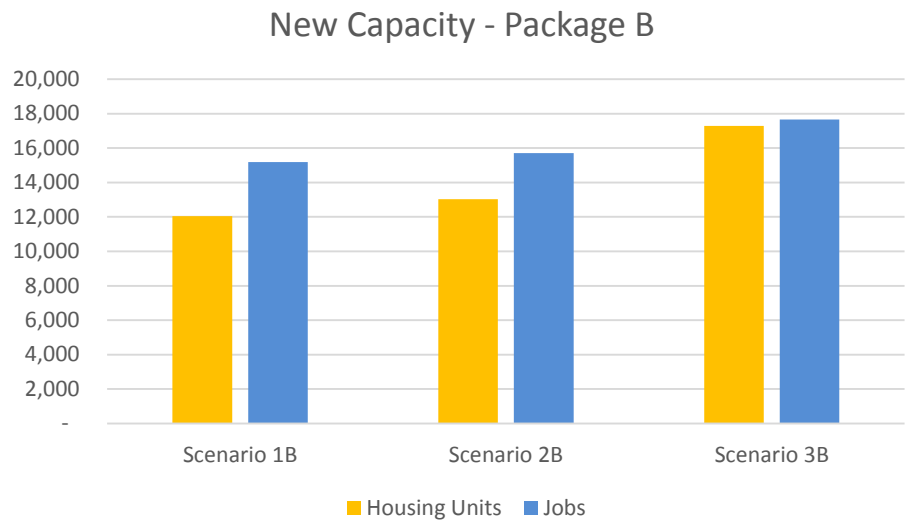
Figure 11. Package A New Capacity (2014-2028)



Package B

Package B assumes code revisions that encourage more efficient use of land. The development types in scenarios 1B, 2B, and 3B were replaced with a set that reflected the set of efficiency measures that are intended to provide market-oriented incentives for increased densities. As expected, this package of efficiency measures increases potential capacity for housing and jobs compared to Package A.

Figure 12. Package B New Capacity (2014-2028)



Package C

Package C scenarios include revised development code provisions and additional efficiency measures, notably changes to parcels greater than 20 acres designated RS or RM. In these areas, the development types were changed to a “master plan” typology where residential densities were increased to 80% of the allowed maximum. Table 8 describes how the density of these plan categories changed with application of Package C efficiency measures.

Figure 13. Package C New Capacity (2014-2028)

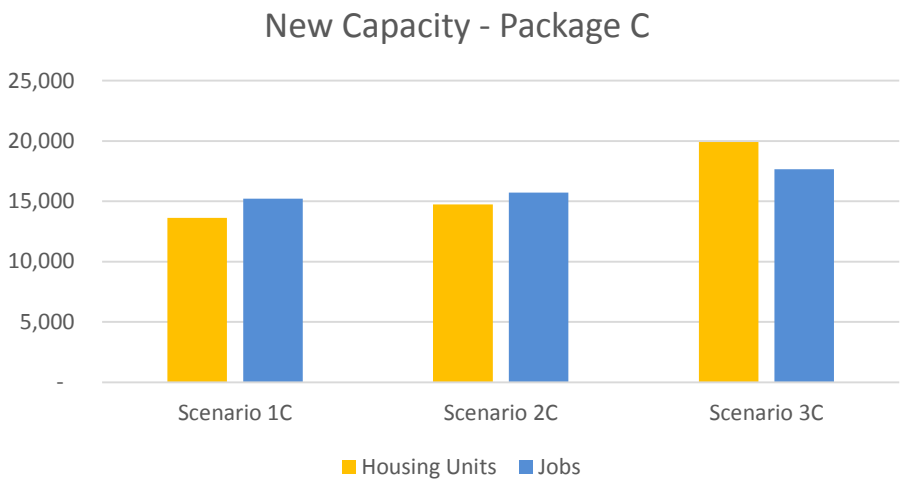


Table 8. Package C Development Types used in Envision Tomorrow

Development Type	Net Residential Density (Units/Acre)	Gross Residential Density (Units/Acre)
RS	5.1	3.12
RS w/ Efficiency Measures	7.1	4.6
RS Code Maximum	NA	7.3
RS Masterplan	9.5	5.8
RM	12.4	9.8
RM w/ Efficiency Measures	16.4	11.0
RM Masterplan	29.0	17.3
RM Code Maximum	NA	21.7

ANALYSIS AND INTERPRETATION

Most change predicted by the model occurs on vacant land. The majority of the growth in all analyzed scenarios is on land that is currently classified as Vacant (see Figure 7). Scenarios 2 and 3 provide some additional housing capacity using land that is currently developed, and Scenario 3 increases housing capacity through Publicly Owned land, namely Juniper Ridge. Similarly, the greatest areas of jobs growth in the scenarios were on vacant and publicly owned land. As housing intensity and mixing of uses increase in Scenarios 2 and 3, less vacant land is utilized for employment and more job growth through redevelopment is expected. Redevelopment on non-vacant land was modeled using an analysis of development trends in the HNA, which may account for the limited growth seen in these areas.

A few opportunity areas are the major drivers of change between scenarios. Unsurprisingly, the large vacant areas (Opportunity Areas 6 and 7) have a significant impact on overall jobs and housing growth, depending on what development types modeled. Areas that are largely developed experience less change in the model, as there is less available vacant land and relatively few properties are expected to redevelop during the planning period.

The majority of increased residential capacity associated with Opportunity Area 7, particularly in Scenarios 2C and 3C are in the form of multi-family units. The projected multi-family capacity in this area contributes to more multi-family units than the target need within these scenarios.

The projections for Area 6 (Juniper Ridge) are less significant in terms of the total number of units but also indicated a very high percentage of multi-family units in Scenario 3.

Scenario 3 also projects a significant number and percentage of multi-family units for Opportunity Area 4. However, based on TAC discussion during the TAC/USC workshop and the proposed future OSU Cascades Campus in this area, this may be a more appropriate location for this assumed mix of housing. This is likely to be reviewed and tested in more detail in the Westside Planning effort currently underway for this area. Similarly, in Opportunity Area 1, the mix of projected new units is generally consistent with the recently adopted Central District MMA Plan.

The above findings should be discussed by the TAC – specifically, where the appropriate focal points for multi-family housing should be within the City of Bend.

Efficiency measures have a significant impact. These differences can be seen clearly on Figure 6 and Figure 9. Across all Scenarios, Package B appears to result in a housing mix that is more in line with the existing character of Bend and the results of the Housing Needs Analysis. Much of the difference between Package B and Package C is an increase in minimum required density for master-planned developments from 60% to 80% (See Item 18 in Appendix D). This efficiency measure dovetails with the sensitivity of the model to Opportunity Areas 6 and 7, creating a great deal of added capacity (particularly multi-family capacity) in these areas under Package C.

COMPARISON TO NEED – A NEXT STEP

The project team will provide comparisons to housing and employment land needs as part of the next scenario evaluation. The comparison to need will estimate the capacity of the existing UGB and the residual land need for expansion lands. These numbers have not been estimated here for several reasons: (1) The initial nine scenarios (1A through 3C) are not final and complete scenarios – they are kits of parts from which to build additional scenarios; (2) The team is still working on the BLI and Base Case, so the base numbers are subject to change; (3) The "need" side of the equation is still subject to finalization based on TAC input on assumptions for group housing and second homes. (4) The need side of the equation also must include land needed for a variety of other purposes beyond housing units and jobs (i.e., parks, schools, faith-based, social and fraternal organization facilities, roads, other public facilities, etc.) which are dependent upon the projected housing and employment land need.

Appendix A

PROJECT GOALS

The City of Bend has entered the next phase of its Urban Growth Boundary (UGB) expansion to chart a path for Bend's future growth. The UGB is a line drawn on the City's General Plan map that identifies Bend's urban land. This land represents an estimated 20-year supply of land for employment, housing, and other urban uses. As the city continues to grow, we have an opportunity to develop a plan for future growth that reflects the community's goals and meets state planning requirements.

The UGB Steering Committee approved the following Project Goals on September 4, 2014.

A Quality Natural Environment

As Bend grows, it preserves and enhances natural areas and wildlife habitat. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Balanced Transportation System

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

Great Neighborhoods

Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks. Small neighborhood centers provide local shops, a mix of housing types, and community gathering places. The character of historic neighborhoods is protected and infill development is compatible.

Strong Active Downtown

Bend's downtown continues to be an active focal point for residents and visitors with strong businesses, urban housing, civic services, arts and cultural opportunities, and gathering places. Parking downtown is adequate and strategically located. Planning in other areas continues to support a healthy downtown.

Strong Diverse Economy

Bend has a good supply of serviced land planned for employment growth that supports the City's economic development goals, provides a range of diverse jobs and industries, and supports innovation. Employment areas, large and small, have excellent transportation access.

Connections to Recreation and Nature

Bend continues to enhance its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city.

Housing Options and Affordability

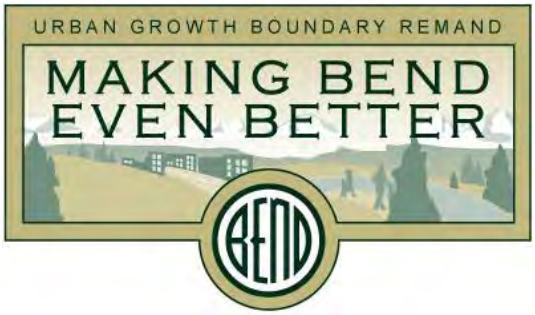
Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing design is innovative and energy efficient.

Cost Effective Infrastructure

Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

September 4, 2014
www.bendoregon.gov/bendugb

Appendix B: Urban Form Diagrams

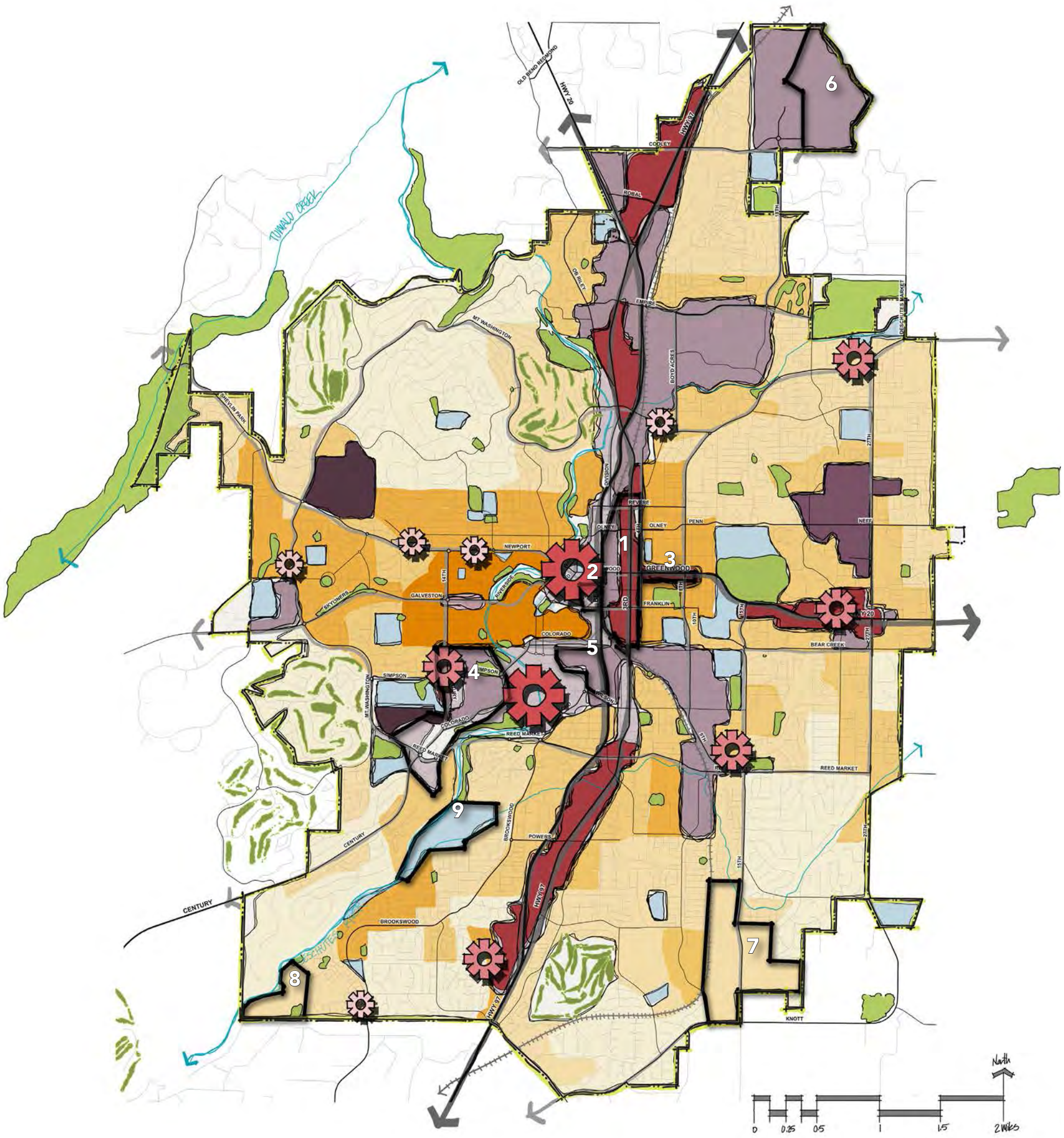


BEND URBAN FORM DIAGRAM

SCENARIO 1: BASE CASE (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

- #

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

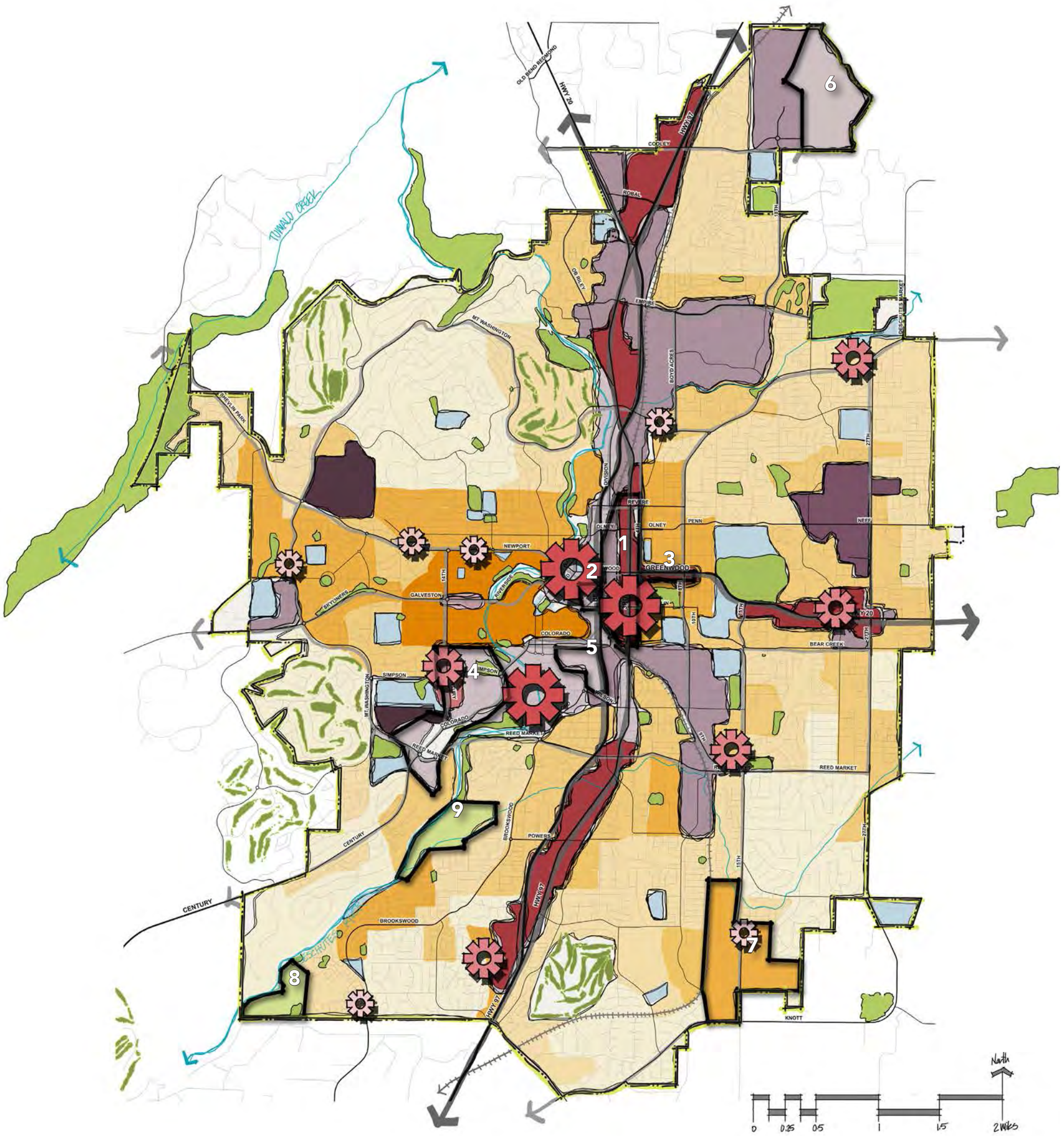
- Public Facilities

BEND URBAN FORM DIAGRAM

SCENARIO 2: INTENSIFY (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

- #

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space
- Neighborhood

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

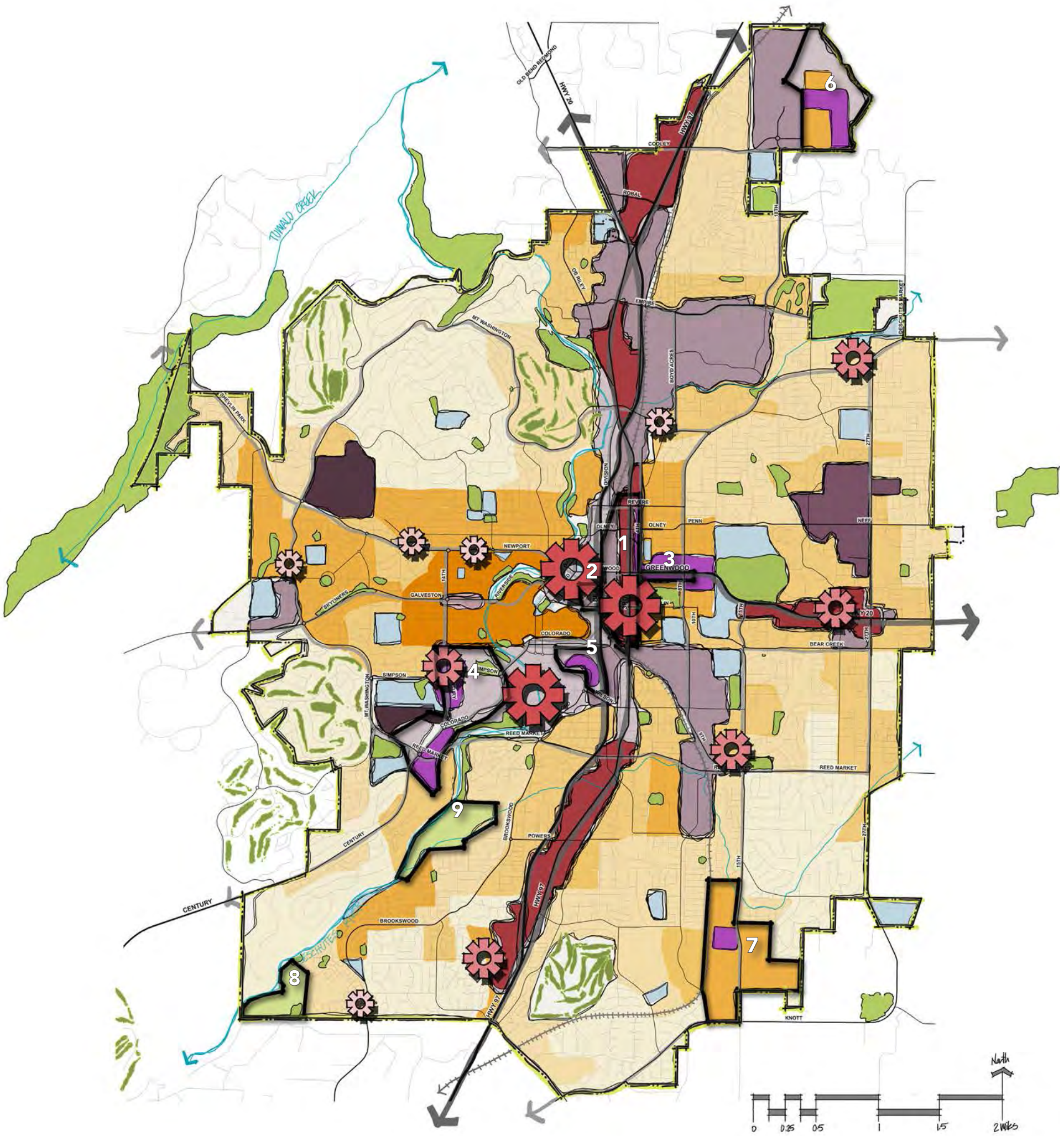
- Public Facilities

BEND URBAN FORM DIAGRAM

SCENARIO 3: INTENSIFY AND MIX (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

- #

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space Neighborhood
- Neighborhood Mixed Use

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Appendix C: Development Types Used in Envision Tomorrow

The table below describes the development types used in the Envision Tomorrow scenarios. Each development type is composed of a mix of building types with characteristics totaling the "Residential Mix" and "Employment Mix" shown below. Overall residential/employment net densities are also shown below.

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
SM	Surface Mining		Office: 16% Industrial: 84%	12.4 Jobs / Net Acre	
SR 2.5		Large Lot SF – 100%	-	1 Unit / Acre	
RL	Low Density Residential	Large Lot SF: 100%	-	2.1 Units/Net Acre	
RS	Std. Density Resdiential	Multi-Family: 5% Townhome: 6% Small Lot SF: 12% Conventional Lot SF: 32% Large Lot SF: 46%	-	5.09 Units/Net Acre .03 Jobs/Net Acre	
RM	Medium Density Residential	Multi-Family: 44% Townhome: 5% Small Lot SF: 40% Conventional Lot SF: 12%	-	12.4 Units/Net Acre .26 Jobs/Net Acre	Also includes "RM for Jobs" at 16.9 Jobs/Net Acre
RH	High Density Residential	Multi-Family: 82% Townhome: 14% Small Lot SF: 4%	-	21.1 Units / Net Acre 5.7 Jobs / Net Acre	
MDOZ	Medical District Overlay Zone	Multi-Family: 100%	Office – 86% Industrial – 9% Civic – 5%	13.1 Units / Net Acre 19.2 Jobs / Net Acre	captures different mix of uses in the MDOZ area
CC	Community Commercial	-	Retail - 35% Office - 39% Industrial - 4%	16.2 Jobs / Net Acre	

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
			Civic - 2% Hotel - 19%		
CC2	"Walkable" Community Commercial	-	Retail – 53% Office – 31% Civic – 1% Hotel – 15%	21.63 Jobs / Net Acre	CC2 - A more dense and walkable version of the Convenience Commercial (CC) designation
CL	Limited Commercial	Multi-Family: 97% Small Lot SF: 3%	Retail - 23% Office - 49% Industrial - 7% Civic – 3% Hotel - 18%	1.1 Units / Net Acre 19.6 Jobs / Net Acre	
CG	General Commercial	-	Retail: 63% Office: 19% Industrial: 3% Civic: 2% Hotel: 13%	0.7 Units / Net Acre 13.1 Jobs / Net Acre	
CB	Central Business District	-	Retail: 8% Office: 63% Civic: 17% Hotel: 12%	2.13 Units / Net Acre 74.61 Jobs / Net Acre	
IP	Industrial Park	-	Office: 43% Industrial: 57%	21.3 Jobs / Net Acre	
IL	Industrial Light	-	Retail: 9% Office: 25% Industrial: 55% Civic: 10%	10.7 Jobs / Net Acre	
IG	Industrial General	-	Retail: 4% Office: 32% Industrial: 60% Civic: 4%	14.9 Jobs / Net Acre	

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
MR	Mixed Riverfront	Multi-Family: 62% Small Lot SF: 38%	Retail: 15% Office: 66% Industrial: 12% Civic: 3% Hotel: 4%	2.8 Units / Net Acre 14.8 Jobs / Net Acre	
ME	Mixed Employment	-	Retail: 16% Office: 31% Industrial: 41% Civic: 7% Hotel: 5%	11.6 Jobs / Net Acre	
PF	Public Facilities	-	Retail: 2% Office: 4% Civic: 94%	14.5 Jobs / Net Acre	
RS-CCR	RS with Development Restrictions	Large Lot SF: 100%	-	1.88 Units / Net Acre	a designation for areas covered by CC&Rs that limit lot divisions to ensure just one unit per lot is considered
University		-	Educational – 100%	25.2 Jobs / Net Acre	Used for planned college/university campuses
MU1	Mixed Use	Multi-Family: 92% Townhome: 8%	Retail: 51% Office: 42% Civic: 5% Hotel: 2%	15.7 Units / Net Acre 24.4 Jobs / Net Acre	new neighborhood-scale mixed use development type
MU2	Mixed Use	Multi-Family: 95% Townhome: 4%	Retail: 12% Office: 69% Civic: 1% Hotel: 18%	34.1 Units / Net Acre 60.7 Jobs / Net Acre	new urban-scale mixed use development type
RS Hillside	Std Density Residential – Clustered Development	Multi-Family: 10% Townhome: 11% Conventional Lot SF: 27% Large Lot SF: 53%	Office: 100%	2.8 Units / Net Acre 0.03 Jobs / Net Acre	Used where topography or other conditions may limit density to the lower end of the allowed range, rather than

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
					the average
RM Hillside	Medium Density Residential – Clustered Development	Multi-Family: 47% Townhome: 7% Small Lot SF: 29% Conventional Lot SF: 17%	Retail: 32% Office: 68%	8.7 Units / Net Acre 0.3 Jobs / Net Acre	Used where topography or other conditions may limit density to the lower end of the allowed range, rather than the average
RS Master-plan	RS for large master-planned areas parcels	Mult-Family: 12% Townhome: 11% Single Family: 77%		9.5 Units / Net Acre	reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)
RM Master-plan	RM for large master-planned areas	Multi-Family: 66% Townhome: 21% Single Family: 14%		29 Units / Net Acre	reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)

The table below describes changes to the Development Types for Efficiency Measure Packages B & C

Development Type	Housing Units per net residential acre	Housing Density with Efficiency Measures	Jobs per net employment acre	Job Density with Efficiency Measures
SM	0	0	12.4	17.4
SR2.5	1.0	1.0	0	0
RL	2.1	3.0	0	0
RS	5.1	7.5	0.0	0.0
RM	12.4	18.6	0.3	0.3
RM for jobs	12.2	14.9	16.9	23.8
RH	21.1	29.8	5.7	7.3
MDOZ	13.1	14.8	19.2	23.5
CC	0	0	16.2	16.9
CL	1.1	1.4	19.6	22.1
CG	0.7	0.8	13.1	13.7
CB	2.1	4.5	74.6	133.8
IP	0	0	21.3	27.0
IL	0	0	10.7	13.2
IG	0	0	14.9	19.5
MR	2.8	3.4	14.8	17.3
ME	0	0	11.6	14.1
PF	0	0	14.5	14.7
RS-CCR	1.9	1.9	0	0
University	0	0	25.2	25.2
MU 1	15.7	17.2	24.4	35.0
MU 2	34.1	37.0	60.7	70.3
RS Hillside	2.8	3.3	0.0	0.0
RM Hillside	8.7	10.9	0.3	0.3
CC2	NA	NA	21.6	22.5
RS Masterplan	NA	9.5	NA	0.0
RM Masterplan	NA	29.0	NA	0.3

Appendix D: Operationalization of Efficiency Measures

The table below describes the efficiency measures (EM) that were tested through Envision Tomorrow's Building Prototypes and Development Types. For Package B and C, separate sets of building types and development types were developed. The values were applied to the scenario maps using the Scenario Builder tool within Envision Tomorrow.

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
1	Increase minimum gross density for RS from 2.0 to 4-5 DU/acre	RS = 3.1 DU/ac	RS = 3.1 DU/ac	RS = 4.6 Du/cC
2	Increase minimum gross density for RM from 7.3 to 10-12 DU/acre	RM = 7.4 DU/ac	RM = 7.4 DU/ac	RM = 11.2 DU/ac
3	Allow Accessory Dwelling Units (ADUs) in all single-family zones	NA	Added SFR building type with ADU type. Categorized it as MFR with 2 units on each site. 1 bedroom at around 750 feet and house with a mix of 3 and 4 bedrooms. Density is 17.7 Du/AC net	Added SFR building type with ADU type. Categorized it as MFR with 2 units on each site. 1 bedroom at around 750 feet and house with a mix of 3 and 4 bedrooms. Density is 17.7 Du/AC net
4	Allow cluster / cottage housing development	No Cottage units in RS or RM	Set of cottage homes to comprise 5% of the RS and RM Development Types	Set of cottage homes to comprise 5% of the RS and RM Development Types

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
5	Allow duplexes and triplexes in SFR zones outright	Duplex set to 3% of RS and RM Triplex set to 7% of RM	Duplex set to 7% of RS and RM Triplex set to 7% of RM	Duplex set to 7% of RS and RM Triplex set to 7% of RM
6	Prohibit SFR detached from the RH zone	SFR detached = 5%	SFR detached = 5%	SFR detached = 0%
7	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 3,000 sf building type to 2,500 sf	Reduced 3,000 sf building type to 2,500 sf
8	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 2,500 sf building type to 2,000 sf	Reduced 2,500 sf building type to 2,000 sf
9	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 2,000 sf building type to 1,500 sf	Reduced 2,000 sf building type to 1,500 sf
10	Reduce minimum lot dimensions for SFR Attached in RH zone		Reduced width from 20 feet to 18’ and depth to 75 feet	Reduced width from 20 feet to 18’ and depth to 75 feet
11	Reduce setbacks in RH and RM zones for SFR Detached		Reduced setbacks for detached building types: 1,500, 2000, 2,500, 4,000, 5,000 s.f. in RM and RH zones In some cases the maximum lot size coverage is exceeded.	Reduced setbacks for detached building types: 1,500, 2000, 2,500, 4,000, 5,000 s.f. in RM zones (No SFR detached was included in RH) In some cases the maximum lot size coverage is exceeded.
12	Increase maximum lot coverage for SFR Attached in RS zones to 50%		Set building coverage to 50%	Set building coverage to 50%
13	Increase maximum lot coverage in RM zones to 60%		Reduced parking spaces to 1.5 per unit in order to reach 60% coverage	Reduced parking spaces to 1.5 per unit in order to reach 60% coverage
14	In the RH zone – allow greater lot coverage. Potential actions: eliminate maximum lot coverage		For Building types used by the RH, reduced parking As follows,	For Building types used by the RH, reduced parking As follows,

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
	requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage		existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1 Retail (listed as spaces per 1,000 sf) 3 > 1.5 Office (listed as spaces per 1,000 sf) 3 > 1.85 3>1.5 for 4-story bldgs 2.85 > 1.5 2 > 1.5 Landscaping standards did not need changing to reach or exceed max FAR	existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1 Retail (listed as spaces per 1,000 sf) 3 > 1.5 Office (listed as spaces per 1,000 sf) 3 > 1.85 3>1.5 for 4-story bldgs 2.85 > 1.5 2 > 1.5 Landscaping standards did not need changing to reach or exceed max FAR
15	ADUs – waive off street parking requirement	NA	SFR/ADU building type only included parking for the main house	SFR/ADU building type only included parking for the main house
16	Duplex and Triplex – reduce parking from 2 to 1.5 per unit	Parking set to 2 spaces per unit	Set to 1.5	Set to 1.5
17	Reduce parking requirements for multi-family housing	Varies by building types	For MFR Building types reduced parking As follows, existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1	For MFR Building types reduced parking As follows, existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1
18	Increase minimum required density for master planned developments form 60% to 80% of maximum zone	60%	No change	Created RS and RM Masterplan Development Type set to 80% of

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
	density, and reduce requirement threshold from 40 to 20 acres			max. Applied to vacant sites of 20 acres or more
19	Increase building height for higher intensity areas	Varies by building types and zone	20% of the Urban Mixed Use development types contains buildings of 5, 8 and 15 stories	20% of the Urban Mixed Use development types contains buildings of 5, 8 and 15 stories
20	Expand lot coverage in ME zone from 60% to 80%	60%	Parking requirements for 1 and 2 story office were reduced. Could not reach 80% threshold without employing structured parking, which doesn't match economic profile of ME areas	Parking requirements for 1 and 2 story office were reduced. Could not reach 80% threshold without employing structured parking, which doesn't match economic profile of ME areas

Appendix E: Additional Background on Envision Tomorrow

About Envision Tomorrow

Envision Tomorrow is an open-access scenario planning package that is being employed to analyze future growth patterns and policy decisions impacting growth in Bend. The software, comprised of an ARC/GIS extension and a Microsoft Excel model, develops estimates of how these patterns and policies will impact a range of measures, including growth capacity to travel behavior.

Envision Tomorrow is a suite of planning tools that includes analysis tools and scenario design tools. The analysis tools allows for analysis of aspects of the city using GIS data, such as tax assessor parcel data, the General Plan, and Census data. The scenario painting tool was utilized to "paint" a series of alternative future development scenarios on the landscape within Bend's UGB, and to compare scenario outcomes for this memorandum.

Envision Tomorrow provides a sketch-level glimpse of the possible impacts of policies, development decisions and current growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, development feasibility, fiscal impacts, transportation, environmental factors, and quality of life.

Envision Tomorrow keeps most of the calculation elements in a scenario spreadsheet that is linked to ArcGIS via an extension. Modifying assumptions – and even adding new indicators – is far easier within a spreadsheet than within lines of computer code. In addition, the tool has an high level of transparency since each of the equations is visible and easy to change by the user.

Envision Tomorrow is comprised of two linked, but independent components.

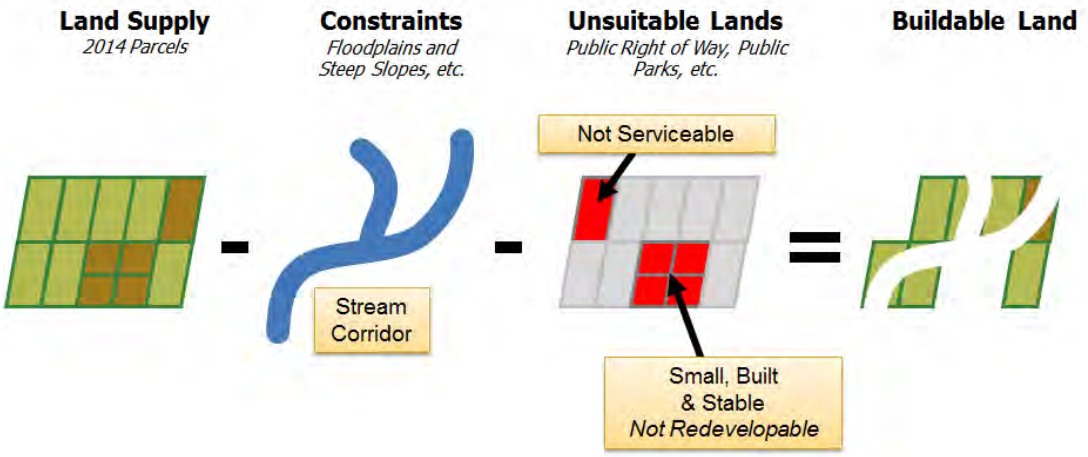
The ESRI ArcGIS Extension

The Envision Tomorrow extension for ESRI's ArcGIS is a relatively simple interface that the team used to select and "paint" different land use types, or Development Types, onto the scenario layer. The extension is also responsible for establishing a dynamic connection to the Scenario Spreadsheet, so as the team paints, information is sent to the Scenario Spreadsheet, which in turn, results in changes in the indicator charts and graphs.

ArcGIS houses the spatial component of Bend's scenario modeling. The City's Buildable Lands Inventory (BLI) was transferred, within GIS, to the planning units (taxlots) upon which scenarios

were developed. Identifying lands that have the potential for additional development and then filtering out lands that are environmentally, physically or otherwise constrained, the BLI conveys how much land within each parcel is vacant or potentially available for redevelopment.

Bend's current land use inventory data show the occupied land in the city and the land use associated with it. The current land use inventory, commonly referred to as existing land use, portrays data related to use, zoning, value and other conditions present for the 2008 base year., updated to include development that occurred between 2008 and 2014. This data is also then used in the scenario development process to determine where redevelopment opportunities may exist.



Spreadsheets

There are three basic types of spreadsheets involved in the interlinked Envision Tomorrow platform.

1. The building-level Prototype Builder spreadsheets
2. The scenario-level Scenario Builder spreadsheet
3. Individual modular models that can be dynamically linked to the scenario spreadsheet, such as the Travel Model

The smallest units of analysis in the Bend scenarios are buildings. Individual buildings were modeled in a template spreadsheet called a Prototype Builder. This template spreadsheet is a simplified, planning-level pro forma, not unlike one used by a developer to evaluate the financial feasibility of a development project. The Prototype Builder includes both the physical attributes of buildings, such as height and landscaping, and also the financial attributes, such as rents and construction costs.

The Prototype Builder is a handy stand-alone tool for evaluating the financial feasibility of current or proposed zoning, and was used in this manner to research redevelopment capacity for the Employment Opportunities Analysis. For the scenario analysis it serves as the template for creating a library of building types. The Prototype Library includes 57 very specific building types based on buildings that are present within Bend today, and a small selection of buildings

that may be desirable in the future. Following is a sampling of some of the more prominent factors associated with the building types.

Physical Inputs

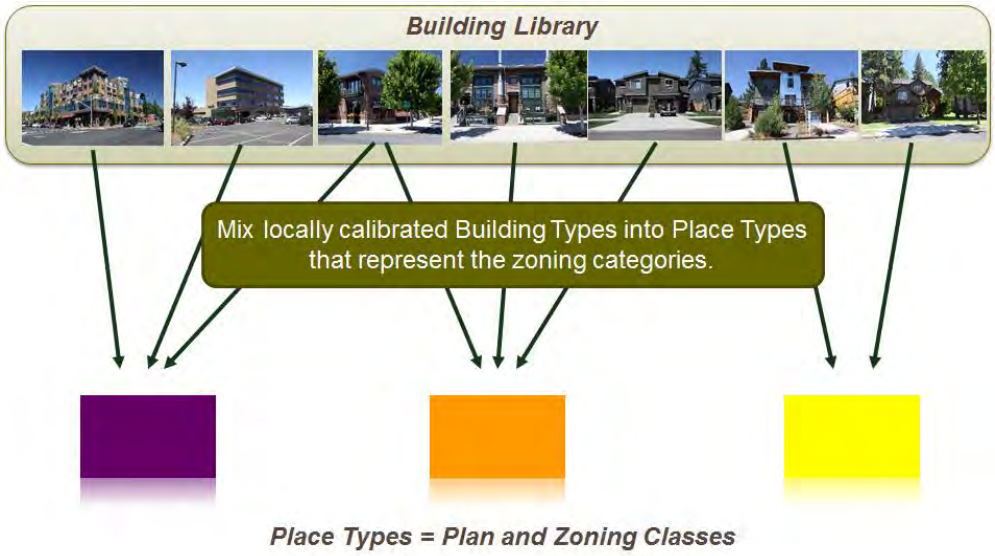
- Lot dimensions
- Height
- Building uses
- Residential unit mix and average sizes
- Square foot per employee figures
- Parking requirements
- Parking configuration (surface vs. structured)
- Parking space efficiency

Financial Inputs

- Construction costs by land use
- Land cost
- Residential and commercial rents
- Residential sales prices
- Parking construction costs

While it is impossible to capture every unique building being built in the city, the building types established through the team's market research broadly represent the "flavor" of new construction in Bend. Each building contains a range of parameters, from average rent to housing unit density, and beyond. These buildings are then mixed, in various combinations, to create the building blocks for "development types" which are used to paint the Base Case (Scenario 1) and alternative development scenarios.

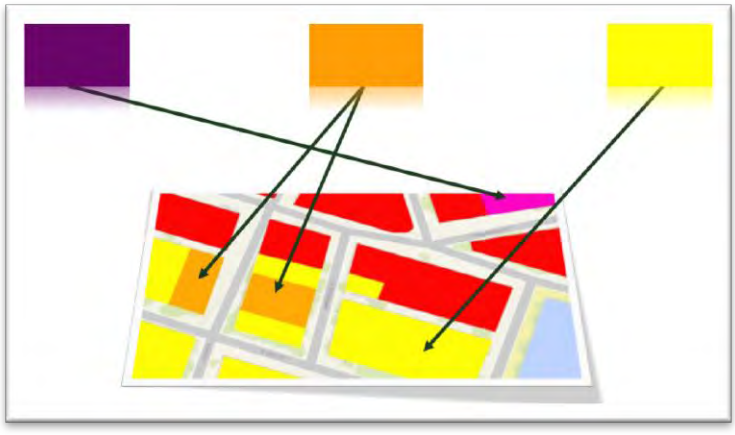
This library of building spreadsheets were loaded into the Scenario Spreadsheet and dynamically linked to enable future additions or changes. The Scenario spreadsheet houses the development types. Development types for this project were based on Bend's general plan, plus some additional types created for testing efficiency measures such as smaller lot sizes or mixed use housing.



Development types

Development types, referred to as Place Types in the graphic above, were created to emulate the City's general plan and the range of uses that one might find within a given designation. Wrapped up within these development types are the building types discussed above as well as roadway characteristics. Roadway characteristics include lane width, number of lanes, sidewalks, bicycle lanes, etc. Also included are net land reductions for parks and other public spaces.

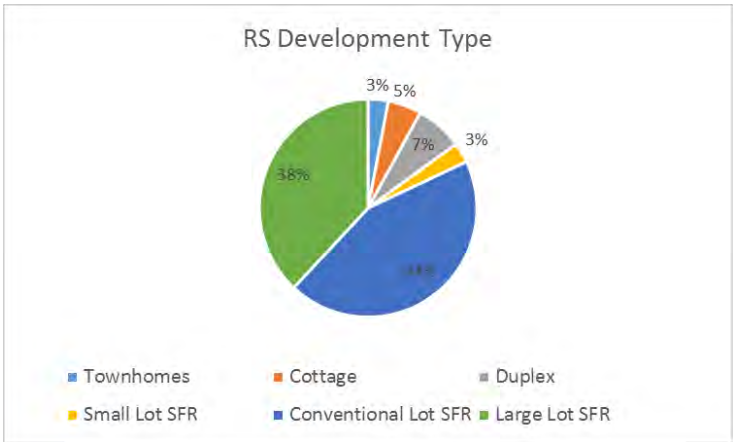
Development types have a variety of attributes, ranging from average lot size to residential energy consumed. The attributes are derived based on the mix of building types included as well as the street characteristics and amount of open space and civic uses included. The building level attributes are aggregated to the development type level as weighted averages using the calibrated mix of building types.



Development types are assigned to lands through "painting" within the GIS.

The painting is correlated to parcels that meet the appropriate criteria. It is important to understand, however, that the analysis is not parcel specific; it does not predict precisely what would occur on a given property. Rather, the weighted averages from the development type are applied to the parcels being painted. This allows the model to do a better job of realizing the variations that happen in the real world based on factors such as developer preference, lot shape, access, views, and neighborhood compatibility.

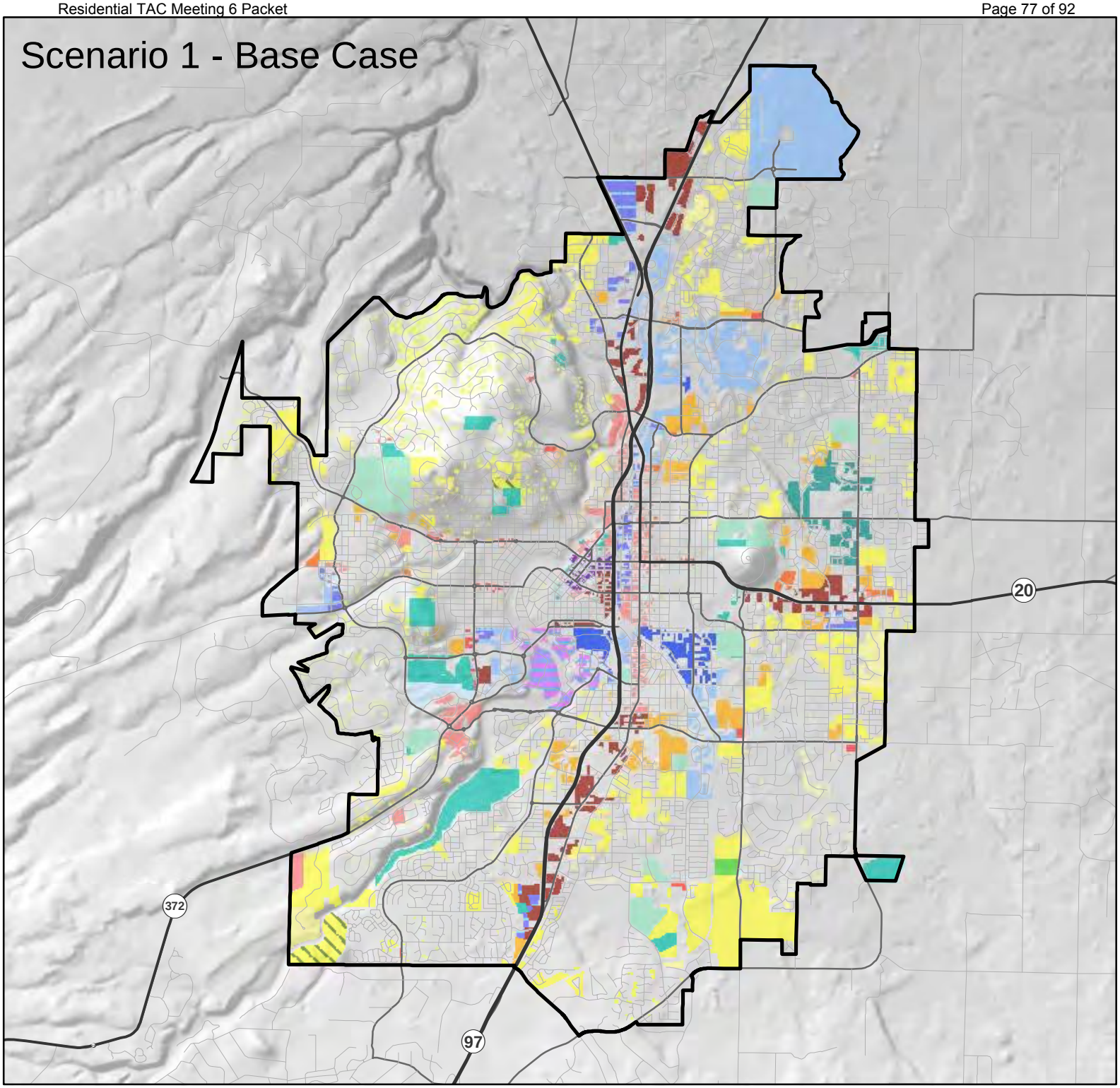
For example, this pie chart shows that the RS development type consists of a range of single-family house types. Accordingly, each acre of land is assigned with a percentage of each of the housing types included. This "averaging" technique facilitates sharing the model outputs seamlessly with the City's infrastructure optimization tool and the travel demand model.



On "vacant" land, the model applies the full amount of density and mix assumptions assigned by the development type. If developed land is painted, the model applies the redevelopment rate specified in the development type spreadsheet and then applies the density and mix assumptions assigned by the development type to the redeveloped fraction of the land. As described above, no development potential is derived from constrained land.

Finally, the model is assessing capacity of the land based on the existing conditions and the densities and products from the development types. Envision Tomorrow does not predict the timing of this development. In essence, it provides a snapshot of potential development projected to occur during the planning period.

Scenario 1 - Base Case



Urban Growth Boundary
State Route

Scenario 1 - Base Case

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

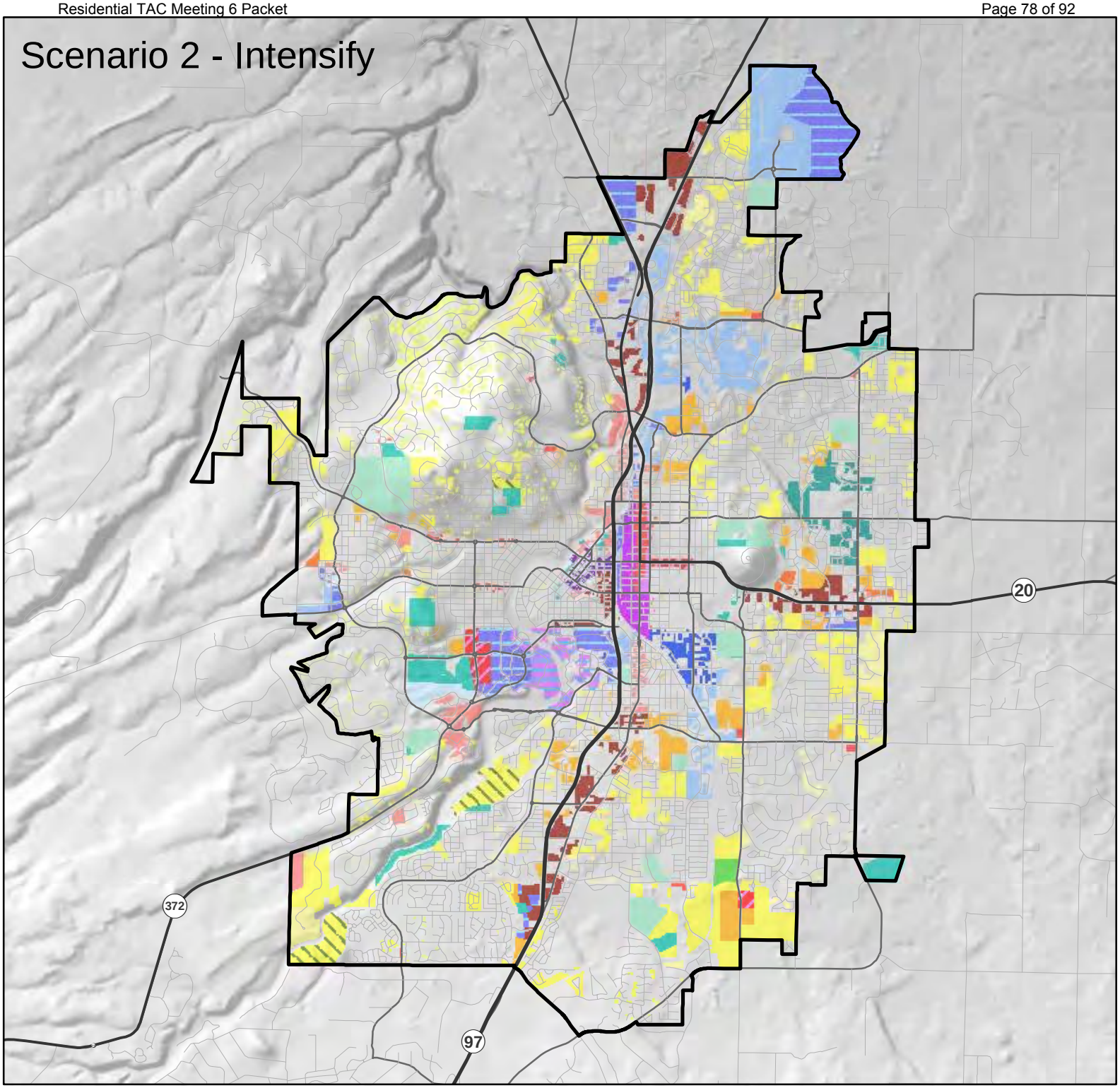
Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
- IG - Industrial General
- SM - Surface Mining
- IP - Industrial Park
- IL - Industrial Light

Residential
- RH - Residential Urban High Density
- RM Masterplan - Residential Urban Medium Density
- RM - Residential Urban Medium Density
- RM for jobs - Residential Urban Medium Density with Jobs
- RM Hillside - Residential Urban Medium Density on Hillside
- RS Masterplan - Residential Urban Standard Density
- RS - Residential Urban Standard Density
- RS Hillside - Residential Urban Standard Density on Hillside
- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Scenario 2 - Intensify



Urban Growth Boundary
State Route

Scenario 2 - Existing Policies

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

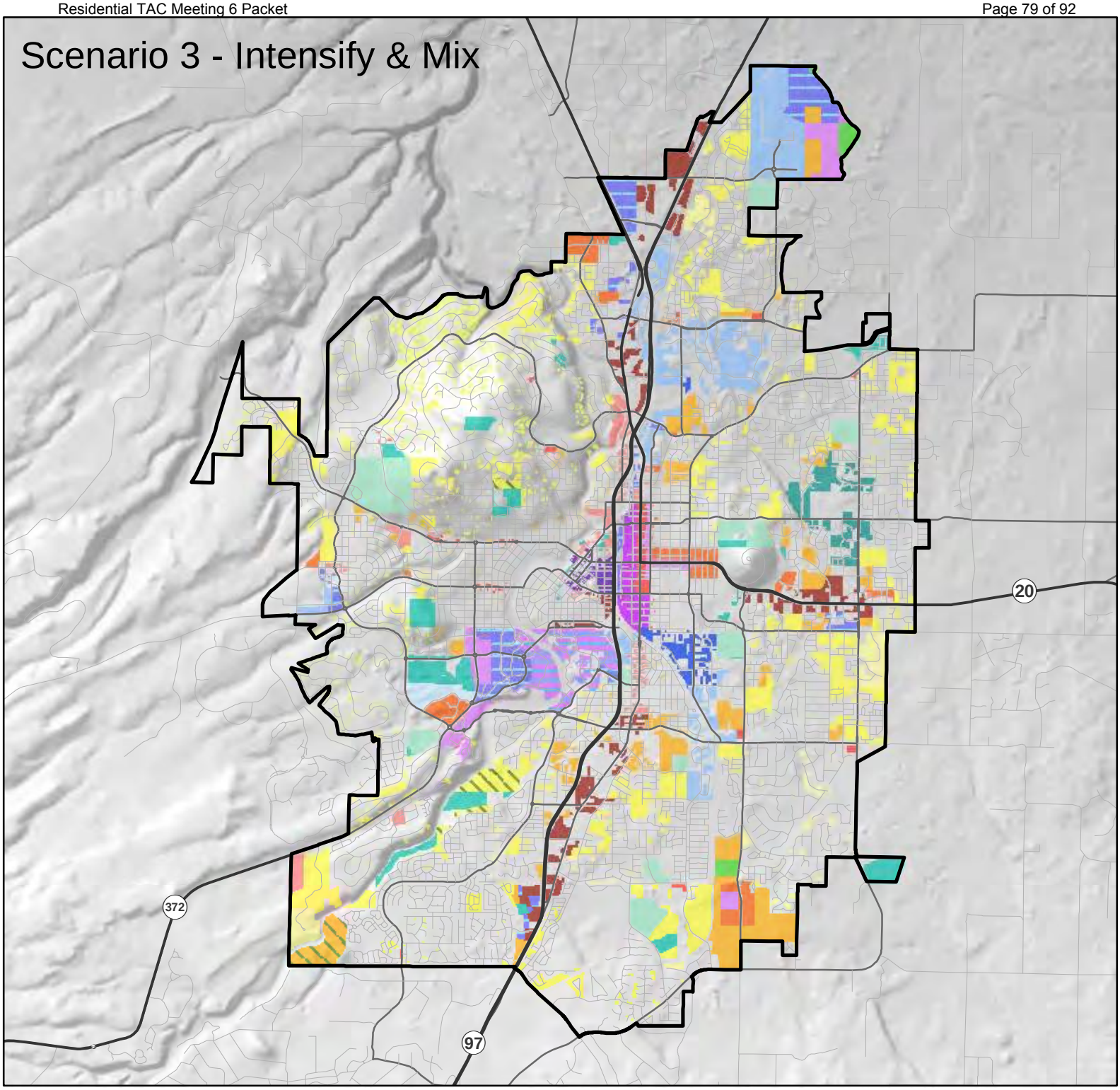
Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
- IG - Industrial General
- SM - Surface Mining
- IP - Industrial Park
- IL - Industrial Light

Residential
- RH - Residential Urban High Density
- RM Masterplan - Residential Urban Medium Density
- RM - Residential Urban Medium Density
- RM for jobs - Residential Urban Medium Density with Jobs
- RM Hillside - Residential Urban Medium Density on Hillside
- RS Masterplan - Residential Urban Standard Density
- RS - Residential Urban Standard Density
- RS Hillside - Residential Urban Standard Density on Hillside
- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Scenario 3 - Intensify & Mix



Urban Growth Boundary
State Route

Scenario 3 - Existing Policies

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
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- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Appendix F: DRAFT BLI Information

INTRODUCTION

This appendix provides information pertaining to the background, process, and results of the Bend UGB Remand Buildable Lands Inventory. **The contents of this appendix are draft and subject to change.**

Remand Issues and Past Work

The Bend Urban Growth Boundary Remand (Remand) required the City to make a number of changes to the way residential land was classified for the purposes of the buildable land inventory (BLI) and the way the capacity of that land was estimated (Sub-issue 2.2). The City of Bend's planning staff has done a significant amount of work to address the issues raised in the remand related to the BLI. That work is summarized in a memorandum to the Urban Growth Boundary (UGB) Remand Task Force from August 2011, updated in January 2014. That memorandum is included in an Appendix as a reference, but key points from it are summarized below.

Definitions and Categories

In reviewing the BLI adopted in 2008, much of the Department of Land Conservation and Development's (DLCD) concern centered on the City's interpretations of categories of land to be included in the inventory. In the remand order, the Land Conservation and Development Commission ruled that the City's categories were not consistent with state law. Except for "Redevelopable Land," the terms used in state law (above) for the categories of land to be included in a BLI are not defined. (Even the definition of "Redevelopable Land" is open to interpretation.) To ensure that on remand the correct categories would be used by the City in the revised BLI, City staff contacted DLCD staff for more specific guidance on how to define the categories of potentially buildable land within the UGB. Through a series of e-mail exchanges, DLCD staff provided their interpretations of state law in the form of definitions that could be used to conduct a GIS parcel-based analysis of every acre of residentially planned or zoned land in the Bend UGB.[1]

Below are the categories and definitions established in coordination with DLCD:

[1] E-mail from Gloria Gardiner, DLCD, to Damian Syrnyk, October 21, 2010. See also e-mail response from Gloria Gardiner, DLCD, to Karen Swirsky, dated June 9, 2011.

- **Vacant** (Completely) – Land planned or zoned for residential use that has $0 in improvement value. Properties that are planned or zoned for residential use, but are dedicated for other uses such as parks, common areas, rights of way or utilities are excluded. Publicly owned land is also excluded.
- **Lots Large Enough for Additional Units under Current Zoning ("Partially Vacant")** – Land planned or zoned for residential use that has an improvements value greater than $0, but contains fewer dwelling units than permitted in the zone. Based solely on lot size, additional units could be built on the site, but the lot is not large enough to further divide.[2]
- **Developed** – Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the zone, and the size of the lot does not allow for further division. (Residentially zoned land that is currently developed with employment uses is categorized as Developed.)
- **Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential")** – Land planned or zoned for residential use that is currently developed, but where the lot is large enough to further divide consistent with its current zoning, based on the minimum lot size of the applicable zone. As with Partially Vacant land, this category does not consider limiting factors such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot.

In addition to the four categories above, the city must consider whether developed land may be redevelopable within the planning horizon. Land may be considered redevelopable only if there exists "the strong likelihood that existing development will be converted to more intensive residential uses during the planning period."

Exclusions

In 2008, the city identified certain categories of parcels as unbuildable in the BLI, including:

- lots and parcels smaller than 0.5 acres with no improvements;
- lots and parcels subject to private, Covenants, Conditions and Restrictions (CC&Rs); and
- lots and parcels with physical constraints over 50 percent or more of the lot.

[2] To identify partially vacant lands, city staff calculated the maximum number of units that could be built on each developed parcel that was not large enough to divide, based on the maximum density allowed per the development code and the parcel size. The number of existing units was then subtracted from the maximum number of units allowed. If one or more new units could be accommodated, the parcel was categorized as partially vacant. (Considerations such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot were not considered, although those will be limiting factors in many cases.)

The Remand required the city to include vacant lots and parcels under 0.5 acres, to include land subject to CC&Rs "unless it adopts specific findings, supported by an adequate factual base, that show why the lands are not available for development or redevelopment during the planning period," and to reexamine the land identified as "constrained" to determine whether the remainder of the lot is buildable.[3]

The City has agreed to include vacant lots and parcels under 0.5 acres and to exclude only the portion of a lot that has physical constraints on it, leaving the remainder. The City has also conducted research on CC&Rs in effect on subdivisions within the UGB to determine whether and to what extent they restrict further development and infill.

State Statute and Administrative Rules

Oregon state statute and administrative rules require local governments to produce a local buildable lands inventory as part of preparation of a Housing Needs Analysis. That BLI "must document the amount of buildable land in each residential plan designation."[4] (A similar inventory is required for employment land as part of preparation of an Economic Opportunities Analysis; however, the requirements for each are different. This memorandum is focused on the Residential BLI.)

State statute identifies the following categories of buildable lands:[5]

> *(A) Vacant lands planned or zoned for residential use;*
>
> *(B) Partially vacant lands planned or zoned for residential use;*
>
> *(C) Lands that may be used for a mix of residential and employment uses under the existing planning or zoning; and*
>
> *(D) Lands that may be used for residential infill or redevelopment.*

It further requires that the local government "demonstrate consideration of:"[6]

> *(A) The extent that residential development is prohibited or restricted by local regulation and ordinance, state law and rule or federal statute and regulation;*
>
> *(B) A written long term contract or easement for radio, telecommunications or electrical facilities, if the written contract or easement is provided to the local government; and*

[3] LCDC Remand Order, page 26.

[4] OAR 660-008-0010

[5] ORS 197.296(4)(a)

[6] ORS 197.296(4)(b)

(C) The presence of a single family dwelling or other structure on a lot or parcel.

The state further defines buildable land in the context of a Residential BLI as follows:[7]

(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.

(6) "Redevelopable Land" means land zoned for residential use on which development has already occurred but on which, due to present or expected market forces, there exists the strong likelihood that existing development will be converted to more intensive residential uses during the planning period.

Updates to the 2008 BLI

When the UGB Remand Task Force began work on the Remand issues, it was initially decided to continue to rely on 2008 data wherever possible, including using 2008 data as the basis for the revised BLI. Thus, when the City began work to reclassify land according to the categories identified above, it did so using the original 2008 parcel database.

However, given the amount of time that has elapsed since then, the City has decided to update the BLI to rely on 2014 data in order to more accurately reflect conditions on the ground. The City has completed the initial steps of this update, identifying the following characteristics for all taxlots within the existing UGB based on July 2014 parcel data from Deschutes County:

- current zoning and general plan designation, including special plan districts;
- current property use information (based on a combination of property class and structure codes from the County Assessor's Office data, City building permit data, aerial photography, and existing City parcel inventory data);
- size and value of existing improvements;
- number of existing housing units;

[7] OAR 660-008-0005(2)

- area subject to physical constraints (25% or greater slopes and 100-year floodplain)[8];
- whether the lot size is more than double the minimum lot size for the zone;
- maximum number of units allowed by current zoning based on lot size and maximum density for the applicable zone/plan designation; and
- public agency ownership (City, County, State, Federal, College District, Irrigation District, Parks District, School District, and Other Special District).

TAC DIRECTION ON BLI ISSUES

The next step was utilizing the information mentioned above to assign a development status to each parcel (using the definitions above). Doing so required the resolution of a number of issues on which the TAC provided direction. These issues are described in the table below.

BLI Issue	Date Addressed	Resolution
CC&Rs	(10/13/14)	Categorize as fully developed all lots and parcels with CC&Rs identified as restrictive of infill potential, even where minimum lot sizes are large enough to allow land division under the current zoning.
Conflicts between plan designation and zone	(11/10/14)	Considered all land with residential plan or zone designations to be part of residential BLI, excepting: - Rely on plan designation with UAR land - Exclude Surface Mining (SM) land (plan or zone) unless specific information indicates that the land will be available for residential uses
Commercial and Mixed Use Zones and Designations	(11/10/14)	Assumed that ME and PO designations are solely employment land and do not provide housing capacity Assume mix of uses in MR zone. For base case, rely on historical trends to establish estimate for housing development. CB and CL zones where there has been at least some residential development, assume potential for some additional residential development. For the base case, rely on historical trends to establish estimate for housing development in each zone.
Medical District Overlay Zone (MDOZ)	(11/10/14)	Treated land in MDOZ as employment land. Estimate potential for housing
Definition of public land	(10/13/14)	Consider land owned by all entities identified as meeting the test of public land, including irrigation districts. Do not consider the other entities as "public". (Given the small amount of land involved for most

[8] See OAR 660-008-0005(2)(c) and (2)(d).

		of the questionable entities, the impact to the BLI either way is small.) Make exceptions for land where specific information indicates that the land is likely to be converted to residential uses within the planning horizon on a case-by-case basis.
Common Areas & Private Open Space	(10/13/14 and 11/10/14)	Treat canals, cemeteries, and private roads as fully developed. Treat golf courses and RV parks as developed unless specific information suggests that they are likely to be converted to residential uses. For common areas, assume that those owned by an HOA or similar organization and those that are part of an approved subdivision are developed. Assume other private open space is vacant in the absence of specific information indicating that it is not available for residential use.
Golf Courses	(11/10/14)	Undeveloped portion of Back Nine golf course considered vacant, all other golf courses considered developed.

BLI RESULTS

Tables

The following table describes the DRAFT BLI status of residential land within the City of Bend. Results are subject to change.

Residential BLI Designation	Approx. # of Parcels*	Total Acres
Developed	28,312	9,154
Lots Large Enough to Divide Under Current Zoning ("Developed with Infill Potential")	4,621	2,569
Lots Large Enough for Additional Units under Current Zoning ("Partially Vacant")	827	93
Publically Owned	844	10
Vacant	3,221	2,151
TBD *(These are split-zoned parcels, or parcels partially outside UGB)*	7	10
TOTAL	38,908	17,559
** This number is approximate because some large parcels were split for use in Envision Tomorrow. Final numbers will be provided as part of the final BLI package.*		

Employment BLI Designation	Approx. # of Parcels*	Total Acres
Developed	3,859	3,157
Vacant	335	1,013
TOTAL	4,194	4,169
** This number is approximate because some large parcels were split for use in Envision Tomorrow. Final numbers will be provided as part of the final BLI package.*		

Maps

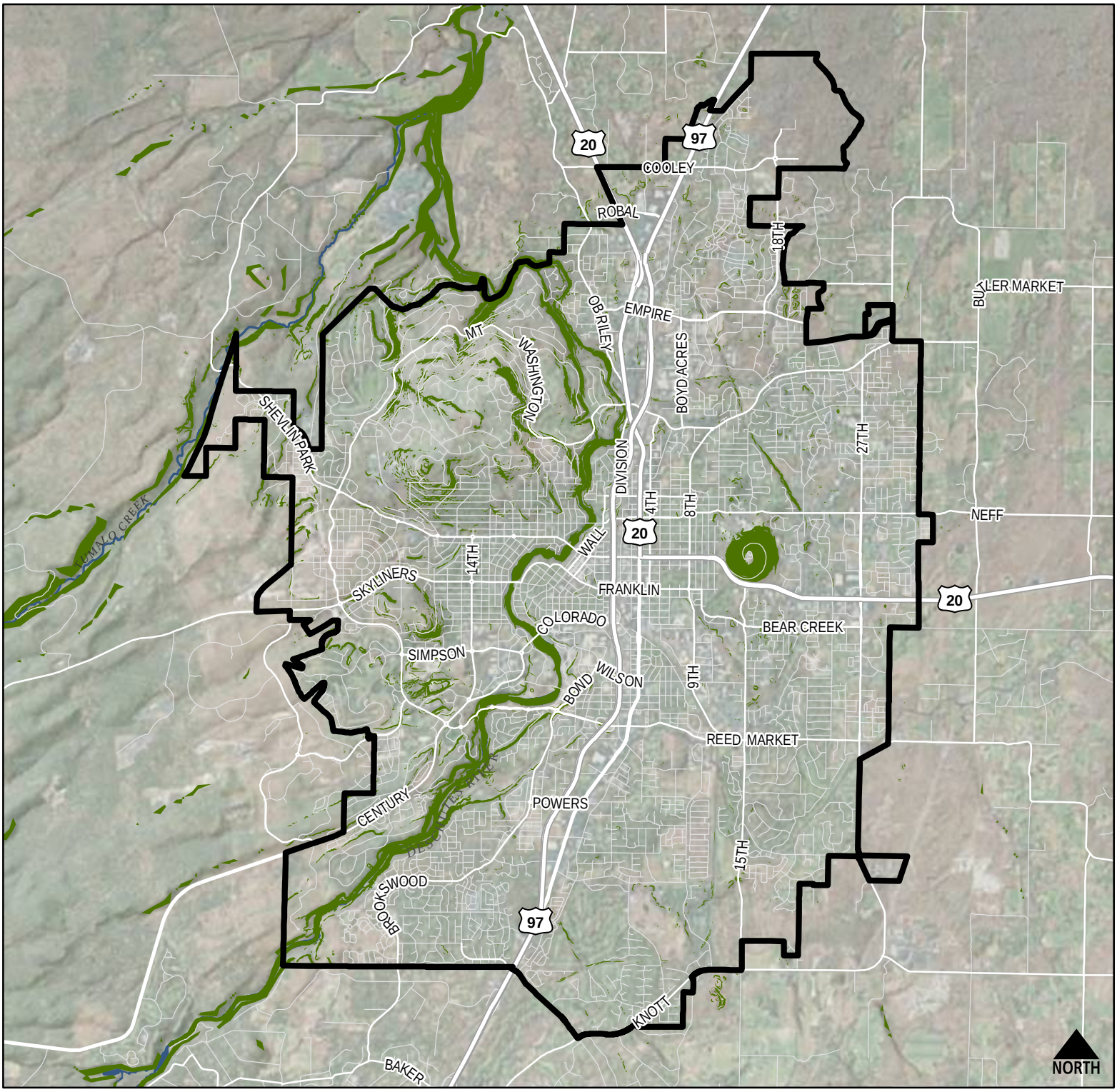
The attached maps depict draft Residential and Employment BLI assumptions and designations in the City of Bend.

DRAFT Buildable Lands Inventory - Constraints

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Constraints
Roads/Highways

Constraints include 100-year flodplain and slopes greater than 25% (per OAR 660-008-0005(2)(c)

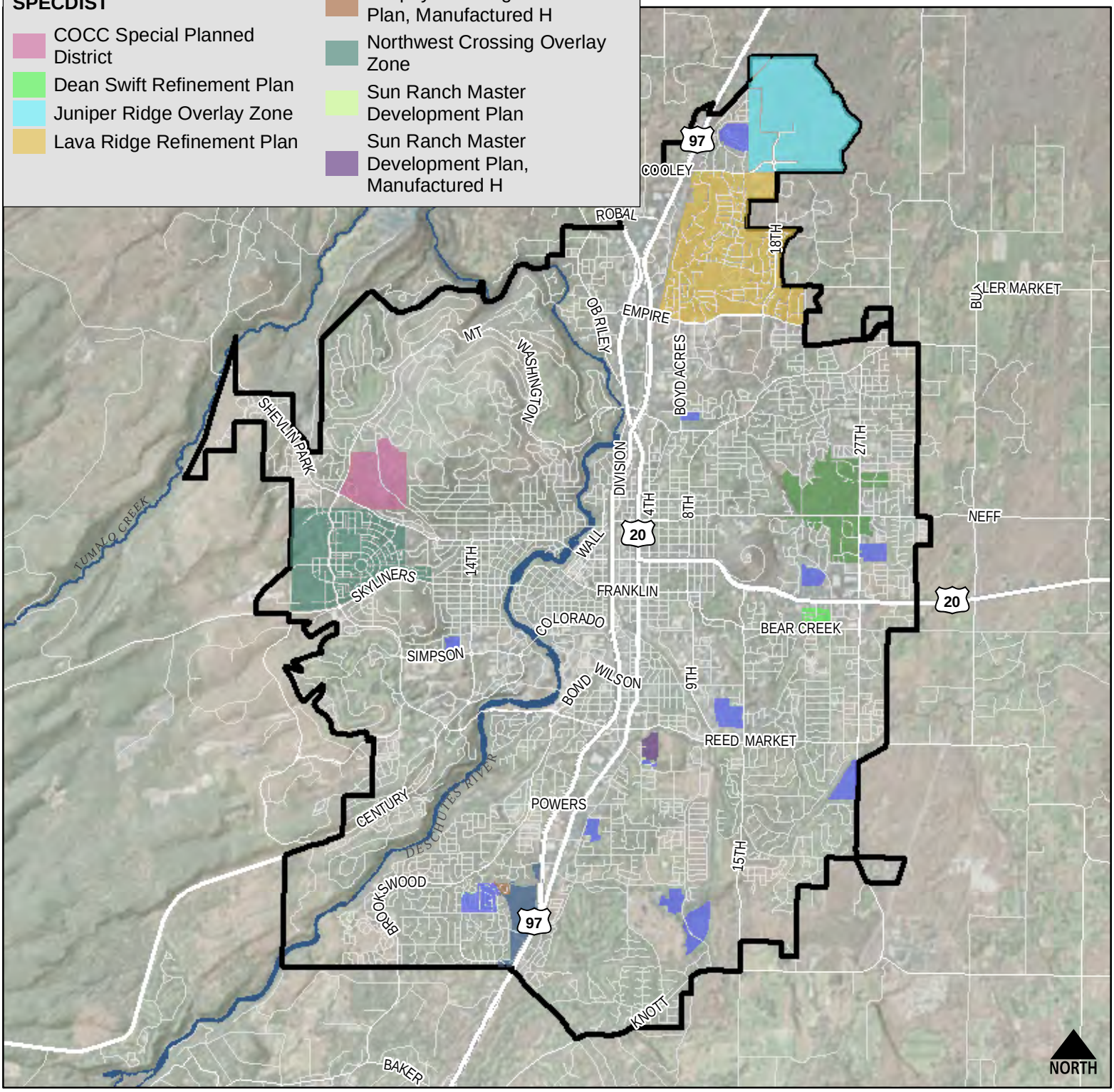


URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2
Miles

DRAFT Buildable Lands Inventory - Special Districts

Prepared 1/21/2015



URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2
Miles

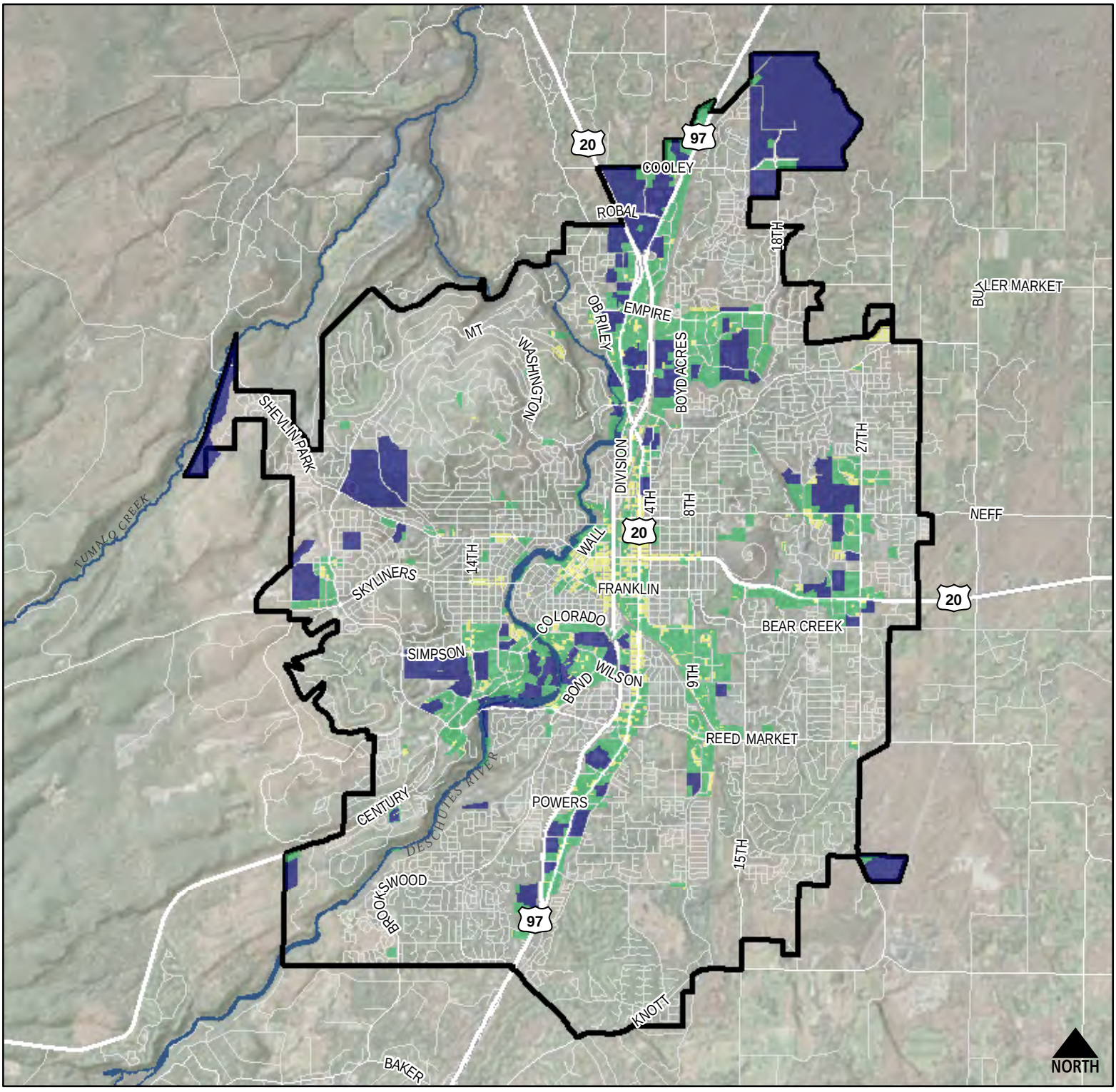
DRAFT Buildable Lands Inventory - Employment Parcel Size

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Roads/Highways

ACRES
0.000080 - 0.500000
0.500001 - 5.000000
5.000001 - 202.719376

Employment Lands include all land planned or zoned for employment use (including mixed use designations & zones). Detailed methodology will be provided in an additional memorandum.



URBAN GROWTH BOUNDARY REMAND
BEND

OAR 660-009-0005 defines employment lands as follows:
"Vacant Land" is equal to or larger than 1/2 acre not currently containing permanent improvements, or; equal to or larger than 5 acres where less than 1/2 acre is occupied by permanent bildings or improvements.

0 0.5 1 2
Miles

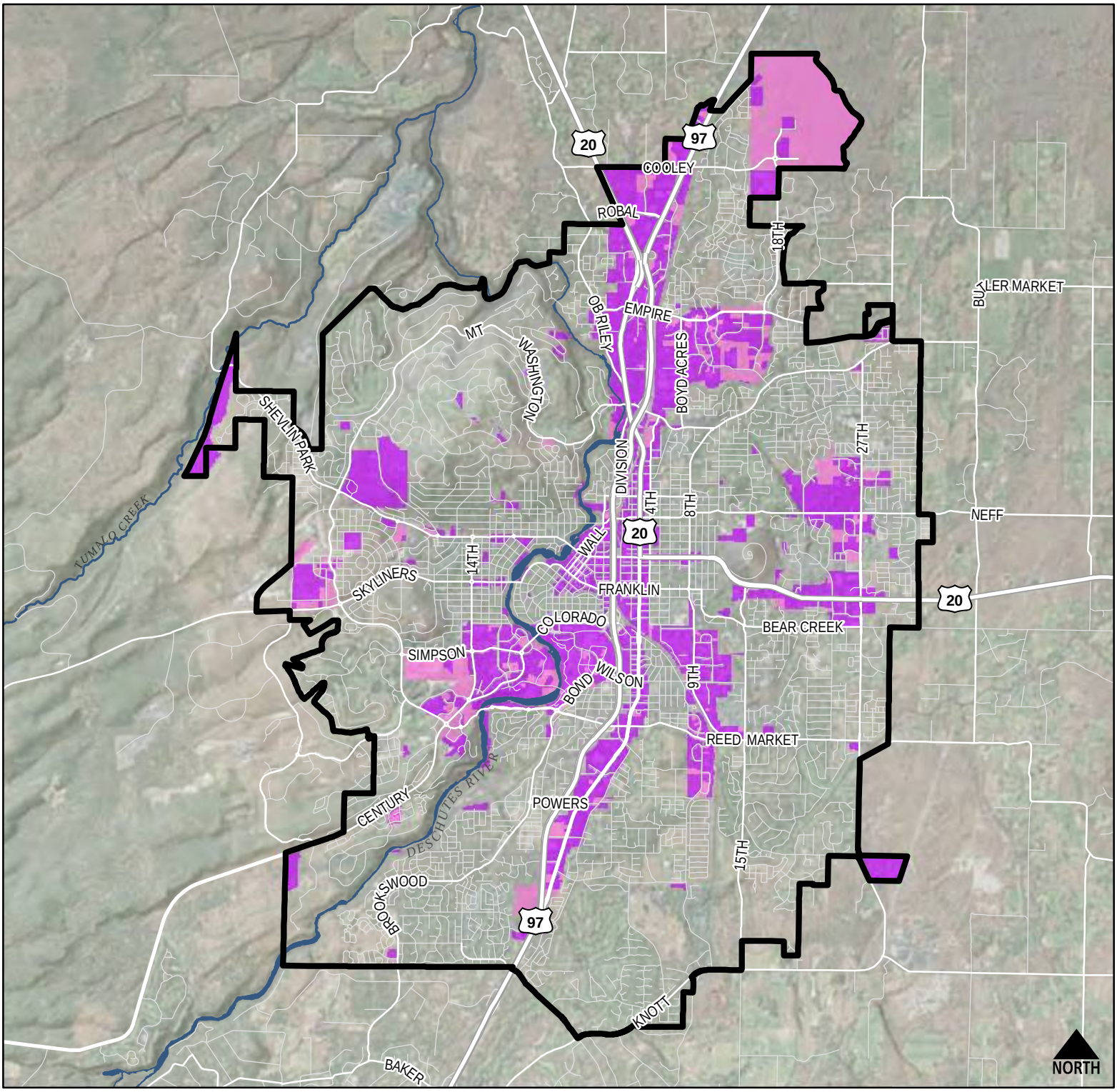
DRAFT Buildable Lands Inventory - Employment

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Roads/Highways

Development Status
Developed
Vacant

Employment Lands include all land planned or zoned for employment use (including mixed use designations & zones). Detailed methodology will be provided in an additional memorandum.



URBAN GROWTH BOUNDARY REMAND

OAR 660-009-0005 defines employment lands as follows:
"Vacant Land" is equal to or larger than 1/2 acre not currently containing permanent improvements, or; equal to or larger than 5 acres where less than 1/2 acre is occupied by permanent bildings or improvements.

0 0.5 1 2
Miles

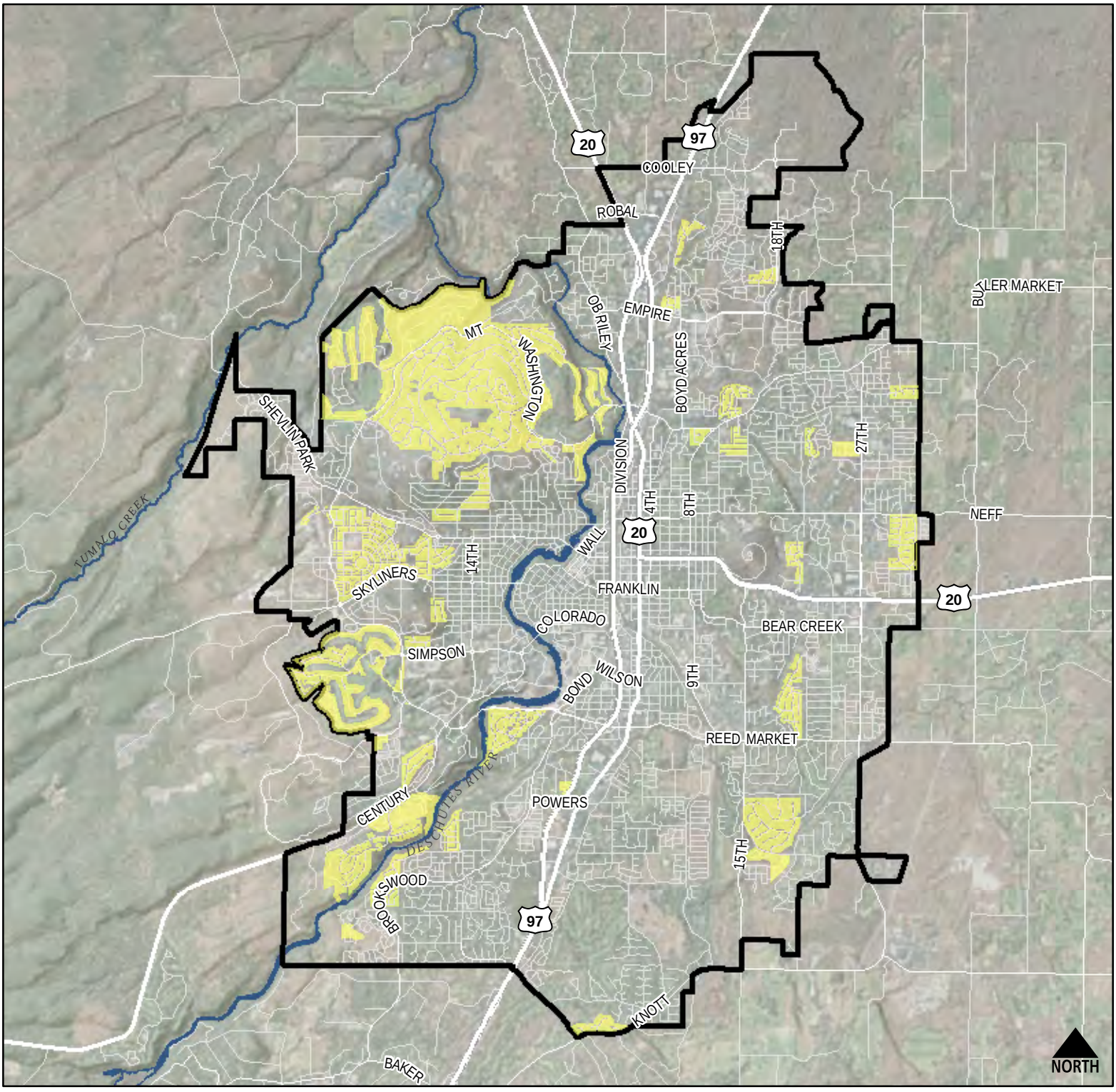
DRAFT Buildable Lands Inventory - Constraints

Prepared 1/21/2015

CCRS

- Land with Restrictive CC&Rs
- Urban Growth Boundary
- Streams/Rivers
- Roads/Highways

CC&Rs limit the development/redevelopment of land. This attribute was populated by APG based on information provided by the City of Bend regarding presence and restrictions in CC&Rs by subdivision. CC&Rs were assumed to apply to all phases of a given subdivision unless information to the contrary was available.



URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2 Miles

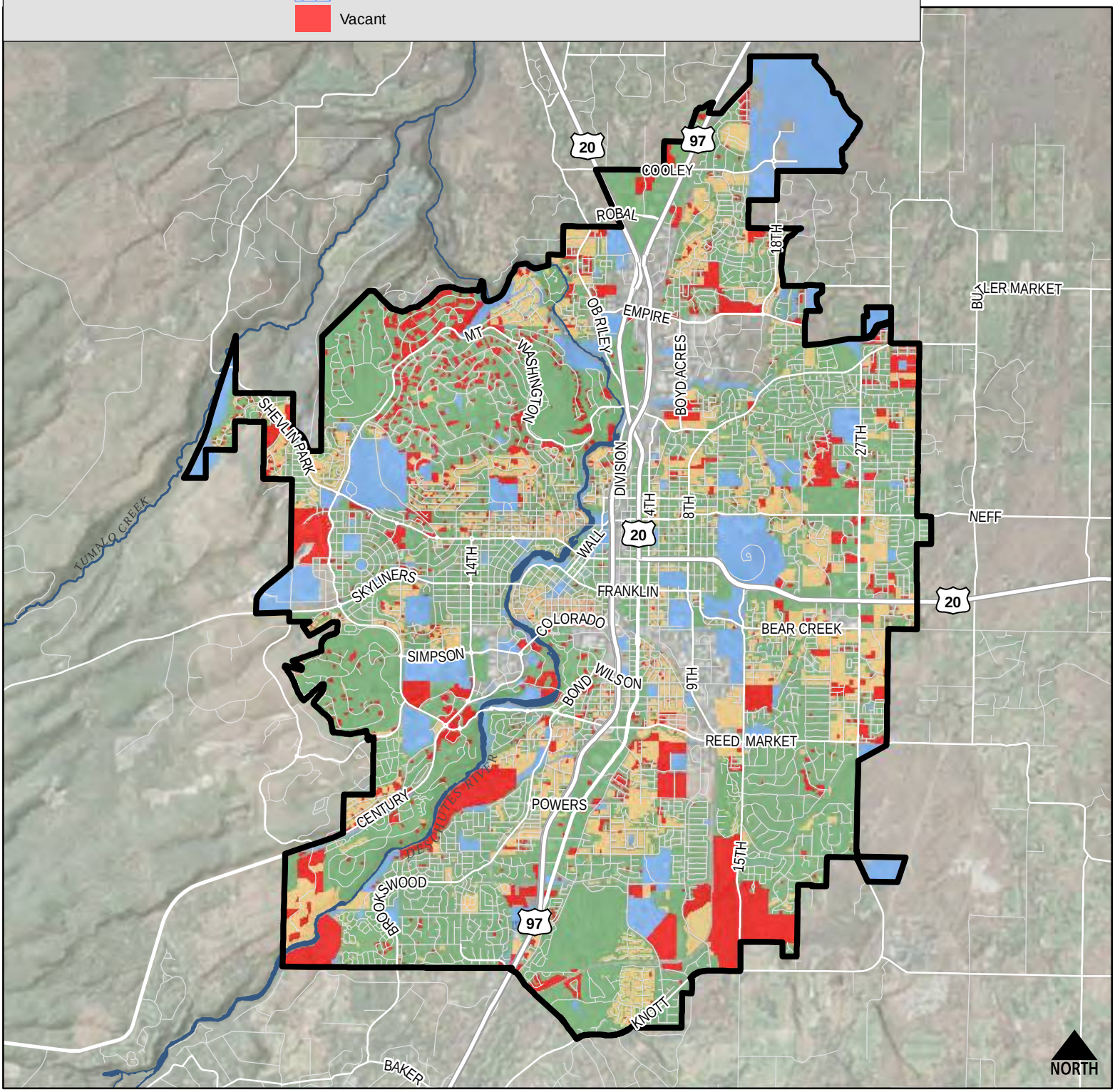
DRAFT Buildable Lands Inventory - Residential

Urban Growth Boundary
Streams/Rivers
Roads/Highways

Development Status

- Developed
- Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential")
- Lots Large Enough for Additional Units Under Current Zoning ("Partially Vacant")
- Publicly Owned
- TBD (Split-Zoned and Other Special Cases)
- Vacant

Prepared 1/21/2015
SUBJECT TO CHANGE



URBAN GROWTH BOUNDARY REMAND

Residential Lands include land in residential comprehensive plan categories and land with a residential zone category, except for land in the Medical District Overlay Zone (MDOZ) and land with a Surface Mining (SM) plan or zone designation. Detailed methodolgoy will be provided in an additional memorandum.

0 0.5 1 2 Miles

03073

City of Bend
Employment Lands Technical Advisory Committee
Meeting #6
Meeting Notes
Date: January 26, 2015

The Employment Lands TAC held its regular meeting at 2:00 pm on Monday January 26, 2015 in the Council Chambers of Bend City Hall. The meeting was called to order at 2:02 pm by Jade Meyer.

Roll Call

- ☐ Ann Marie Collucci
- ☐ Bill Kuhn
- ☐ Brian Fratzke
- ☐ Christopher Heaps
- ☐ Jade Meyer
- ☐ Joan Vinci
- ☐ Ken Brinich
- ☐ Peter Christoff
- ☐ Ron White
- ☐ Todd Dunkelberg
- ☐ Tom Hogue
- ☐ Wallace Corwin
- ☐ Wesley Price

Discussion

1. Welcome and Introductions

Joe Dills welcomed everyone and gave a short introduction of the meeting agenda. He did a look back on the TAC's work and a look forward, including review of the scenarios at this meeting. This work will wrap up at the February meeting. He also reported on the work of the Residential TAC, which met earlier on Monday the 26th.

2. Updated Employment Land Assumptions

Bob Parker gave a short presentation on proposed refinements to the future employment mix and land needs projections. He referred the TAC to page 4 of the packet. The question posed to the TAC was, given changes in employment between 2008 and 2014, should the employment forecasts be changed? The TAC discussed how jobs are classified, changes in employment between 2008 and 2014, and whether the current growth rates in the employment forecast are unrealistic given the 2008 to 2014 period. Bob clarified that the employment forecast is an estimate of employment growth used for estimate land needs for employment; Tom further added that the forecast is a targeting tool and not a steering tool.

Jade clarified whether the TAC would be missing anything by not changing the forecast. Bob added that there were more downsides and no upsides to doing so. Joe asked for closures on this question, and the TAC came to consensus on the team recommendation – use the 2028 employment forecast by sector for estimating land need.

3. Buildable Lands Inventory and Base Case

Andrew Parrish gave the TAC a progress report on the BLI, working from a short series of power point slides. The purpose was to update the Employment TAC on this work. Joe noted that no action was requested from the TAC; just an information update.

4. UGB scenarios and Envision Tomorrow Analysis and Results

Scenarios
Glen Bolen and the team gave the TAC a presentation on the results of the Envision Tomorrow analysis of the different policy packages and UGB scenarios. The team evaluated nine different scenarios using the ET tool = 3 scenarios x 3 packages each = 9 scenarios. Scenario 1 represented the base case. Scenario 2 was identified as the "intensify" scenario. Scenario 3 was referred to as "intensify and mix." Glen reviewed the three scenarios and highlighted the differences between them. With respect to the three efficiency measures policy packages (Packages), Package A represented the current development code. Package B represented the revised code. Package C represent the revised code plus efficiency measures.

He presented the differences between Packages B and C, and referred the TAC to Appendix D of the packet that highlights the differences between packages. For each scenarios, Envision Tomorrow calculated the numbers of new housing units and jobs based on the changes from one scenarios to the next. Scenarios 1a represents what's built under the current general plan. Scenarios 3c represents the scenarios with the greatest differences. The TAC was referred to Figure 8 in the packet (scenarios x packages or 3 x 3). The employment lands in each scenarios were evaluated in a similar manner. With respect to employment lands, Packages B and C yielded similar results in numbers of jobs.

Opportunity Sites
The presentation then focused on the nine (9) opportunity areas evaluated in the scenarios. These areas are described on pages 36 and 37 of the packet. The focus of today's TAC discussion was Opportunity Areas 1, 4, 6, and 7. Joe recapped the Residential TAC's decisions for Areas 1, 4, 6, and 7.

Area 1 (3rd st) – Residential TAC chose hybrid of Scenarios 2 and 3 for Area 1. Joe proposed the Employment TAC use this as their recommendation. Joan moved and Wes seconded the Employment TAC using this recommendation as theirs for Area 1. Motion passed with consensus.

Area 4 (SW Century Drive) – Big difference between Scenarios 2 and 3 for housing; significant job growth between Scenarios 2 and 3. Residential TAC proposed hybrid of Scenarios 2 and 3, with hybrid leaning toward Scenario 3 for housing. Employment TAC had consensus with this recommendation.

Area 6 (Juniper Ridge) – Scenario 2; more housing, fewer jobs. Scenario 3 more jobs, fewer housing units. The TAC discussion on Area 6 included carrying forward a couple of options, some residential and some retail. Residential TAC carried forward Scenarios 2 and 3 and left the final decision to the Employment TAC on Area 6. The TAC further discussed additional residential, the impact on location

of industrial land, infrastructure needed to support development and how it would be funded. Joe summarized the discussion for this area as keep both Scenarios 2 and 3 alive and move both forward. Three straw polls were taken: 8 votes for Scenario 2, 2 votes for Scenario 3, and then finally the TAC voted to move both scenarios forward.

Area 7 – discussion focused on efficiency measures for employment land. The TAC discussion for this area focused on the potential for higher density housing, an anchored center in Scenarios 2 and 3. The TAC had no disagreement with using Scenario 2 for Area 7.

Efficiency Measures Performance

Once the TAC completed their review of the four opportunity areas they discussed the potential for employment land efficiency measures. The discussion touched on revising the lot coverage standard in ME zone and the City's parking standards for employment uses. The TAC also discussed potential incentives and transportation options to consider with lower parking standards.

Action Items/Next Steps

Action	Assigned To
Employment Land Assumptions: TAC agreed with team recommendation	Done
UGB Scenarios – Direction on Opportunity Areas ✓ Area 1: Hybrid Scenarios 2 and 3 ✓ Area 4: Hybrid Scenarios 2 and 3 ✓ Area 6: Carry forward both 2 and 3 ✓ Area 7: Scenario 2	Done

Meeting adjourned at 4:56 pm by Joe Dills.

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: EMPLOYMENT TAC #6

Date: 1/26/2015

Location: COUNCIL CHAMBERS

Name	Organization	Email Address
Tom Hogue	DLCD	
Wes Price	Hammond Price	
Ron Boozell		ron.boozellegmail.com
Kevin Bell		
Gary Vodden	City	vandalmri@gmail.com
Ann Marie Council		AnnMarie@Bendpatrick.com
Todd Dunkelberger	commitee	

Meeting Agenda

Employment Technical Advisory Committee – Meeting 6
Monday, January 26, 2014 2 PM – 5 PM
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Review and approve updated future employment land needs
- Hear a brief update on the Buildable Lands Inventory and the "Base Case"
- Discuss results from the scenario evaluation and direct the team on the next round of scenarios to be prepared

The foundation of the economic opportunities analysis (EOA) is the forecast of employment growth. This agenda item will address how development that occurred between 2008 and 2014 would be factored into the employment mix and how different types of employment should be categorized and tracked in the forecast to 2028. The team will present recommendations on that topic and seek TAC agreement or refinement on the recommended approach.

Based on a variety of available GIS data and assumptions related to buildable lands that were previously vetted by the TAC, the project team has prepared a Buildable Land Inventory (BLI) for the area within the UGB. This BLI was combined with existing Comprehensive Plan and zoning designations and assumptions about future development, including infill and redevelopment, to create a "Base Case" for future development inside the UGB. This Base Case represents one future development and capacity scenario. The team will update the TAC on the BLI and Base Case. The team has prioritized completing work on Base Case and Scenarios memorandum included in this agenda. Therefore, a full BLI document is not included in this packet – it will be provided at a future date.

At a joint TAC/USC workshop in December, TAC and USC members worked with the project team to identify potential future development types within specific opportunity areas inside the UGB, building on previous individual TAC recommendations for those same areas. Based on the results of the workshop, the project team created two scenarios for analysis using the Envision Tomorrow modeling tool. The analysis provides information about a variety of potential outcomes associated with those scenarios. The team will

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

present the results of this analysis and seek feedback from the TAC about which elements should be carried forward into the next round of hybrid scenarios, which elements should not, and which elements might be unique to the bookends of the next scenarios.

Agenda

1.	**Welcome and Introductions**	**2:00 PM**
	a. Welcome and convene	Jade Mayer
	b. Self-introductions	All
	c. Where we are in the process – a brief look back and look forward	Joe Dills, Brian Rankin
2.	**Updated Employment Lands Assumptions** *Information and action*	**2:15 PM**
	a. Presentation: Recommended refinements to the future employment mix and land need projections	Bob Parker, ECONorthwest
	b. TAC discussion and action: does the TAC agree with the project team recommendation or suggest modifications to it?	
3.	**Buildable Lands Inventory and UGB Base Case** *Information*	**2:40 PM**
	a. Presentation and discussion: Buildable Land Inventory and Base Case updates: current work-in-process	Andrew Parish, APG
	b. Next steps: potential special meeting on the BLI in February	Joe Dills, Brian Rankin
4.	**UGB Scenarios and Envision Tomorrow Analysis and Results** *Information and direction*	**3:00 PM**
	Please see Detailed Agenda on page 10 of this packet.	Fregonese & Associates, other team members
	Note: a 10-minute break will be taken at approximately 3:30 AM.	

6. Public Comment 4:45 PM

7. Project News 4:55 PM

a. Announcements and updates
b. News from the other TACs

8. Adjourn 5:00 PM

Memorandum

January 20, 2015

To: Employment Lands Technical Advisory Committee

Cc: Bend Staff

From: APG Project Team

Re: Implications of employment growth in Bend between 2008 and 2013 for Bend's long-term forecast of employment growth.

INTRODUCTION

The foundation of the economic opportunities analysis (EOA) is the forecast of employment growth. In the Remand, Bend was found to have met the requirements of Goal 9, with the forecast of 22,981 new employees from 2008 to 2028. In the years since 2008, Bend's employment has grown and changed.

This memorandum presents information about Bend's employment base in 2013[1], compared to 2008, focusing on the implications for Bend's employment forecast, and ultimately, the need for land to accommodate the new employment. The purpose of the memorandum is to provide the Employment TAC with information about changes in employment between 2008 and 2013 and to inform a TAC recommendation regarding employment growth projections from 2013 to 2028.

Before presenting the information, it is important to note that the 2008 to 2028 employment forecast was upheld in the Remand. As such, we are not required to examine the forecast at all. Moreover, from a practical land planning standpoint the 2008 analysis did not identify a deficit of industrial land without the market choice factor. Thus, the initial analysis did not identify a need for an expansion for industrial land. We don't anticipate that the current work will identify a deficit of industrial land, so the variation between observed and predicted employment is not important from a land planning/UGB amendment standpoint. The information provided in this memorandum is presented in anticipation of questions about how much and what type of employment growth occurred in Bend between 2008 and 2013.

SMALL AREA FORECASTS

For context, it is useful to describe the limitations of small areas forecasts. Forecasts are inherently uncertain. The key axioms of forecasting are (1) forecasts become more uncertain as the

[1] We use 2013 employment data, rather than 2014 employment data, because it is the best available data for Bend. The employment data used is the Oregon Employment Department's Quarterly Census of Employment and Wages. Data for 2014 will not be available until mid- to late-2015.

timeframe increases, and (2) forecasts become more uncertain as the geographic area becomes smaller. Following is a discussion of why small area forecasts are highly uncertain:

- Projections for population and employment in most cities and counties are not based on deterministic models of growth; they are simple projections of past growth rates into the future. They have no quantitative connection to the underlying factors that explain why and how much growth will occur.
- Even if planners had a sophisticated model that links all these important variables together (which they do not), they would still face the problem of having to forecast the future of the variables that they are using to forecast growth (in, say, population or employment). In the final analysis, all forecasting requires making assumptions about the future.
- Comparisons of past population/employment projections to subsequent population/employment counts have revealed that even much more sophisticated methods than the ones used in the study "are often inaccurate even for relatively large populations and for short periods of time." The smaller the area and the longer the period of time covered, the worse the results for any statistical method.
- Small areas start from a small base. A new subdivision of 200 homes inside the Portland Urban Growth Boundary has a small effect on population; the same subdivision in Bend will have a proportionally larger population increase.
- Especially for small cities in areas that can have high growth potential like Bend (e.g., because they are near to concentrations of demand in neighboring metropolitan areas, or because they have high amenity value for recreation or retirement), there is ample evidence of very high growth rates in short-term; there are also cases (fewer) of high growth rates sustained over 10 to 30 years.
- Forecasts commonly use some variation of a trend line which is based on a rate of change. While the trend line may ultimately lead to a forecast that is relatively accurate, year-over-year change rarely adheres closely to the trend line.
- Public policy makes a difference. Cities can affect the rate of growth through infrastructure, land supply, incentives and other policies. Such policies generally do not have an impact on growth rates in a region, but may cause shifts of population and employment among cities.

In summary, the longer the forecast, the greater the potential that actual population/employment growth will vary from the forecast. This implies that cities should closely monitor actual population/employment growth so that either (1) plans can be modified to account for variations, or (2) policies can be implemented that increase the likelihood of achieving the population growth.

EMPLOYMENT CHANGES IN BEND

The EOA presented a methodology to estimate employment in Bend in 2008, as the basis for the forecast of employment that will require new land over the 2008 to 2028 period. Table 1 shows the EOA forecast of growth by major employment categories for Bend for 2008 to 2028 from the 2008 EOA. The forecast shows that employment will grow by 22,891 employees (about 61%) over the 20 year period between 2008 and 2028, at an average annual growth rate of 2.4%.

Table 1. Employment Forecast by Employment Category, total non-shift employment, Bend 2008 to 2028

			Change 2008 to 2028		
Employment Categories	2008 Employment	2028 Employment Forecast	2008 to 2028 Growth	% Change	Average Annual Growth Rate
Industrial					
Industrial Heavy	3,807	5,180	1,373	36%	1.6%
Industrial General	5,370	8,002	2,632	49%	2.0%
Retail			-		
Large Retail	3,474	5,849	2,375	68%	2.6%
General Retail	3,244	5,293	2,049	63%	2.5%
Office/Srv/Medical	13,979	23,593	9,614	69%	2.7%
Leisure and Hospitality	3,306	5,532	2,226	67%	2.6%
Other / Misc	1,051	1,547	496	47%	2.0%
Government	3,485	5,611	2,126	61%	2.4%
Total	37,716	60,607	22,891	61%	2.4%

Source: Bend EOA, 2008, Table 26; 2028 Employment forecast: Bend EOA, 2008, Table 25.
2008 data based on Oregon Employment Department 2006 geo-coded data for City of Bend
Note: While the employment in this table is based on covered employment data from the Oregon Employment Department, the 2008 covered employment data was adjusted, using the methods described in the EOA, to show total employment for non-shiftworkers.

Since the forecast for the 2008 EOA was developed, Bend's economy has changed, in large part as a result of the recent recession. Table 2 shows change in employment in Bend between 2008 and 2013. Overall, employment grew by 948 employees, at an average annual growth rate of 0.5%. Industrial employment decreased by about 2,500 employees and retail employment decreased by more than 550 employees. The majority of employment growth was in Office, Services, and Medical, which added more than 2,400 jobs.

Table 2. Employment Forecast by Employment Category, total non-shift employment, Bend 2008 to 2013

			Change 2008 to 2013		
Employment Categories	2008 Employment	2013 Employment	2008 to 2028 Growth	Percent Change	Average Annual Growth Rate
Industrial					
Industrial Heavy	3,807	2,889	(918)	-24%	-5.4%
Industrial General	5,370	3,771	(1,599)	-30%	-6.8%
Retail					
Large Retail	3,474	3,057	(417)	-12%	-2.5%
General Retail	3,244	3,096	(148)	-5%	-0.9%
Office/Srv/Medical	13,979	16,435	2,456	18%	3.3%
Leisure and Hospitality	3,306	4,017	711	22%	4.0%
Other / Misc	1,051	1,505	454	43%	7.4%
Government	3,485	3,894	409	12%	2.2%
Total	37,716	38,664	948	3%	0.5%

Source: Bend EOA, 2008, Table 26.
2008 data based on Oregon Employment Department 2006 geo-coded data for City of Bend
2013 data based on Oregon Employment Department 2013 Quarter 3 geo-coded data for City of Bend
Note: While the employment in this table is based on covered employment data from the Oregon Employment Department, the 2008 and 2013 covered employment data was adjusted, as using the methods described in the EOA, to show total employment for non-shiftworkers.

Using the 2013 total non-shift employment figure of 38,664 and the 2028 acknowledged forecast of 60,607 yields an increase of 20,943 new employees between 2013 and 2028. This equates to an average annual growth rate of 3.0% over that period. Table 1 shows that the acknowledged 2008 to 2028 forecast of 22,891 new employees resulted in an average annual growth rate of 2.4%. In short, employment growth between 2008 and 2013 occurred at much slower pace than the City forecasted. This is not surprising—the forecast did not account for a major global economic recession.

If we start with the employment base in Bend in 2013 and the use the acknowledged forecast for future employment in Bend in 2028 of 60,607, employment as a whole and in some sub-categories of employment will grow faster than the forecast for 2008 to 2028.

Table 3 compares employment in Bend in 2013 to the forecast for employment growth by 2028, from the EOA. Figure 1 illustrates the differences between employment by employment in Bend in 2008 and 2013, as well as the forecast of employment growth in Bend in 2028. Table 3 shows:

- **All employment**. Bend added 948 jobs between 2008 and 2013, at a slower growth rate (0.5%) than the forecast growth rate (2.4%). If the City uses the acknowledged forecast of 60,607 employees in 2028, the implication is that the employment forecast will need to assume that employment grows at an average of 3.0% per year between 2014 and 2028. Because employment at the sector level was substantially different than the forecast of employment growth, the forecast would make the following assumptions that differ from the acknowledged 2008 to 2028 forecast:
    - **Industrial employment will grow faster**. Bend lost about 2,500 employees in industrial sectors between 2008 and 2013. To make up for lost employment and reach the forecast of employment growth by 2028, Industrial employment will need to grow at 4% to 5% per year. This growth rate is substantially higher than the 1.6% to 2.0% growth rate for Industrial employment assumed in the EOA.
    - **Retail employment will grow faster**. Bend lost about 550 employees in retail sectors between 2008 and 2013. To make up for lost employment and reach the forecast of employment growth by 2028, Retail employment will need to grow at about 3.5% to 4.5% per year. This growth rate is faster than the 2.5% to 2.0% growth rate for Retail employment assumed in the EOA.
    - **Office, Services, and Medical employment will grow slower**. Bend added more than 2,400 employees in these sectors, at an average annual growth rate of 3.3%. To reach the 2028 forecast of growth in these sectors, Bend would need to grow at 2.4% per year. This suggests that Bend may exceed the forecast for growth in these industries.

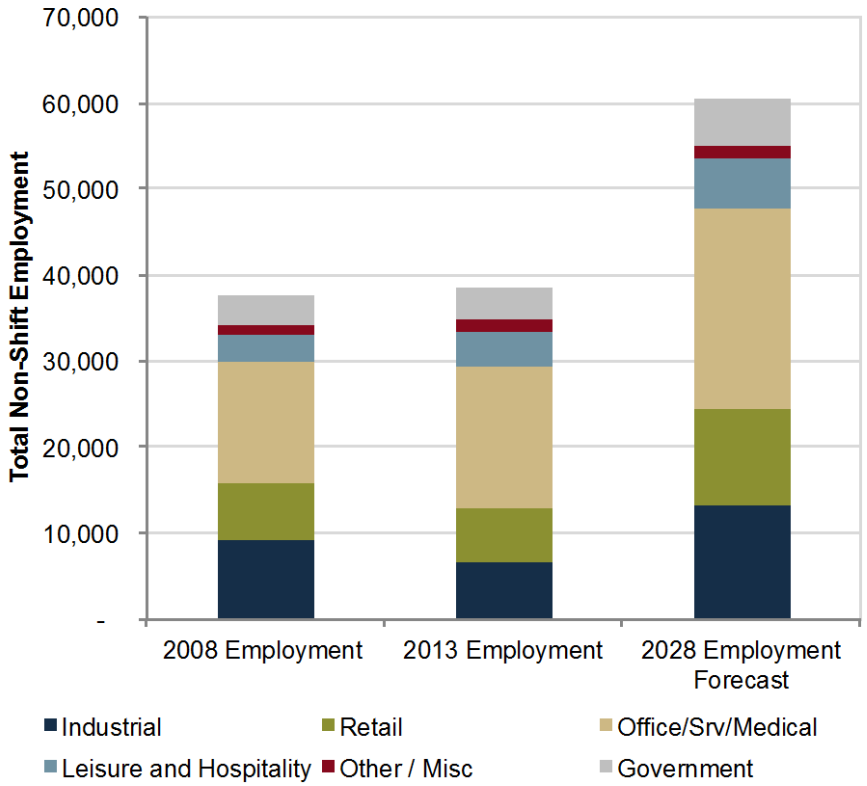
Table 3. Employment Forecast by Employment Category, non-shift workers, Bend 2008 to 2013

Employment Categories	2013 Employment	2028 Employment Forecast	Change 2013 to 2028: 2013 to 2028 Growth	Change 2013 to 2028: Percent Change	Change 2013 to 2028: Average Annual Growth Rate
Industrial					
Industrial Heavy	2,889	5,180	2,291	79%	4.0%
Industrial General	3,771	8,002	4,231	112%	5.1%
Retail					
Large Retail	3,057	5,849	2,792	91%	4.4%
General Retail	3,096	5,293	2,197	71%	3.6%
Office/Srv/Medical	16,435	23,593	7,158	44%	2.4%
Leisure and Hospitality	4,017	5,532	1,515	38%	2.2%
Other / Misc	1,505	1,547	42	3%	0.2%
Government	3,894	5,611	1,717	44%	2.5%
Total	38,664	60,607	21,943	57%	3.0%

Source: 2028 Employment forecast: Bend EOA, 2008, Table 25.
2013 data based on Oregon Employment Department 2013 Quarter 3 geo-coded data for City of Bend
Note: While the employment in this table is based on covered employment data from the Oregon Employment Department, the 2013 covered employment data was adjusted, as using the methods described in the EOA, to show total employment for non-shiftworkers.

Figure 1 shows a comparison of total non-shift employment by employment category in 2008 and 2013 and the forecast of employment growth in Bend for 2028.

Figure 1. Comparison of Changes in Employment by Employment Categories in 2008, 2013, and 2028 Forecast, non-shift workers, Bend



Source: Bend EOA, 2008, Table 26.
2008 data based on Oregon Employment Department 2006 geo-coded data for City of Bend
2013 data based on Oregon Employment Department 2013 Quarter 3 geo-coded data for City of Bend
Note: While the employment in this figure is based on covered employment data from the Oregon Employment Department, the 2008 and 2013 covered employment data was adjusted, as using the methods described in the EOA, to show total employment for non-shiftworkers.

The implications of the sectoral shifts are that (1) development (e.g., new built space) occurred to meet the growth in Office, Services, and Medical employment, and (2) vacancy rates increased for manufacturing and retail. Quantifying these changes (i.e. how much new development and what change in vacancy rates) would require an involved analysis—assuming the data are available.

The alternative to using the acknowledged 2028 employment figure is to develop a new forecast. This would require additional work by the City, the consulting team, and the TAC. More importantly, it would open the employment forecast to state review and potential challenges.

The project team recommends the City use the acknowledged 2028 forecast – both the overall employment projection of 60,607 and the employment projections by sector. This means assuming that the sector growth rates will change for the remainder of the 20 year planning period to yield the same average annual growth rates for the 20 year period that were originally projected. These projections will provide the target for employment growth to be accommodated in the future urban growth boundary.

The key discussion items for the January Employment TAC are:

- Does the TAC have additional questions about how employment changed between 2008 and 2013?
- In light of these changes, does the TAC agree with the recommendation to use the acknowledged 2028 employment forecast by sector for the purpose of estimating land need?

Memorandum

January 21, 2015

To: Employment Technical Advisory Committee
Cc: Project Team
From: Angelo Planning Group Team
Re: Scenarios Discussion Guide – Crafting Hybrid Scenarios

INTRODUCTION

The purpose of this memorandum is to provide guidance to the TAC regarding crafting of the next scenarios for the current UGB. As noted in the scenario analysis memo, the team's work to date has created an analysis and a working understanding about how individual elements of the scenarios perform. The team has been careful to note that these results should not be interpreted as final scenarios. Rather, the team recommends that the TAC discuss the working findings, and select which elements to advance as bookends for further evaluation in Phase 2 of this effort. This memo describes a detailed agenda and provides some questions intended to help organize that discussion by the TAC.

DETAILED AGENDA FOR SCENARIOS DISCUSSION

The following is a proposed approach for discussing the scenarios and obtaining TAC direction on preferred elements. It is a detailed agenda for Agenda Item 4, UGB Scenarios and Envision Tomorrow Analysis and Results.

Step 1 – Presentation and discussion

Staff will summarize key points from the analysis, working from the memorandum titled Draft Analysis of Current Urban Growth Boundary – Base Case and Scenarios.

TAC questions and comments will be taken "as we go", with the facilitator managing time.

Step 2 – TAC preferences regarding Opportunity Area scenarios to advance

This part of the discussion will focus on Opportunity Areas, starting with those which showed the most marked influence on employment capacity and urban form. Using the analysis results – principally Table 4 and Table 6 – the TAC will discuss the Opportunity Areas, focusing on those which vary most significantly by scenario and determine:

- Which of the Opportunity Area scenarios (Scenarios 1, 2, or 3) should be advanced into the next round? In the interest in narrowing, the team's preference is for one of the three to be selected, but the TAC may identify more than one or a hybrid idea.

The order of review will be as follows:

- Opportunity Area 1 – 3rd Street
- Opportunity Area 2 – East of Downtown
- Opportunity Area 4 – SW Century Drive
- Opportunity Area 6 – Juniper Ridge
- Opportunity Area 7 – SE 15th / JL Ward Co Properties
- Other Opportunity Areas

Criteria

How should the TAC determine which scenarios to advance? We suggest the following criteria, which are the guiding criteria for project recommendations.

- Meeting Remand and related legal requirements, with a special focus on:
  a. Meeting the City's proposed employment mix
  b. Ensuring development is "reasonably likely", i.e. generally feasible from a market perspective

- Meeting the project goals

- Creating explicit urban form outcomes which support the above criteria

Please see attached for a summary of key Remand requirements and the project goals adopted by the UGB Steering Committee.

Step 3 – TAC preferences regarding which code-related Efficiency Measures to advance

Staff will recap which efficiency measures appear to be "drivers", i.e. those that have a relatively higher influence on housing capacity and mix.

Using the results of the analysis in the Results section, the TAC will discuss the efficiency measures. As a starting premise, the team recommends that the TAC identify a range of efficiency measures to carry forward, therefore shaping the bookends for Phase 1 conclusions that will be carried into Phase 2. The specific questions for the TAC are:

- Which of the efficiency measures should not be carried forward in either of the packages? Which efficiency measures should be refined in the next scenario evaluation?

The criteria for selecting efficiency measures are the same as described above for the Opportunity Areas.

Summary of Key Remand Requirements

Relevant to Employment Recommendations for the Current UGB

Enclosed for the TAC's consideration are a brief summary of some of key remand requirements relevant to the review of efficiency measures. The TAC will also find the Remand Index attached for reference. Sub-issues 5.1 through 5.9 are particularly relevant. When evaluating which opportunity areas and scenarios to take forward into Phase 2, please consider the following:

- (t)he City may satisfy Goal 9 and division 9 by other means, for example through a site-by-site redevelopment analysis. However, a site-by-site analysis is not required; the Commission determines that using a factor is acceptable where findings explain evidentiary basis and address the Goal 14 requirement to reasonably accommodate development within the existing UGB.

  Under OAR 660-009-0015(3)(a)(C), the EOA Inventory of Industrial and Other Employment Lands for cities and counties within a Metropolitan Planning Organization, must include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land.

- This short-term supply analysis required for jurisdictions within MPOs is in addition to the EOA inventory requirements applicable to all comprehensive plans for areas within urban growth boundaries. OAR 660-009-0015(3)(a)

- Furthermore, division 9 requires that comprehensive plans for cities such as Bend "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." OAR 660-009-0020(2).

Project Goals – Adopted by the UGB Steering Committee September 4, 2014

A Quality Natural *Environment*

As Bend grows, it preserves and enhances natural areas and wildlife habitat. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Balanced Transportation System

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

Great Neighborhoods

Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks. Small neighborhood centers provide local shops, a mix of housing types, and community gathering places. The character of historic neighborhoods is protected and infill development is compatible.

Strong Active Downtown

Bend's downtown continues to be an active focal point for residents and visitors with strong businesses, urban housing, civic services, arts and cultural opportunities, and gathering places. Parking downtown is adequate and strategically located. Planning in other areas continues to support a healthy downtown.

Strong Diverse Economy

Bend has a good supply of serviced land planned for employment growth that supports the City's economic development goals, provides a range of diverse jobs and industries, and supports innovation. Employment areas, large and small, have excellent transportation access.

Connections to Recreation and Nature

Bend continues to enhance its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city.

Housing Options and Affordability

Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing design is innovative and energy efficient.

Cost Effective Infrastructure

Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

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Remand Subissue	Directives to City on Remand
Buildable Lands Inventory	
2.2 (Analysis) Page 24	1. Additional findings also are necessary to clarify how the City considered "redevelopable" lands. 2. On remand, the City must analyze the development capacity of the vacant and redevelopment lands in light of the actual trends in redevelopment of developed properties and infill of vacant properties. 3. While the Commission understands that this development may have utilized much of the vacant and redevelopable land within the prior UGB, to the extent the City projects that it will deviate from those past trends significantly in the future, the City needs to explain why in its findings
2.2 (Conclusion) Page 26	4. The city's findings must explain what criteria it uses (based on ORS 197.296, OAR 660-024 and 660-008) to determine whether particular lands are vacant or redevelopable, examine the amount and type of development that has occurred on the vacant and redevelopable lands since its last periodic review, and project the capacity of the city's buildable lands (prior to additional measures being implemented) based on that analysis (and as further detailed in connection with Goal 14, below). 5. If the amount of redevelopment and infill within the city's UGB is projected to differ significantly from past trends, the City must explain why, and provide an adequate factual and policy basis to support that change 6. The city's buildable lands inventory may not exclude lots and parcels smaller than 0.5 acres with no improvements without specific findings consistent with OAR 660-008-0005. 7. City may not exclude lots and parcels subject to CC&Rs unless it adopts specific findings, supported by an adequate factual base, that show why the lands are not available for development or redevelopment during the planning period. 8. City has agreed to reexamine lands it identified as "constrained" to determine whether the lands are buildable under OAR 660-008-0005.
2.2 (Director's Report) Page 45	9. Include a map of buildable lands, as required by ORS 197.296(4)(c), as well as a zoning map and a comprehensive plan map for the lands within the prior UGB; 10. Include as its inventory of buildable lands, an analysis for each residential plan district of those lands that are "vacant," and of those lands that are "redevelopable" as those terms are used in ORS 197.296(4)-(5) and OAR 660-008-005(6). As part of this inventory, include an analysis of what amount of redevelopment and infill has occurred, and the density of that development, by plan district, since 1998. The inventory must include the UAR and SR 2 ½ plan districts, as well as the RL, RS, RM and RH district 11. If the city excludes lands on the basis that there is not a strong likelihood that existing development will be converted to more intense residential uses during the planning period, include an analysis of lands within all districts showing the extent to which infill and redevelopment has or has not occurred since 1998 12. For each zoning district, analyze the number of units, density and average

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	mix of housing types of urban residential development that has actually occurred since 1998 (including through rezoning) and how much of this occurred on vacant lands, and how much occurred through redevelopment 13. For each zoning district, analyze whether future trends over the 20-year planning period are reasonably expected to alter the amount, density and mix of housing types that has actually occurred since 1998 14. For each zoning district, adopt findings and conclusions regarding the number of units, the density, and the mix of housing types that the city concludes is likely to occur over the planning period, and identify how much is expected to occur on vacant lands, and how much is expected to occur through redevelopment
Housing Needs Analysis – Goal 10	
2.3 (Analysis) Pages 31-32	15. While the City is free to *separate* the three basic housing types required to be analyzed by statute into subcategories, it may not *combine* categories as this effectively makes it impossible to do the analysis required by statute 16. Goal 10, the Goal 10 implementing rule, and the needed housing statutes also require that the City analyze needed housing types at particular price ranges and rent levels commensurate with the financial capabilities of present and future residents of area residents. 17. …under Goals 10 and 14 the City also must consider the *future* housing needs of area residents during the (twenty-year) planning period. The purpose of the analysis of both past trends and future needs is that -- if there is a difference – the local government must show how it is planning to alter those past trends in order to meet the future needs. 18. if the *future* needs require a different density or mix of housing types than has occurred in the past, then ORS 197.296(7) requires the local government to show how new measures demonstrably increase the likelihood that the needed density and/or mix will be achieved.
2.3 (Conclusion) Pages 32-33	19. remands the city's decision for it to revise its findings and chapter 5 of its comprehensive plan consistent with the preceding analysis
2.3 (Director's Report) Pages 45-46	20. Revise the Housing Needs Analysis to comply with ORS 197.296, OAR 660-008-0020, and ORS 197.303. The Housing Needs Analysis must include an evaluation of the need for at least three housing types at particular price ranges (owner occupancy) and rent levels (renter occupancy), and commensurate with the financial capabilities of current and future residents. Those housing types include: (a) attached single family housing (common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot pursuant to OAR 660-008-0005(1)); (b) detached single family housing (a housing unit that is free standing and separate from other housing units pursuant to OAR 660-008-0005(3); and (c) multiple family housing (attached housing where each dwelling unit is not located on a separate lot pursuant to OAR 660-008-0005(5)); 21. Adopt the revised Housing Needs Analysis as an element of the comprehensive plan, along with findings that demonstrate how the revised Housing Needs Analysis complies with the applicable statutory, goal and rule requirements described above;

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	22. Analyze what the mix of plan designations should be in the UGB expansion area in direct relation to the city's projected housing needs, and consider the adoption of new residential plan districts that encourage more multi-family, higher density single family housing, and other needed housing types for a greater proportion of the expansion area, in order to meet the city's and the region's demonstrated housing needs;
2.4 (Analysis) Page 35-	23. The City must (under Goal 10 and the needed housing statutes) plan for an adequate supply of buildable land for affordable housing, including workforce housing (whether that land is inside the prior UGB, on lands in a UGB expansion area, or both). 24. On remand, the City also must explain why it believes particular areas planned to meet the future housing needs of residents are appropriate for the expected housing types.
2.4 (Conclusions) Page 35	25. The City must plan lands within its existing UGB and any expansion area so that there are sufficient buildable lands in each plan district to meet the city's anticipated needs for particular needed housing types. 26. To the extent that the City continues to determine that there is a current and projected future shortage of land for affordable housing that translates into a need for more multi-family housing, the City must show how it's planning for lands within the exiting UGB and lands in any expansion area will provide sufficient buildable lands in plan districts that are designed to meet that need. 27. If the City continues to project a future housing mix of 65% single-family and 35% multi-family, it must explain why that housing mix will provide sufficient buildable lands to meet its projected future housing needs over the planning period, and that projection and explanation must be supported by an adequate factual base.
2.8 (Analysis) Page 47	28. The City agreed to adopt findings clarifying why its decision is consistent, and the Commission concurs that this issue can be resolved by the adoption of findings explaining why the city's decision is consistent with its plan policies.
2.8 (Conclusion) Page 47	29. The Commission denies the city's appeal for the reasons stated above, but also clarifies that its remand is solely for the lack of adequate findings by the City.
HNA and Efficiency Measures	
3.1 (Analysis) Pages 50-53	30. LCDC concluded that the City's densities for housing were, in their view, low 31. Need to determine if raising the minimum densities of the residential zones is necessary to encourage the development of needed housing 32. On remand, the City must address both prior trends (as required by ORS 197.296(5)) and recent existing steps it already has taken to increase density and meet its housing needs. The requirement of Goal 14 to reasonably accommodate future land needs within its UGB does not allow the city to use an unreasonably conservative projection of future development capacity 33. Nevertheless, given the apparent market demand for increasing density

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	relative to existing planning and zoning designations, the City must explain why increasing the density allowed, particularly for large blocks of vacant land outside of existing established neighborhoods, is not reasonable during the 20-year planning period. 34. The Director's Decision identifies a number of other efficiency measures that the City should consider (drawn from the city's own Residential Lands Study), but that list is not intended to be exclusive or directive; it is up to the City to determine in the first instance what is reasonable to accommodate its future housing needs within its UGB (See Director's Decision 45-46)
3.1 (Conclusion) Pages 53-54	35. The City must reconsider the projected capacity of lands within its prior UGB for residential development during the planning period in light of its revised BLI, recent development trends, and existing and potential new measures to increase that capacity. 36. The measures the City considers must include, but are not limited to, evaluating the infill capacity (including plan and zone changes) of residential lands with more than five acres that are vacant or partially vacant. 37. The City also should consider the measures as listed in the Director's Decision, at 45-46, that are related to efficiency measures.
3.1 (Director's Report)	38. Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers; 39. Consider splitting the existing RS zone, which covers most of the residential areas of the city, into two or more zones in order to encourage redevelopment in some areas while protecting development patterns in well-established neighborhoods; 40. In areas where the city is planning significant public investments, consider upzoning as a means to help spread the costs of such investments; 41. Consider strengthening the minimum density provisions in the existing UAR and SR 2½ zones by eliminating PUDs and other clustering tools; and 42. Consider strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types, rather than relying on low density residential development.
3.2 (Analysis) Pages 55-56	43. Under Goal 10 and ORS 197.296 the City must adopt definitive measures and find, based on an adequate factual base, that those measures demonstrably increase the likelihood that residential development will occur at the housing types and density and at the mix of housing types required to meet housing needs over the next 20 years. 44. The City agreed, on remand, to include provisions in the General Plan requiring adoption and implementation of the Central Area Plan and rezoning of lands along transit corridor as described in its findings.
3.2 (Conclusion) Page 56	45. …directs the City on remand to address the requirements of ORS 197.296(7) and (9) with respect to any new efficiency measures that it relies on. 46. The City may do this by adopting specific timelines for initiation and completion of efficiency measures, including detail about the outcomes that will be achieved as part of the Housing Element of its comprehensive plan. 47. The City also must adopt findings that show why those outcomes are more likely to occur as a result of the measure(s), and how they relate to needed

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	housing types and locations. 48. In addition, in coordination with its Work Plan for Outstanding Metropolitan Transportation Planning Work (issue area 8), if the City continues to rely on these two particular measures, it must: 49. Within two years following acknowledgement, complete and adopt the Central Area Plan. The Plan must include provisions that plan for at least 500 additional medium-density and high-density housing units over the planning period. 50. Within two years following acknowledgement, complete and adopt provisions of its comprehensive plan that authorize at least 600 additional medium-density and high-density housing units on lands abutting or within ¼ mile of existing or planned transit routes.
Other Land Needs	
4.1 (Analysis) Page 58	51. Absent the safe-harbor, the City must demonstrate that the identified need for institutional, private open space and private rights-of-way is an urban need that must be accommodated within the expansion area. 52. …the City's findings must explain why the City believes that the increase from 12.8 percent to fifteen percent is justified
4.1 (Conclusion) Page 59	53. (a)dopt findings that explain why an increase in the amount of land required for these uses from 12.8 percent to fifteen percent is justified. To the extent the City is basing its estimate on the need for stormwater facilities, it should explain why such facilities can't be located within open space and right-of way areas. 54. …the city's findings should not be based only on past trends, but should include consideration of future conditions and needs (and explain why the trend will continue or change over the future planning period).
Park & School Land Needs	
4.2 (Analysis) Pages 60-61	55. The City's findings need to be revised to explain clearly what evidence the city relied on for types of projected school and parks needs and siting criteria and the relation to the districts plans. 56. In addition, to satisfy the requirements of ORS 197.296(6)(a), the city's findings should explain how the City has coordinated with the Bend-La Pine School District.
4.2 (Conclusion) Page 61	57. Adopt revised findings explaining what evidence it relied on in determining the amount of land needed for parks and schools, and how that evidence relates to the districts plans and analyses.
4.3 (Analysis) Page 63	58. Given that much of the city's future housing and population growth is projected within its prior UGB, the city's findings should explain how it will meet its future needs for these uses.
4.3 (Conclusion) Page 63	59. The Commission concludes that the City must make findings to address OAR 660-024-0050(4), regarding the extent to which the estimated need for future parks and schools can reasonably be accommodated inside the existing UGB. 60. The required findings must address how the needs analysis accounts for

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	lands already owned by the districts that are outside of the prior UGB, particularly if those lands were determined to not be suitable for urbanization.
Economic Opportunities Analysis – Goal 9	
5.1 (Conclusion) Page 67	61. The submittal is remanded for the City to clarify in adequate findings that it is utilizing its 2008 EOA, scenario B, as the basis for estimating employment land needs
5.2 (Conclusion) Page 70	62. Commission remands the UGB decision to the City to provide an adequate factual base to support use of a 10 percent redevelopment factor, including an analysis of the amount of redevelopment that has occurred in the past and a reasoned extension of that analysis over the planning period 63. Alternatively, the City may satisfy Goal 9 and division 9 by other means, for example through a site-by-site redevelopment analysis. However, a site-by-site analysis is not required; the Commission determines that using a factor is acceptable where findings explain evidentiary basis and address the Goal 14 requirement to reasonably accommodate development within the existing UGB.
5.4 (Analysis) Page 76	64. As a result, in this case (See 1000 Friends of Oregon v. LCDC, __ Or App __, __P3d __ (A135375)) to the extent that the city continues to base some portion of its employment land need on market choice, it must explain how doing so in the factual context provided by the record for the Bend UGB expansion is consistent with the requirements of Goal 9, OAR 660-009-0025, and the "need" factors of Goal 14
5.4 (Conclusion) Pages 76-77	65. On remand, the City must make findings addressing applicable law, including addressing consistency with Goals 9 and 14 as required in *1000 Friends of Oregon v. LCDC,* __ Or App __, __P3d __ (A135375) (September 8, 2010)
5.5 (Analysis) Page 77	66. Under OAR 660-009-0015(3)(a)(C), the EOA Inventory of Industrial and Other Employment Lands for cities and counties within a Metropolitan Planning Organization, must include the approximate total acreage and percentage of sites within each plan or zoning district that comprise the short-term supply of land. 67. This short-term supply analysis required for jurisdictions within MPOs is in addition to the EOA inventory requirements applicable to all comprehensive plans for areas within urban growth boundaries. OAR 660-009-0015(3)(a) 68. Furthermore, division 9 requires that comprehensive plans for cities such as Bend "include detailed strategies for preparing the total land supply for development and for replacing the short-term supply of land as it is developed." OAR 660-009-0020(2).
5.5 (Conclusion) Page 78	69. The Commission concludes that the Goal 9 rule requires the City to include policies for maintaining a short-term supply. 70. The City must plan for required infrastructure and have identified the funding mechanisms.
5.6 (Analysis)	71. (t)he City must establish a basis in reason connecting the inference that the planning period will present higher vacancy rates for industrial and office than historic and current conditions to the trend data from which it is

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Page 80	derived. 72. The City may pursue a mechanism to make industrial and commercial rents affordable under the competitive short-term supply, but not by inflating the long-term need beyond what may be supported by substantial evidence in trend data or reasoned inferences there from.
5.6 (Conclusion) Page 80	73. The Commission concluded that under division 9, the long-term vacancy factor should be based on past and projected future trends over the planning period.
5.8 (Analysis) Page 84	74. The City agreed that on remand it would move the analysis and calculation to the residential/other lands analysis and calculation.
5.8 (Conclusion) Page 84	75. The Commission remands the submittal to incorporate analysis of land needs for employment uses within residential zones in the City's housing needs analysis.
5.9 (Analysis) Page 85	76. The City designated a substantial amount of land as Commercial General along Highway 20 in the expansion area. The City concedes that it did not make findings related to the General Plan policies cited by appellant, but agrees to develop findings addressing the policies on remand.
5.9 (Conclusion) Page 85	77. The Commission remands the submittal to the City to allow it to address Commercial Development Policy 27 and 28 contained in Chapter 6 of the Bend Area Plan
Natural Resources – Goal 5	
6.1 (Analysis) Pages 90-91	78. The rule requires the city to evaluate the expansion area where resources are identified and evaluate them for significance and possible protection. 79. The city may use the county's inventory as a starting point, but it must also evaluate other information and make its own determination of significance.
6.1 (Conclusion) Page 91	80. State scenic waterway – Should a revised UGB expansion area include any areas within the Middle Deschutes River Scenic Waterway as described in OAR 736-040-0072, the city must adopt local requirements to implement the state plan for protecting the Middle Deschutes Scenic Waterway, including a setback from the canyon rim for structures. 81. Riparian protection – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must prepare and adopt an inventory of the significant riparian area that either: 1) finds that the topography along the river does not restrict the use of the safe harbor inventory under OAR 660-023-0090(5)(d) and apply the 75 feet upland from top of each bank safe harbor width provided in OAR 660-023-0090(5)(a); or 2) apply the standard inventory methodology, used within the current UGB, to the expansion area. In either case, the significant riparian area will fall within the canyon walls. For a protection program the city will adopt the county measures that serve to protect the scenic waterway and add restrictions for vegetation removal within the significant riparian area. The

	City must develop the protection program to meet the safe harbor protection measure standards. 82. Wildlife habitat – Should a revised UGB expansion area include areas along the Deschutes River, Tumalo Creek, or both, the city must apply OAR 660-023-0110, the Goal 5 wildlife habitat rule, by conducting a safe harbor inventory under OAR 660-023-0110(4). The rule allows the city to limit consideration of significant habitat to the five habitat categories specified in subsections (a)-(e). The Commission understands that the City anticipates that ODFW will provide the City a letter stating that the agency does not have information that any of the five habitat categories are documented, identified or mapped within the portion of the Deschutes River or Tumalo Creek corridors that pass through the expansion area. 83. Tumalo Creek – Should a revised UGB expansion area include Tumalo Creek in the final expansion area, the city must apply the Goal 5 safe harbor inventory and protection measures for riparian areas along the creek. 84. ..the Commission concludes that the City may not exclude identified ASIs from its BLI (if they are already inside the prior UGB), or excluded ASIs from inclusion in the expansion area.
6.3 (Conclusion) Page 95	85. On remand, if the City includes the property in the revised UGB expansion area, the City should only plan for surface mining that portion of the property within the DOGAMI permit 09-0018 area, as the site is not on the county's acknowledged surface mining inventory.
Wildlife Risk – Goal 7	
6.2 (Conclusion) Page 93	86. It is entirely appropriate and permissible for the City to consider relative risk of wildfire in alternate UGB expansion candidate areas in considering the environmental, energy, economic and social consequences of the alternatives under locational factor 3 of Goal 14.
Public Facilities – Goal 11	
7.1 (Conclusion) Page 101	87. The City may adopt public facilities plans as needed for acknowledged land uses within its prior, acknowledged UGB on remand. 88. The city may then, subsequently, adopt revisions to its public facilities plans for any revised UGB expansion proposal and any other related amendments to its acknowledged comprehensive plan.
7.7 (Conclusion) Page 110	89. On remand, the City must address the entire expansion area under Goal 11 and Goal 14, locational factor 2. The City is not required to do so through amendments to its public facilities plan, although it may do so. 90. If the City elects to carry out the analysis(es) of the feasibility of serving the expansion area independently of its public facilities plan, it should nevertheless formally adopt the analysis and incorporate it into the city's comprehensive plan (and the analysis must not conflict with existing provisions of the public facilities plan).
Transportation – Goal 12	
8.1 (Analysis)	91. The city is required to compare lands in the same priority classes under ORS 197.298, Goal 14 and OAR 660-024-0060 (except when lower priority lands

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Pages 114-115	are included as necessary to serve higher priority lands under ORS 197.298(3)(b)). 92. The city may aggregate its underlying data, by TAZs and priority category, and address the results in revised findings
8.1 (Conclusion) Page 115	93. On remand, the city must analyze the relative costs of lands in the same priority category, rather than aggregating its analysis into subareas without regard to the priorities under ORS 197.298.
8.1 (Director's Report) Page 89	94. Identify and assign costs of individual UGB expansion areas, rather than combinations of different areas; 95. Provide additional information regarding the costs of providing transportation facilities to serve individual areas, including any extraordinary costs related to overcoming topographic barriers or rights of way; 96. Provide more detailed analysis of the extent to which the costs of improvements for major roadway improvements in north area (including proposed improvements to Highways 20 and 97) are a result of and should be assigned to development in the north area rather than the city as a whole. (That is, the city's analysis and evaluation should assess whether the extent of improvements in north area might be avoided or reduced in scale or cost if the UGB was not expanded in this area, or if the extent of the UGB expansion was reduced.); and 97. Provide comparable estimates for providing needed roadway capacity for areas that, because of topographic constraints, may need to be served by different types of road networks. For example, growth on the east side can apparently be served by a fairly complete grid of streets, while topographic barriers limit potential for a full street grid in this area.
8.2 (Conclusion) Page 116	98. On remand, the city must revise its findings to address this issue. If the city chooses to rely on existing analysis that there is no cost differential between alternate lands in the same priority category, that decision must be supported by substantial evidence in the record as a whole. 99. While no specific method or outcome is required, the city must explain its basis(es) for assigning the costs of extraordinary improvements to expansion areas in the same priority category, and consider whether changes in the extent or location of the UGB expansion would reduce the need for major improvements in this area.
8.3 (Conclusion) Pages 117-118	100. On remand, the city must revise its findings to address this issue including not only the relative cost of required transportation improvements, but the relative advantages and disadvantages as well. OAR 660-024-0060(8) (which may include the relative amount of development capacity the city can support for a particular unit of cost). 101. On appeal, at oral argument, the city agreed to strengthen its findings in this area to the extent that lands on the west of the city are included in the UGB expansion area on remand.
8.6 (Conclusion) Pages 120-	102. The City is required to comply with OAR 660-012-0035 before it may complete its UGB expansion. 103. The City has agreed to prepare analyses of its baseline VMT per capita in 2003 (with VMT as defined in OAR 660-012-0005), along with an analysis of

121	projected VMT per capita over the planning period with proposed "packages" of land use and transportation measures to reduce VMT per capita. 104. If the City demonstrates that its revised UGB expansion, along with proposed land use and transportation measures, results in an estimated change in VMT per capita: a. of a decline of 5% or more per capita, then the City is in compliance with this aspect of the TPR under 0035(6); b. of a decline of between 0% and 4.99 percent per capita, then the City may proceed by preparing for DLCD/LCDC review and approval concurrently with the revised UGB, a work program/plan to achieve a reduction of 5% or more over the planning period; or c. of an increase in VMT per capita, then the city must prepare, submit and obtain DLCD/LCDC approval of an integrated land use and transportation plan as provided in OAR 660-012-0035(5) prior to approval of a revised UGB.
UGB Methodology & Boundary Analysis (Goal 14)	
9.1 (Conclusion) Pages 129-130	In evaluating which lands to include within its UGB expansion on remand, the City must follow the following steps: 105. Establish suitability criteria for general housing, employment, and related land needs. These criteria must be consistent with (in the sense of implementing, or being in harmony with) the definitions in OAR 660-008-0005(2) (for lands planned for future general residential uses), and 660-009-0005(9) and (12) and 660-009-0025(1) and (2) (for lands planned for future general employment uses) as well as other provisions of law applicable in determining whether the land will meet the city's general land needs. 106. Document the criteria used to locate lands required to meet any "specific identified needs" as allowed by ORS 197.298(3)(a). The identified land needs include a future university site, a medical center, and two large-lot industrial uses. 107. Document (through existing or supplemental findings) that the sites identified by the City for a university, a medical center, and two large-lot industrial uses. The Commission agrees with the City that these identified future uses are justified under 197.298(3)(a). The City must demonstrate, however, through additional findings, that these future uses cannot reasonably be accommodated within the prior UGB. 108. Apply the suitability criteria (from step 1, above) for general housing, employment and related land needs to exception lands within the expansion study area. In this step, the City must identify exception lands (including lands designated by the City as urban area reserve) that will not accommodate any of its general land needs during the planning period. These lands may be "screened out" from further analysis. 109. For its remaining (general) future land needs over the planning period, the City must compare the remaining (after the screening described above for suitability) exception lands using the Goal 14 locational factors to determine which of those lands are best to include in its UGB expansion area.42 In this step, the City may rely on ORS 197.298(3)(c) (maximum efficiency of land uses *** requires inclusion of [resource lands] *** to include or to provide services to [the exception lands]") to include resource lands, particularly

	resource lands interspersed with exception lands, within its UGB expansion area. Resource lands included under ORS 197.298(3)(c) need not be evaluated for soil capability, as called for under ORS 197.298(2). 110. If the City is unable to accommodate its need for additional lands during the planning period after undertaking the preceding steps, it may then evaluate lands in the next priority category under ORS 197.298(1) (e.g., resource lands) for its general land needs. If theh City does so, it must consider resource lands with lower soil capability first, as specified in ORS 197.298(2). To the extent that resource lands are needed to meet remaining (general) future land needs over the planning period, the City must apply the general suitability criteria used in Step 1 (above) and then compare suitable resource lands using the Goal 14 location factors to determine which of those lands are the best to include in its UGB expansion area.
9.2 (Analysis) Page 131	111. The remaining work for the City on remand is simply to show, using those criteria, that the uses "cannot reasonably be accommodated" within the prior UGB.
9.2 (Conclusion) Pages 131-132	112. The City must, however, analyze whether these needs could reasonably be accommodated within the prior UGB using its site suitability criteria and buildable lands inventory, and adopt findings explaining its reasoning.
9.3 (Analysis) Page 132	113. The City will need to work through the particular application of ORS 197.298(3)(c) to the facts on remand, and that application may depend, in part, on what the City does with its public facilities plans.
9.3 (Conclusion) Page 133	114. ORS 197.298(3)(c) may be used, as described above under issue 9.1., where resource lands are interspersed with exception lands, and in order to urbanize (provide public services to) exception lands that couldn't otherwise be served.
Implementation – Plan & Zoning Designations	
10.2 (Conclusion) Pages 141-142	On remand, the city and county must: 115. Clearly designate on the appropriate comprehensive plan map, the areas planned for the specific identified land needs described in the city's analysis under 197.298(3)(a), and include policies to assure that the lands are, in fact, used for their intended purpose; 116. Either maintain the former county zoning districts until areas added to the UGB are ready to urbanize, or specifically determine that interim zoning designations maintain the likelihood that the land will develop for the uses and at the intensity that the city's underlying analysis of the capacity of the lands is based on; 117. If the County or City adopt interim zoning for the UGB expansion area, they must determine that the assigned interim zoning in each area will not generate more vehicle trips than development allowed by the zoning designations in place before the UGB expansion; and 118. The City and County must coordinate, and clarify the applicability of the city's plan map and plan policies, including its Framework Plan map, within the

	UGB expansion area.

Memorandum

January 21, 2014

To: Residential and Employment Technical Advisory Committees

Cc: Project Team

From: Angelo Planning Group Team

Re: Draft Analysis of Current Urban Growth Boundary – Base Case and Scenarios

INTRODUCTION

This memorandum describes the initial results of the Envision Tomorrow analysis of the Bend UGB Base Case and two additional growth scenarios and packages of efficiency measures. These scenarios were created through the residential and employment Technical Advisory Committee (TAC) recommendations and input from the December 15, 2014 Workshop. Descriptions of the analysis and preliminary results are provided in this memo, followed by a set of illustrative maps and other detailed information included in Appendices.

This memorandum focuses on results from the Envision analysis. The "Analysis and Interpretation" section discusses the implications of these results and evaluates them with regard to project goals, capacity estimates, and other measures.

Important note: The scenarios described in this memorandum are not final proposals or recommendations. These initial results from Envision Tomorrow should not be interpreted as choices to pick from; rather, they present information about how various scenarios and assumptions combine. TAC discussions are expected to result in hybrid scenarios for further discussion and recommendation to the UGB Steering Committee. It is also worth noting that refinements required to implement some of the scenarios related to transit and bike/pedestrian systems will need to be addressed later in the process since it is impractical to provide such detailed planning at this early stage.

Purpose and Goals of the Analysis

The purpose of the analysis is to:

- **Estimate capacity of existing UGB** to accommodate housing and employment growth under current policies, plan designations, and trends, and given various options and combinations of "efficiency measures" to encourage more growth within the current UGB.
- **Evaluate the impacts** of the base case and efficiency measure scenarios against the project goals and remand requirements.

- **Provide the basis for estimating residual housing and employment which will lead to land need** for expansion of the UGB. As noted previously, the team expects this will be a range of land need based on application of different types or combinations of efficiency measures.

In addition to these primary purposes, the City has a number of important goals in conducting the analysis and ultimately determining which types of efficiency measures to implement, including:

- Use certain non-residential areas and large blocks of vacant land to achieve desired urban form outcomes
- Meet Remand requirements
- Ensure that new development uses remaining available land within the UGB efficiently
- Refine requirements for multi-family and single family attached housing to help those housing types get built and achieve the needed future housing mix for the City
- Remove regulatory barriers to desired employment land (re)development
- Achieve the community goals and vision identified at the outset of the planning process (Project goals are provided in Appendix A)

The work being performed to meet the above goals is on-going. Each of the above-listed goals are being addressed the project's Phase 1 evaluation of the current UGB. That work will be refined as the UGB expansion work is conducted in Phase 2.

Overview of Approach

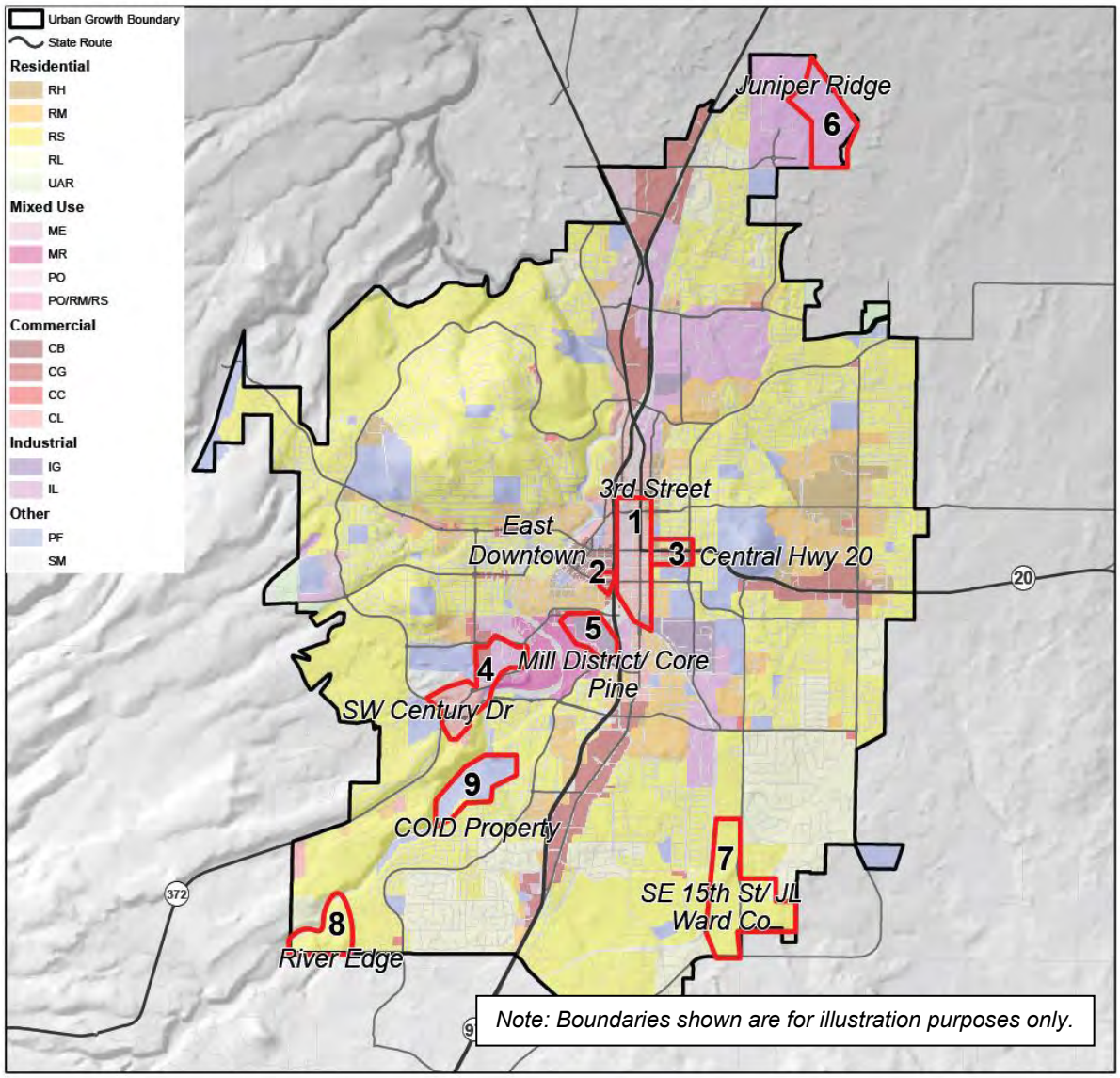
The project team has used the Envision Tomorrow scenario model to evaluate three different growth scenarios:

- **Scenario 1 – "Base Case":** This development scenario incorporates an updated 2014 Buildable Lands Inventory (BLI), including a variety of assumptions about infill and redevelopment which have been calibrated to recent trends consistent with the City's updated Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA)
- **Scenario 2 – "Intensify":** A refined version of the base case which incorporates options for location-specific changes (changes to current plan designations for specific parcels, districts, or other areas) recommended by the project's residential and employment Technical Advisory Committees. In general, Scenario 2 intensifies development in nine different opportunity areas where there is more capacity for future development in the form of vacant land or land with infill and redevelopment potential.
- **Scenario 3 – "Intensify and Mix":** This scenario is based largely on results of a joint workshop with members of the residential and employment Technical Advisory Committees and UGB Steering Committee conducted on December 15, 2014. At this workshop, the committees formed six groups, each of which was tasked with reviewing TAC recommendations of opportunity areas and either affirming or proposing alternative development options. There was significant agreement among the small groups regarding affirmation of or changes to TAC recommendations in individual areas. The

project team used this guidance to develop Scenario 3. In general, this scenario represents both intensification from Scenario 2 and further mixing of different types of land uses within the opportunity areas.

The nine opportunity areas referenced above are shown on Figure 1. The differences between the scenarios in each opportunity area are discussed in detail in the "Results" section of this memorandum.

Figure 1. Opportunity Areas



In evaluating the three scenarios, the project team also applied a set of development code-based, broadly-applicable efficiency measures. These measures affect land throughout the City that is projected to undergo development or redevelopment during the planning horizon. Three different sets of measures were tested:

- **Package A – Current Code:** No additional code efficiency measures
- **Package B – Revised Code:** Market-oriented development code efficiency measures
- **Package C – Revised Code & Additional Efficiency Measures:** Market-oriented & additional development code efficiency measures

The efficiency measures included in these packages are described in an earlier memorandum.[1] They are discussed further in the "About the Scenarios" section of this memorandum. Details about how these efficiency measures were operationalized in the Envision Tomorrow model are provided in Appendix D.

The project team has used a "Matrix" approach to test combinations of development scenarios and efficiency measures. Table 1 below shows the nine total scenarios analyzed.

Table 1. Development Scenarios and Efficiency Measures Matrix

	Package A Current Code	**Package B** Revised Code	**Package C** Revised Code & Additional Efficiency Measures
Scenario 1 – Base Case No location-specific changes	Scenario 1A	Scenario 1B	Scenario 1C
Scenario 2 - Intensify Location-specific changes largely inspired by TAC recommendations ("intensify")	Scenario 2A	Scenario 2B	Scenario 2C
Scenario 3 – Intensify & Mix Location-specific changes largely inspired by workshop recommendations ("intensify & increase mixing")	Scenario 3A	Scenario 3B	Scenario 3C

About the Model: Envision Tomorrow in Brief

Envision Tomorrow is an open-access scenario planning package that is being employed to analyze future growth patterns and policy decisions impacting growth in Bend. The software, comprised of an ARC/GIS extension and a Microsoft Excel model, develops estimates of how these patterns and policies will impact a range of measures, including growth capacity to travel behavior.

Envision Tomorrow is a suite of planning tools that includes analysis tools and scenario design tools. The analysis tools allows for analysis of aspects of the city using GIS data, such as tax assessor parcel data, the General Plan, and Census data. The scenario painting tool was

[1] "Land Use Efficiency Measures through Development Code Changes – Updated per Residential Lands Technical Advisory Committee direction," December 9th, 2014

utilized to "paint" a series of alternative future development scenarios on the landscape within Bend's UGB, and to compare scenario outcomes for this memorandum.

Envision Tomorrow provides a sketch-level glimpse of the possible impacts of policies, development decisions and current growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, development feasibility, fiscal impacts, transportation, environmental factors, and quality of life. These results illustrate a range of possibilities at the city- and neighborhood scale. The model should not be interpreted as a site-specific prediction of how development will occur over the planning period.

Please see Appendices C through E for additional detail about the model and information about how it is being applied to the UGB scenario evaluation process in Bend.

Building the Scenarios

Buildable Lands Inventory

State requirements dictate that the starting point for determining the capacity for future development within the UGB is an inventory of "buildable" land[2]. In Bend, this inventory is captured the City's Buildable Land Inventory report and database. Buildable land is defined as land that can physically accommodate more development based on the size, zoning, natural resource constraints, and other physical constraints of a given parcel of land. The City does not assume that all land in the inventory is currently available for development or will develop in the future, only that it has the capacity to do so. As of the publish date of this memo, the updated Bend BLI is in process – it will be distributed to the Technical Advisory Committee at a future date. All BLI-related information in this memo is preliminary and subject to change based on TAC input.

This section of the memorandum summarizes the approach to defining and identifying different types of buildable land. More detailed information on this topic will be provided in a separate Buildable Lands Inventory Report.

Development Constraints

The following constraints were identified and counted as unbuildable, consistent with state statute & rule and DLCD / LCDC guidance:

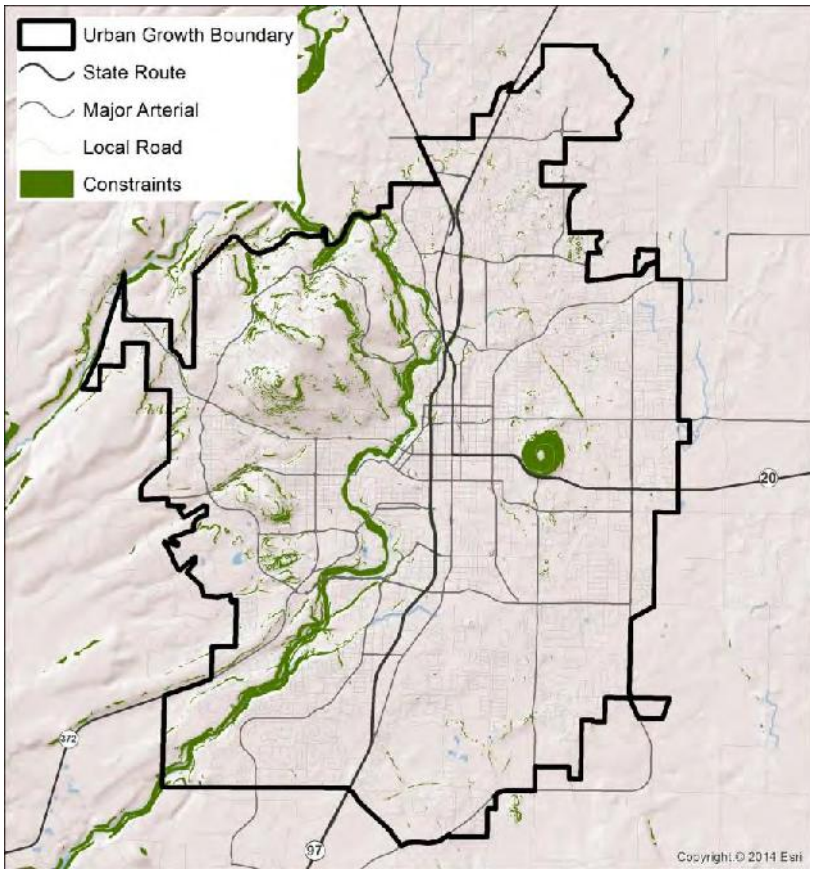
- Floodplains
- Slopes over 25%

Note: Bend's Areas of Special Interest (ASIs) are not allowed to be excluded as unbuildable as they are not acknowledged Goal 5 resources.

Figure 2 shows constrained lands in and around the City of Bend used in the BLI.

[2] OAR 660-008-0005

Figure 2. Constrained Lands



BLI Categories

BLI status categories were assigned to Bend parcels, consistent with state statutes and guidance from the Oregon Department of Land Conservation and Development. The categories are as follows:

Residential land (as required by the Remand Order):

- Developed – Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the zone, and for which the size of the lot does not allow for further division. Residentially zoned land that is currently developed with employment uses is also categorized as Developed.
- Lots Large Enough to Accommodate an Additional Unit under Current Zoning ("Partially Vacant") – Land planned or zoned for residential use that has an improvement value greater than $0, but contains fewer dwelling units than permitted in the zone, and the lot is not large enough to further divide.
- Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential") – Land planned or zoned for residential use that is currently developed, but where the lot is large enough to further divide consistent with its current zoning, based on the minimum lot size of the applicable zone. As with Partially Vacant land, this category does not consider limiting factors such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot.

- Vacant (Completely) – Land planned or zoned for residential use that has an improvement value of $0. Properties that are planned or zoned for residential use, but are dedicated for other uses such as parks, common areas, rights of way or utilities are excluded. Publicly owned land is also excluded.
- Publicly Owned - land in public ownership is assumed to be unavailable for residential use, except where the public ownership has indicated to the City that the land is available for future development.

Note: Only a portion of the land that is classified as "partially vacant" or "developed with infill potential" is assumed to experience infill during the planning horizon, varying by scenario. These areas do not represent geographically-specific proposals or assumptions for future growth, nor do they include any assumptions on market conditions and the extent to which they would motivate a property owner to develop land during the planning period. The development potential for such lands is not taken on a site by site basis; rather, trends analysis already presented to and approved by the TAC is what determines the capacity of these lands for further development.

Employment land (based on definitions in OAR 660 Division 9, and approved by LCDC):

- Vacant - a lot or parcel equal to or larger than one half-acre not currently containing permanent buildings or improvements; or equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements.
- Developed - All other employment land is identified in the BLI map as developed, although only a subset of this will meet the state definition of "developed" land that may be part of the inventory of available employment land ("Developed Land" means non-vacant land that is likely to be redeveloped during the planning period.)

In conducting the BLI, the Residential TAC provided guidance on a variety of policy issues to resolve remaining questions concerning private open space, addressing conflicts between zoning and plan designation, and the BLI status of special districts and mixed use designations.

As noted above, the BLI is currently under review and will be discussed in detail with the Residential and Employment TACs at a later date. BLI information in this memo is preliminary and subject to change

Translating the BLI to Envision Tomorrow

The Envision Tomorrow model projects development based on the acreage of vacant and developed land utilizing assumptions about the types and rates of development/redevelopment; it is not directly linked to the BLI categories defined above. The BLI therefore needed to be translated into compatible information for each category. There is limited information available about the extent of physical development on a given parcel, and the BLI categories are not based on whether there is a realistic ability to add units on a given property given how it is currently developed. Following is a brief description of how lands were considered for the scenario modeling.

Residential land:

Vacant – all unconstrained land considered vacant is utilized by the Envision Tomorrow model.

Lots Large Enough to Accommodate an Additional Unit under Current Zoning ("Partially Vacant") and Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential") – These lands were considered to be developed if the usable portion (estimated through analysis of lot size requirements, existing unit types, and building footprints) was less than one-half acre in size.

Publicly owned land:

These areas were generally considered constrained since they are considered unavailable for residential development or redevelopment. If the public owner has indicated to the City that the land is available for development, it has been classified that way.

Employment land:

All unconstrained land was considered vacant per the state's definitions except where the extent of physical development showed otherwise (estimated based on aerial photography for parcels over five acres with some improvements).

Development Types

Development types act as the "paint" with which scenario maps are "colored". They contain assumptions about various aspects of development, calibrated by the project team with the best available information. Development type assumptions include:

- A mix of specific building types (prepared using the TAC input received in the August, 2014 meetings of the TACs)
- Parking requirements
- Streets and other set-asides
- Net residential density and net job density

Two sets of development types were created for the scenario analysis:

- **Existing Policy.** Each scenario includes some development types that generally match existing general plan categories. For residential zones, the densities and mix of product type were set to match the observed trends from 1998 to 2008 as described in the Housing Needs Analysis (HNA). Employment zones were calibrated to the observed employment mix and density detailed in the Employment Opportunities Analysis (EOA, employment building types were discussed by the Employment TAC in the August, 2014 meetings).

- **New Policies and Efficiency Measures**. The scenarios also include a second set of development types used to assess the potential capacity increases that would result

from application of efficiency measures such as smaller lot sizes, lower parking requirements, and encouraging mixed-use development. Changes to this set of development types were made by adjusting the relevant characteristics within the building library while retaining the same weighted mix of building types. Additionally, a series of new development types were added to capture types of development envisioned in the future and/or which match physical or other conditions in a given area, but for which there no existing General Plan designation.

Detailed descriptions of development types are provided in Appendix C.

ABOUT THE SCENARIOS

Location-Based Choices: Shaping Bend's Urban Form

Discussions with the TACs about future development within the City have focused on the existing and potential future "urban form" of Bend. Urban form generally defines the type and scale of development and the roads and pathways that allow people to connect to the places they live, work, shop, and play within and outside those areas. In terms of the type of development, urban form describes different types of housing and employment uses, the size or scale of buildings and lots, and the design character of new development. Urban form also describes the relative emphasis on using different types of transportation within an area – driving, walking, bicycling, or taking transit. These urban form characteristics have been described using a series of maps that show the locations and relative intensities of different types of development, including areas where there is a mix of housing, shopping, and employment uses.

Figure 3 through Figure 5 illustrate the urban form for the City as a whole for Scenarios 1, 2 and 3. Larger maps can be found in Appendix B. As described above, Scenario 1 is the "Base Case," or how the City would evolve under the current General Plan. Scenarios 2 ("Intensity") and 3 ("Intensity and Mix") are conceptual scenarios of how growth might occur. Note that across all three scenarios, the urban form in many parts of the City remains unchanged. This reflects the reality that many areas are already built out or are simply not conducive to additional growth and change.

Several of the nine Opportunity Areas show different urban form designations across the three scenarios but the differences in the designations, or estimated jobs or housing capacity, are relatively subtle. These areas include:

- Opportunity Area 2. East Downtown
- Opportunity Area 3. Central Highway 20
- Opportunity Area 5. Mill District / Core Pine Area
- Opportunity Area 8. River Edge/Thompson Properties
- Opportunity Area 9 COID Property

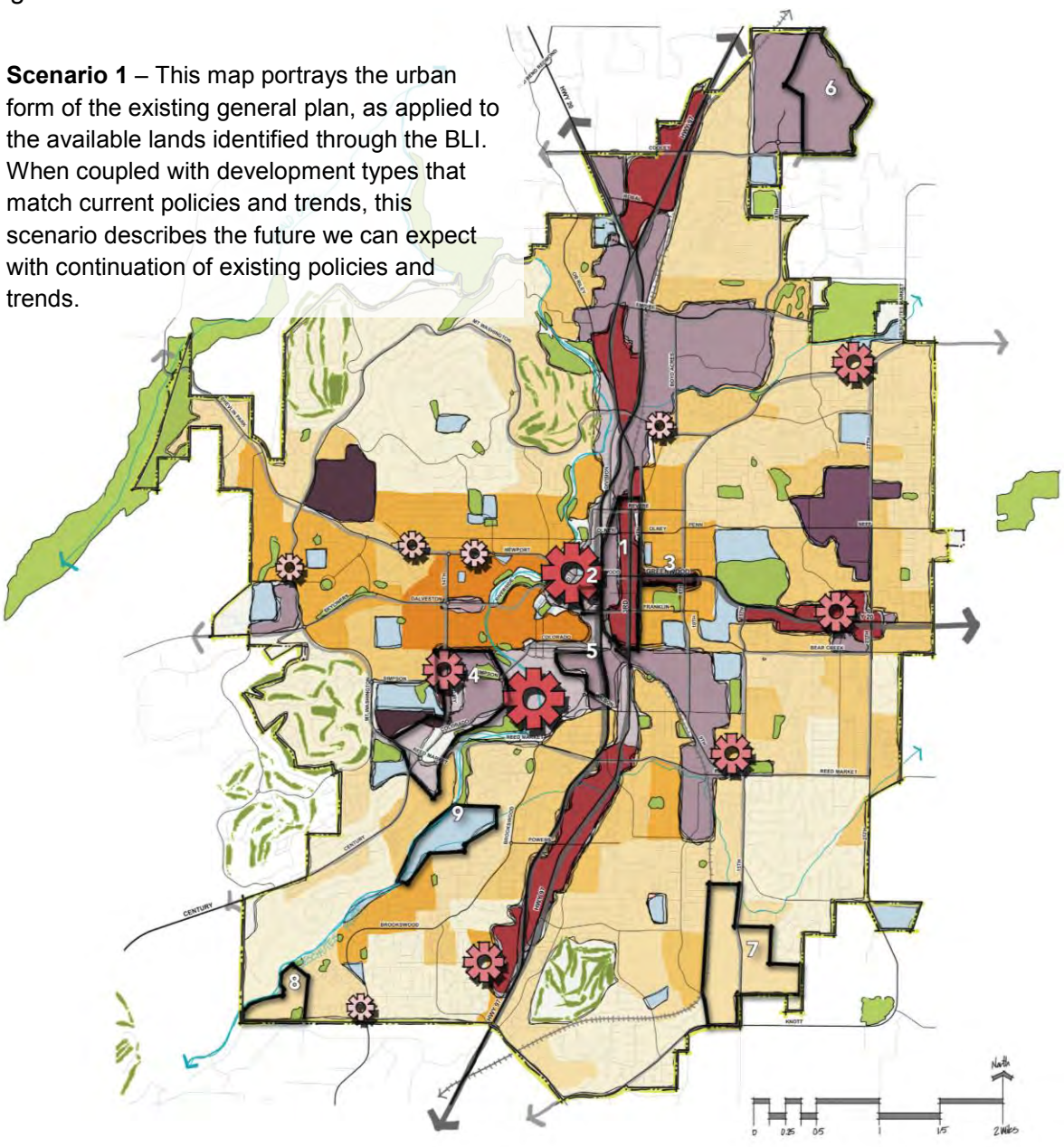
Four opportunity areas have differences with are more marked – they are:

- Opportunity Area 1 – 3rd Street
- Opportunity Area 4. SW Century Drive
- Opportunity Area 6. Juniper Ridge
- Opportunity Area 7. SE 15th / JL Ward Co Properties

Table 2 describes these differences in greater detail.

Figure 3. Scenario 1 – Base Case

Scenario 1 – This map portrays the urban form of the existing general plan, as applied to the available lands identified through the BLI. When coupled with development types that match current policies and trends, this scenario describes the future we can expect with continuation of existing policies and trends.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

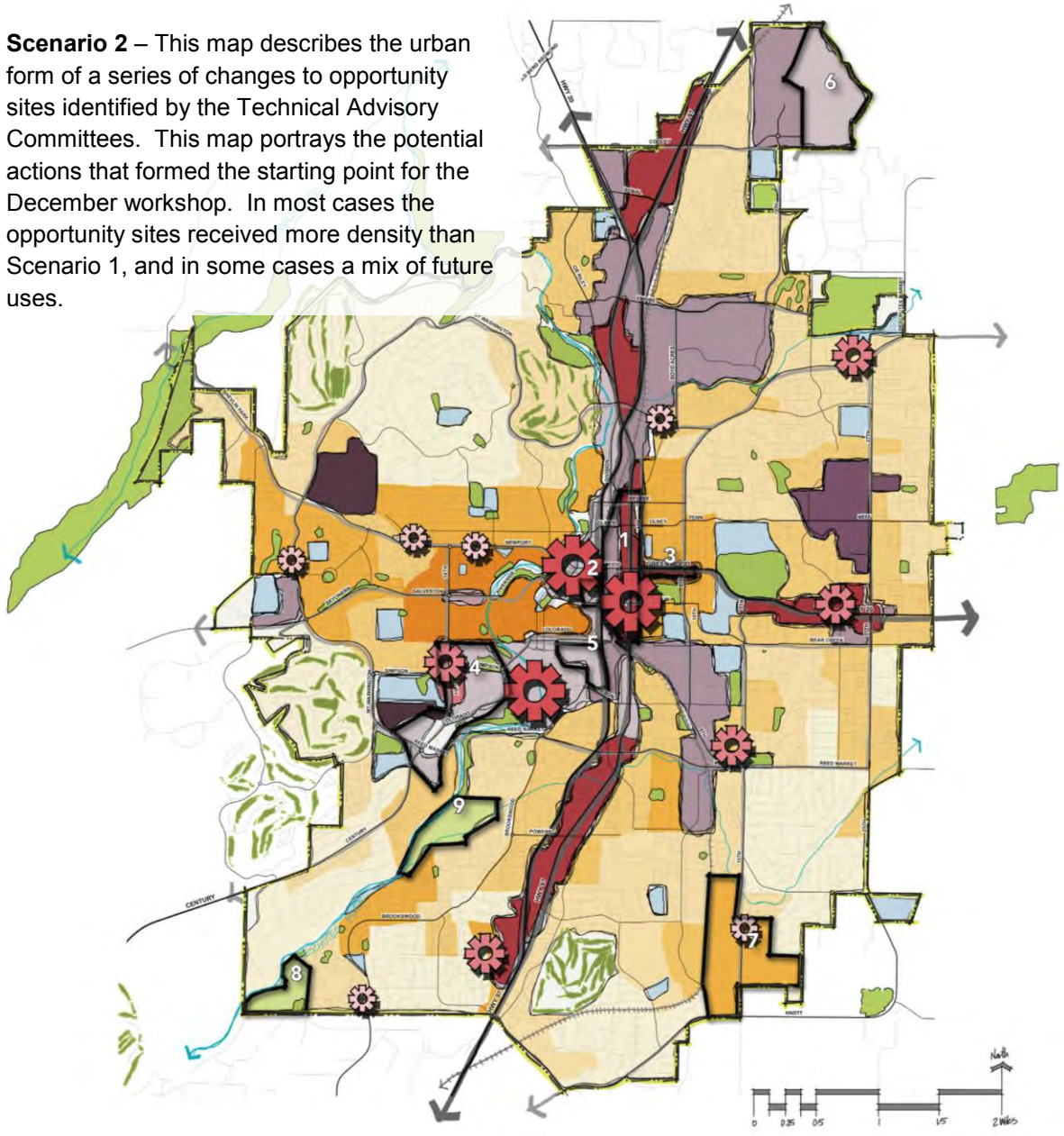
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Figure 4. Scenario 2 – "Intensify"

Scenario 2 – This map describes the urban form of a series of changes to opportunity sites identified by the Technical Advisory Committees. This map portrays the potential actions that formed the starting point for the December workshop. In most cases the opportunity sites received more density than Scenario 1, and in some cases a mix of future uses.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space Neighborhood

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

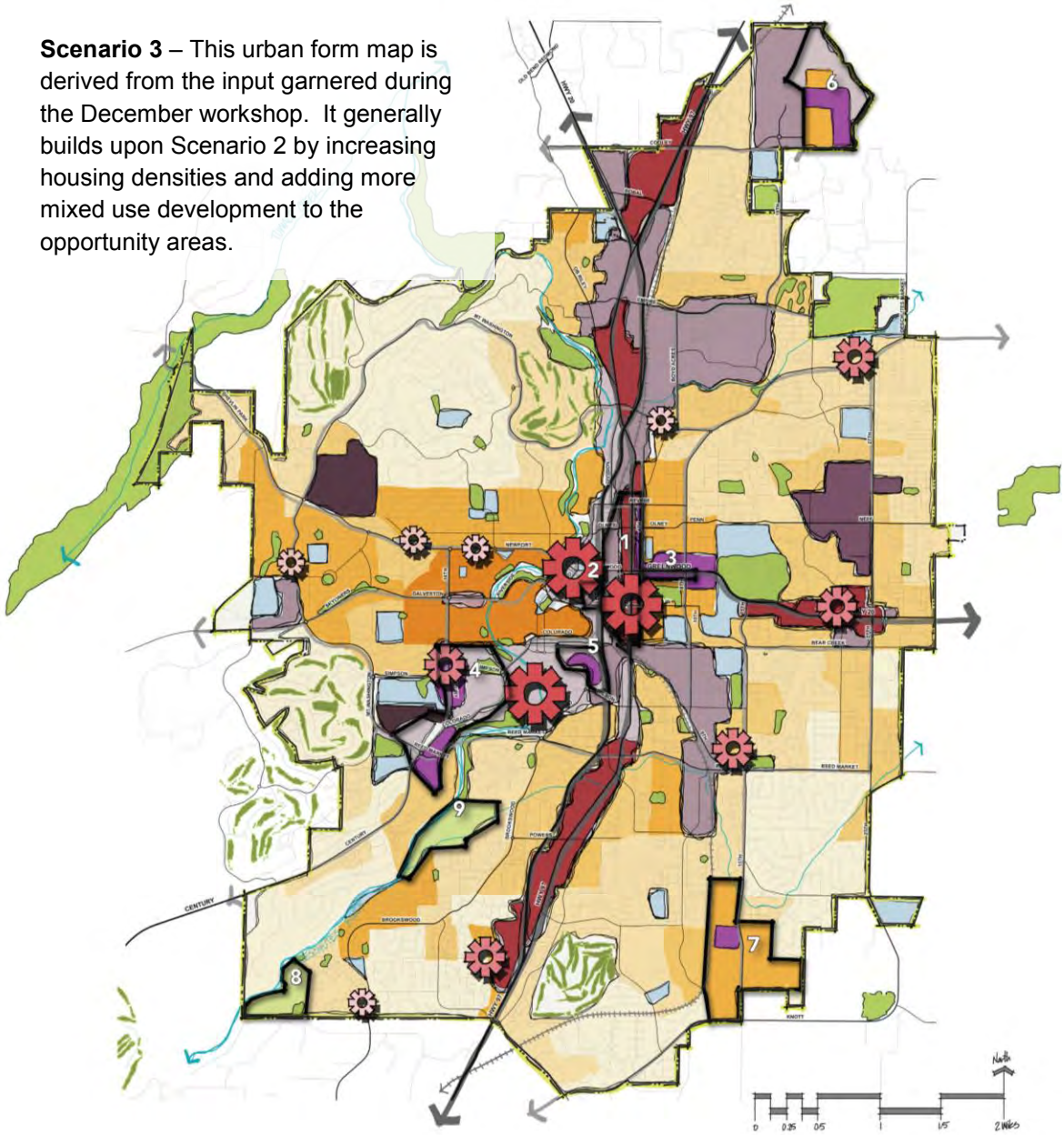
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Figure 5. Scenario 3 – "Intensify and Mix"

Scenario 3 – This urban form map is derived from the input garnered during the December workshop. It generally builds upon Scenario 2 by increasing housing densities and adding more mixed use development to the opportunity areas.



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space Neighborhood
- Neighborhood Mixed Use

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

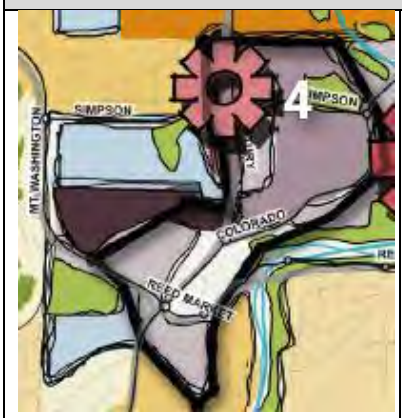
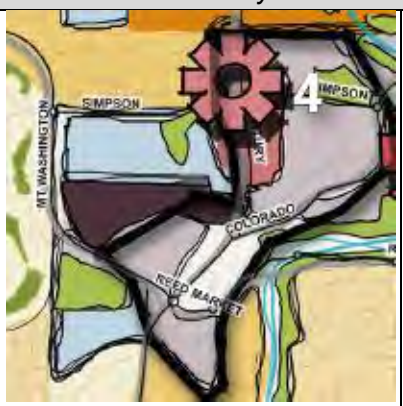
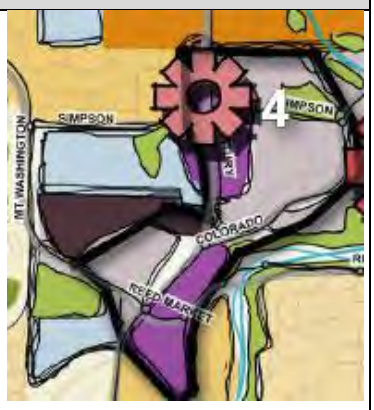
Employment Districts

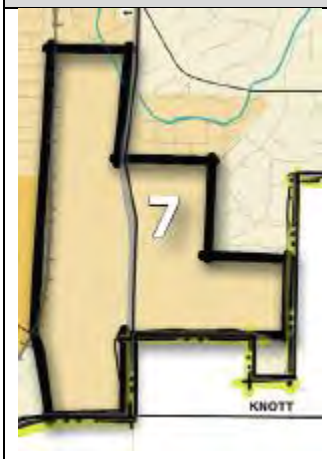
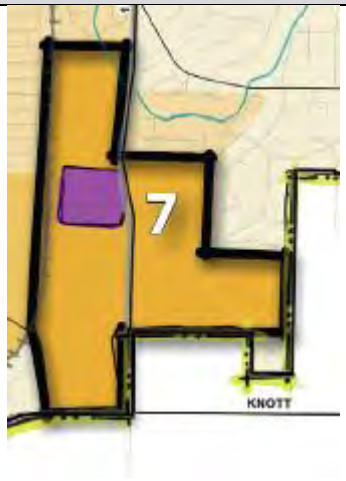
- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Table 2. Urban Form Differences between Scenarios 1, 2, and 3

Scenario 1	Scenario 2	Scenario 3
Areas 1 & 3: 3rd Street/Central Highway 20 Corridors		
3rd Street and Greenwood remain commercial corridors.	3rd Street Corridor becomes Urban Mixed Use Center	3rd Street Corridor becomes Urban Mixed Use Center, additional and housing added to US20 to the East.
Area 4: SW Century Drive		
		
No change to existing urban form	Industrial areas become Mixed Employment and commercial areas	Neighborhood mixed use and multifamily housing added to the area

Scenario 1	Scenario 2	Scenario 3
Area 6: Juniper Ridge		
Site remains Industrial	Site becomes Mixed Employment	Site becomes mix of housing and neighborhood mixed use, generally following the 2007 Juniper Ridge Master Plan.
Area 7: SE 15th / JL Ward Co Properties		
		
Site remains large-lot SF neighborhood	Site becomes traditional neighborhood with local commercial center	Site becomes traditional neighborhood with additional higher-density housing and a neighborhood mixed use node

The urban form choices described above informed the selection and painting of development types for scenario analysis by the project team. The Envision Tomorrow model was also informed by:

- Existing conditions and current land uses from the Buildable Lands Inventory and associated analysis
- The forecasted growth from the Housing Needs Analysis and the Employment Opportunities Analysis
- TAC research and recommendations regarding opportunity sites and efficiency measures
- Additional input received from the December workshop

Broadly Applicable Code-Based Efficiency Measures

In addition to the location-specific changes described above, two sets of efficiency measures have been applied to the three scenarios to test their impact on the relative efficiency of development and resulting development capacity within the City. These efficiency measures would generally be applied through changes to the City's development code and would apply to all land within one or more zoning designations. Some could be used in residential zones throughout the city to encourage development of needed housing types and/or encourage more efficient use of residential land. Others could be applied to employment zones throughout the City to enable redevelopment or make more intense new development possible. These measures were reviewed by the TAC and included the following "packages" of tools.

- **Package A** is the "base case" and contains no new efficiency measures.
- **Package B** is focused on changes that make it easier for developers to build at the higher end of the allowed density range in each zone by creating greater flexibility in development standards. This package is a market-based approach that uses provides options and incentives to achieve higher densities. Examples include:
    - reducing minimum lot sizes and setbacks for certain housing types in certain zones
    - reducing parking ratios for certain types of businesses and certain housing types so that less land must be dedicated to parking
    - expanding allowed housing types in the RS zone
- **Package C** also increases flexibility in development standards, but it includes a mix of incentives and regulatory constraints to both allow and require development to utilize land more efficiently. Examples, in addition to those identified above for Package B, include:
    - increasing minimum density standards in the RS and RM zones
    - strengthening master planning requirements for large blocks of vacant residential land
    - prohibiting new single family detached housing in the RH zone

These packages were analyzed with Envision Tomorrow through a combination of changes in development type assumptions and the creation of new "master plan" development types for

select large parcels. Changes to development types included increased minimum gross densities, changes to building mix, reduced lot sizes, reduced parking, and expanded lot coverage. A detailed log of these changes is provided in Appendix D.

RESULTS

Overview

This section describes results from the Envision Tomorrow scenario analysis. The scenarios analyzed should not be interpreted as paths to choose from; rather, the figures and tables below merely present information about how various scenarios and assumptions combine. TAC discussions are expected to result in hybrid scenarios or capacity ranges for use in later phases of the UGB process.

The City of Bend is required to consider all unconstrained vacant lands as capacity to help fulfill housing and employment need, particularly vacant sites greater than five acres. This need is detailed in the Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA). The residential and employment forecasts from the 2008 HNA and EOA were updated with recent employment and housing permit data to arrive at figures for the remaining need from 2014-2028

Envision Tomorrow can evaluate a wide variety of indicators and potential outcomes associated with the different scenarios. In this case, the primary factors considered are related to the projected capacity and mix of different types of housing and employment uses within the UGB for the three scenarios, as measured in housing units and jobs. Preliminary information about transportation impact (i.e. Vehicle Miles Traveled (VMT) per capita) associated with each scenario is also summarized.

These results are considered a draft and are subject to revisions based on City review and feedback from the TACs. In reviewing the Base Case and Buildable Lands Inventory, the TACs may identify refinements to the information and assumptions contained therein. Changes to the BLI would have corresponding changes in Envision and the draft results presented in this memo. They also could identify alternative scenarios to model for one or more opportunity areas. Those changes can be further modeled using Envision Tomorrow.

These results provide general information about the scenarios and efficiency measure packages analyzed. Later sections describe specific opportunity areas in further detail and provide guidance toward the creation of hybrid scenarios.

Housing

Comparison of the scenarios confirms that spatial changes and application of efficiency measures could increase potential capacity for future housing. Increases in residential capacity were greatest among the multi-family housing types, with only modest changes in the capacity for single-family detached homes across all the scenarios. Additionally, the potential capacity for townhomes, while still a relatively small share of the overall, saw substantial increases through the application of efficiency measures.

Table 3. Housing Capacity Estimates

	Package A			Package B			Package C		
	1A	**2A**	**3A**	**1B**	**2B**	**3B**	**1C**	**2C**	**3C**
Total New Housing Units	**9,024**	**9,898**	**11,444**	**12,043**	**13,022**	**17,286**	**13,614**	**14,735**	**19,912**
Single Family Units	6,327	6,430	5,487	6,950	7,053	7,250	7,279	7,637	7,259
Large	3,000	2,962	2,422	3,771	3,734	3,361	3,136	3,318	3,082
Std	1,857	1,865	1,531	1,618	1,631	1,606	1,446	1,335	1,258
Small	1,469	1,604	1,534	1,562	1,684	2,284	2,697	2,984	2,919
Town-homes	470	513	746	1,288	1,404	2,166	1,628	1,801	2,806
Multi-Family	2,227	2,955	5,211	3,805	4,568	7,869	4,707	5,297	9,848
% Single Family Detached	70%	65%	48%	58%	54%	42%	53%	52%	36%
% Townhomes	5%	5%	7%	11%	11%	13%	12%	12%	14%
% Multifamily	25%	30%	46%	32%	35%	46%	35%	36%	49%

Figure 6 below shows that the single-family capacity grew modestly as a result of shrinking lot sizes. In some scenarios, however, some of the larger gains in overall housing capacity that are achieved through increasing multi-family options would potentially be accompanied by a reduction in single-family capacity compared to the base case.

Figure 6. Housing Mix of Added Units, by Scenario

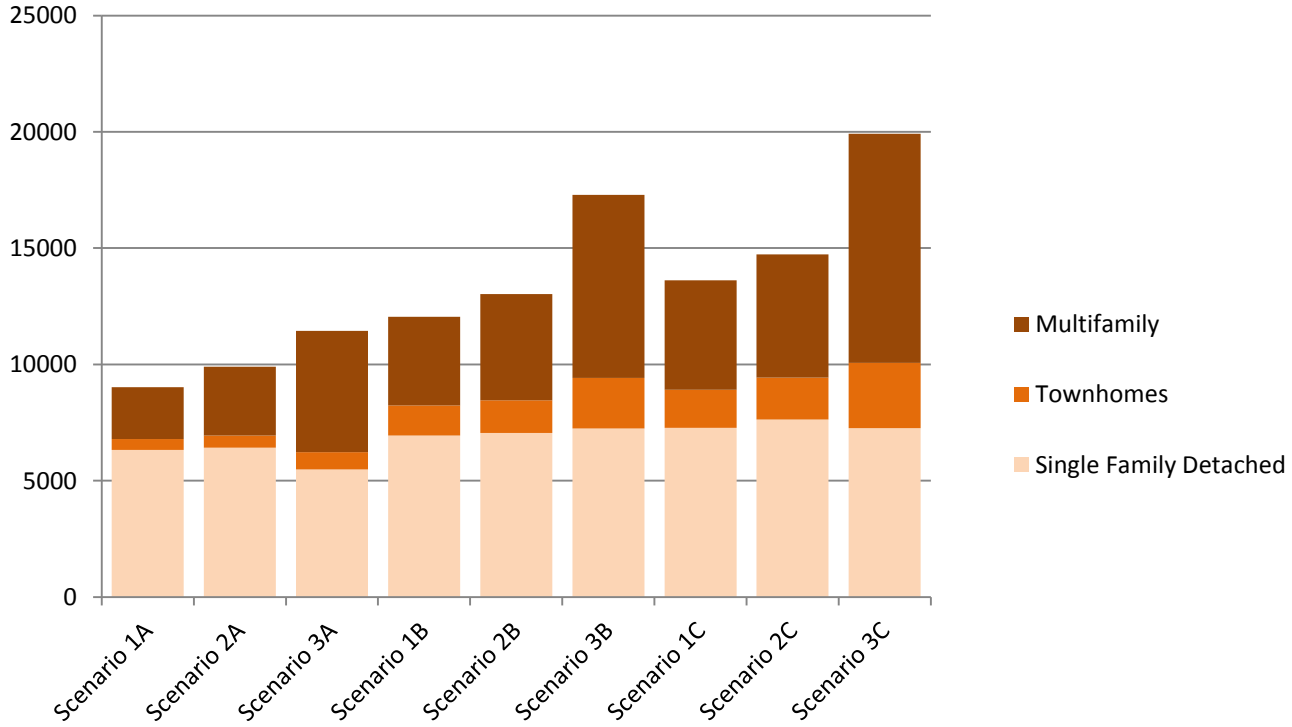
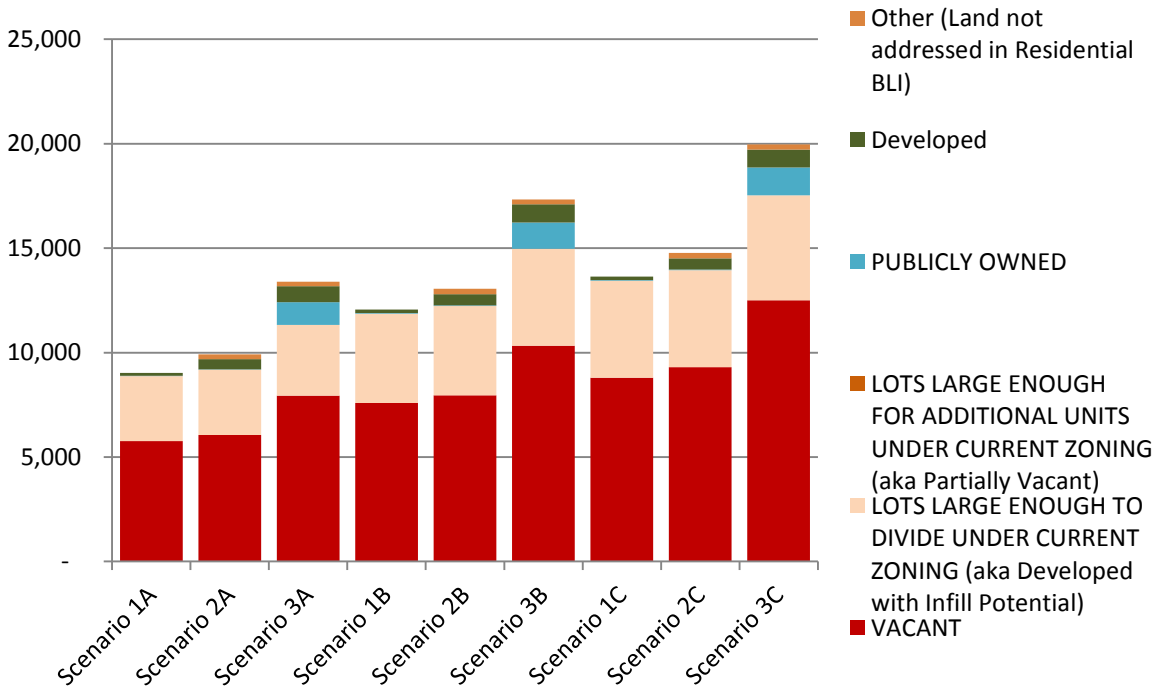


Figure 7. BLI Status of Added Housing Units, by Scenario

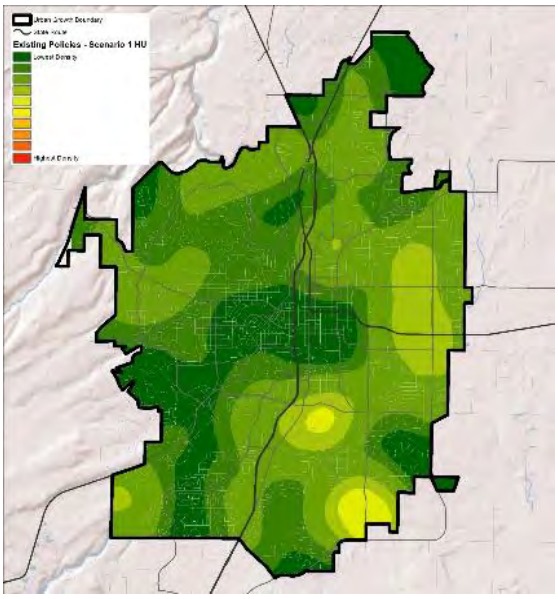


As shown in Figure 7, the majority of the growth in all analyzed scenarios is on land that is currently classified as Vacant. Scenarios 2 and 3 provide some additional housing capacity using land that is currently developed, and Scenario 3 increases housing capacity through Publicly Owned land, namely Juniper Ridge.

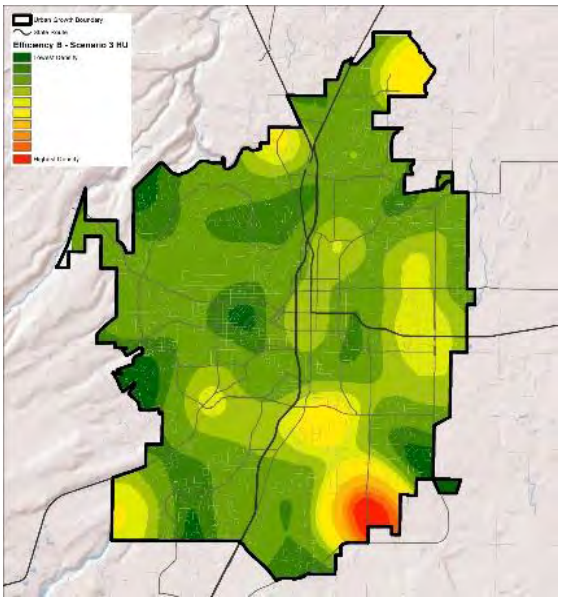
The maps in Figure 8 below show a heatmap of added housing in two of the analyzed scenarios (1A – Base Case; and 3C – Intensify & Mix with Revised Code and Additional Efficiency Measures). Greener areas have a lower density of housing, while yellow and red areas have a higher density. Opportunity Area 7 in the southeast is clearly a major source of new housing, varying by its composition (a single family subdivision or a new “complete community” with a mix of housing types) and the use of masterplan requirements to increase minimum densities. Other housing hotspots include Juniper Ridge (in Scenario 3), underdeveloped land near OBRiley Road and Robal in the north (in Scenario 3), the 3rd street corridor (in Scenarios 2 and 3), and other underdeveloped areas in the eastern and southern areas of the City.

Figure 8. Housing Density Heatmap

Scenario 1A



Scenario 3C



Employment

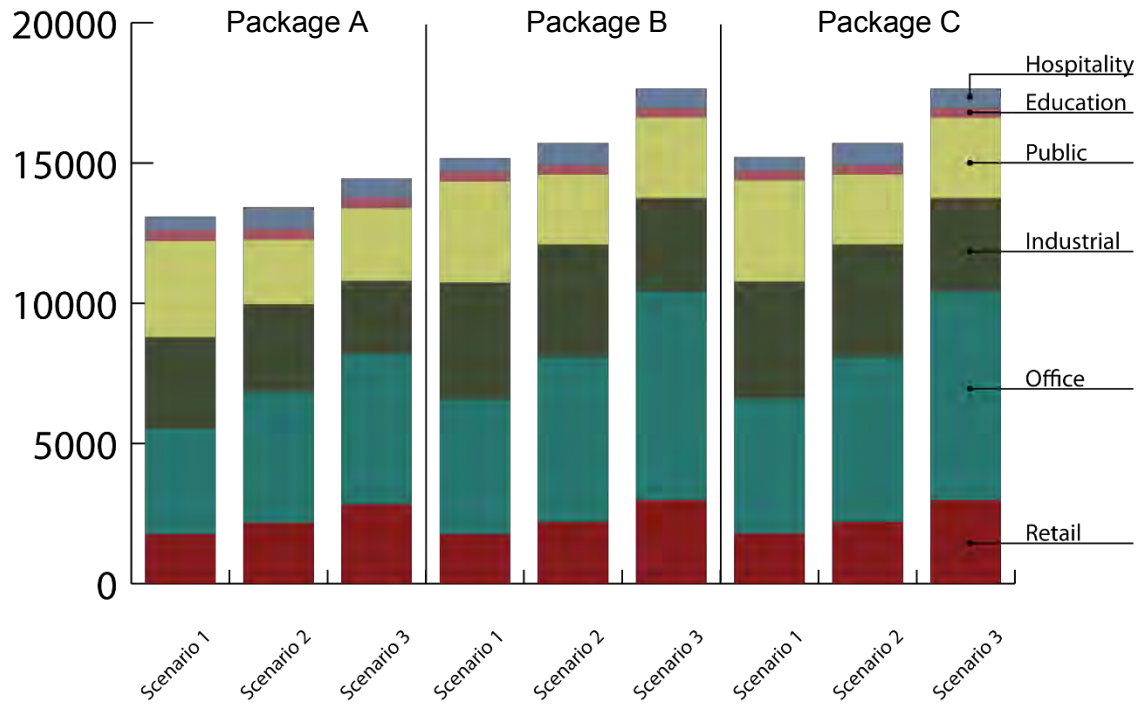
Capacity for jobs within the UGB followed patterns similar to housing. Designation of more intense uses within the identified opportunity areas provided more potential job capacity in all scenarios tested. One potential result of adding more commercial and mixed use development is a growth in the proportion of retail jobs. In the Base Case (Scenario 1A) retail jobs comprise 13% of the overall employment capacity. This increases 20% in Scenario 3A. The trend is similar in the scenarios with efficiency measures.

There was very little difference between Efficiency Measure Package B and Package C with regard to employment capacity. This result is expected, because the efficiency measure packages were developed primarily to encourage residential development. The increase in employment seen in Table 4 is likely due to increases in allowable building height and lot coverage in mixed-use zones, which was a component of both Package B and Package C.

Table 4. Employment Capacity Estimates

	Package A			Package B			Package C		
	1A	**2A**	**3A**	**1B**	**2B**	**3B**	**1C**	**2C**	**3C**
New Jobs	**13,088**	**13,429**	**14,461**	**15,178**	**15,715**	**17,654**	**15,212**	**15,715**	**17,654**
Retail	1,757	2,171	2,831	1,773	2,201	2,982	1,786	2,201	2,982
Office	3,781	4,669	5,358	4,778	5,857	7,409	4,800	5,857	7,409
Ind	3,256	3,123	2,608	4,188	4,038	3,359	4,188	4,038	3,359
Pub	3,420	2,291	2,588	3,600	2,481	2,864	3,600	2,481	2,864
Ed	383	383	383	346	346	346	346	346	346
Hosp	492	792	693	492	792	693	492	792	693
New Jobs/Acre	14.00	15.31	17.99	16.24	17.92	21.79	16.26	17.92	21.83

Figure 9. Potential Employment Capacity

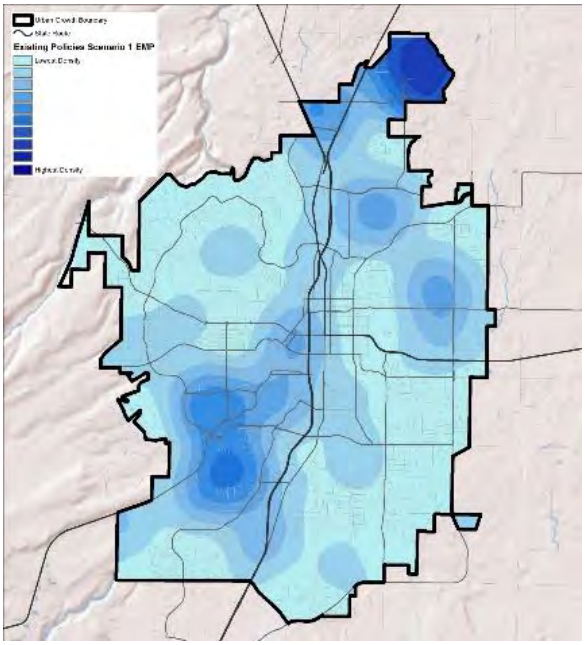


As shown in Figure 9, the greatest areas of jobs growth in the scenarios were on vacant and publicly owned land. As housing intensity and mixing of uses increase in Scenarios 2 and 3, less vacant land is utilized for employment and more job growth through redevelopment is expected.

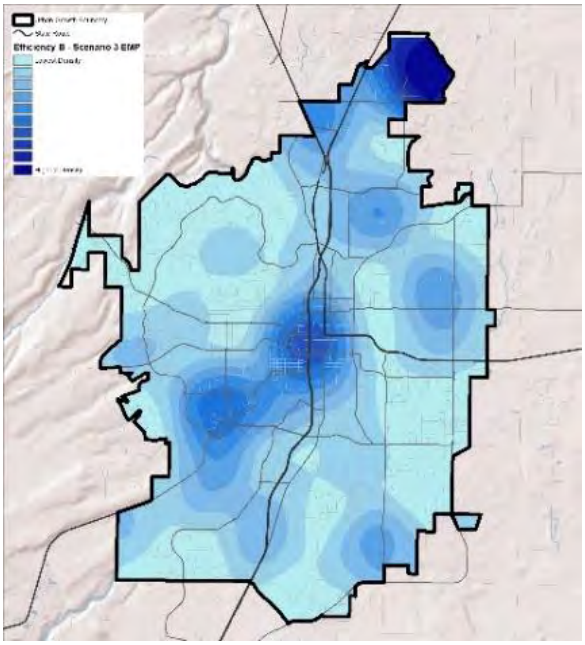
The maps in Figure 10 below show added employment in two of the analyzed scenarios (1A – Base Case; and 3C – Intensify & Mix with Revised Code and Additional Efficiency Measures). Lighter areas have a lower density jobs, while darker areas have a higher density. Juniper Ridge is a major source of new employment in all scenarios. Increased employment downtown, near OSU, and in Opportunity Area 7 come from growth and mixing of uses in these areas Scenarios 2 and 3.

Figure 10. Employment Heatmaps

Scenario 1A



Scenario 3C



Housing & Employment Comparison of Opportunity Areas

The scenario analysis evaluated the capacity for housing and jobs in each of the opportunity areas. The following table describes those results.

Table 5. Housing Units Added by Opportunity Area

		Scenarios								
		1A	2A	3A	1B	2B	3B	1C	2C	3C
Opportunity Area 1	SF Detached	0	0	0	0	0	0	0	0	0
	SF Attached	1	22	23	2	22	23	2	22	23
	Multifamily	8	521	537	9	567	583	10	567	583
	Units Total	**9**	**544**	**560**	**11**	**589**	**606**	**12**	**589**	**606**
Opportunity Area 2	SF Detached	-	-	-	-	-	-	-	-	-
	SF Attached	-	-	-	-	-	-	-	-	-
	Multifamily	0	0	4	0	0	9	0	0	9
	Units Total	**0**	**0**	**4**	**0**	**0**	**9**	**0**	**0**	**9**
Opportunity Area 3	SF Detached	0	0	0	0	0	0	0	0	-
	SF Attached	0	0	3	0	0	3	0	0	3
	Multifamily	0	0	31	0	0	34	0	0	34
	Units Total	**0**	**0**	**34**	**0**	**0**	**37**	**0**	**0**	**37**
Opportunity Area 4	SF Detached	6	6	5	7	7	6	7	7	0
	SF Attached	0	0	48	1	1	72	1	1	72
	Multifamily	27	24	430	34	30	485	34	30	499
	Units Total	**33**	**30**	**483**	**41**	**38**	**562**	**42**	**38**	**571**
Opportunity Area 5	SF Detached	0	0	5	0	0	6	0	0	6
	SF Attached	-	-	-	-	-	-	-	-	-
	Multifamily	0	0	9	0	0	10	0	0	10
	Units Total	**0**	**0**	**14**	**0**	**0**	**17**	**0**	**0**	**17**
Opportunity Area 6	SF Detached	-	-	167	-	-	184	-	-	187
	SF Attached	-	-	76	-	-	135	-	-	163
	Multifamily	-	-	811	-	-	909	-	-	936
	Units Total	**-**	**-**	**1,054**	**-**	**-**	**1,227**	**-**	**-**	**1,286**
Opportunity Area 7	SF Detached	705	704	758	789	784	837	691	928	456
	SF Attached	47	53	164	102	165	524	197	318	890
	Multifamily	41	207	1,217	215	365	1,454	752	751	2,965
	Units Total	**794**	**963**	**2,139**	**1,107**	**1,314**	**2,815**	**1,640**	**1,997**	**4,311**
Opportunity Area 8	SF Detached	93	93	166	93	93	187	93	93	187
	SF Attached	13	13	25	28	28	54	28	28	54
	Multifamily	11	11	169	19	19	207	19	19	207
	Units Total	**117**	**117**	**360**	**140**	**140**	**448**	**140**	**140**	**448**
Opportunity Area 9	SF Detached	-	105	92	-	105	92	-	105	92
	SF Attached	-	14	13	-	31	28	-	31	28
	Multifamily	-	13	11	-	21	18	-	21	18
	Units Total	**-**	**132**	**116**	**-**	**158**	**138**	**-**	**158**	**138**

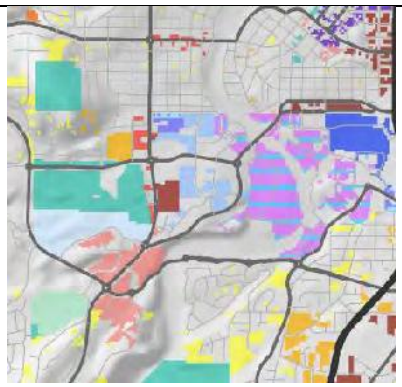
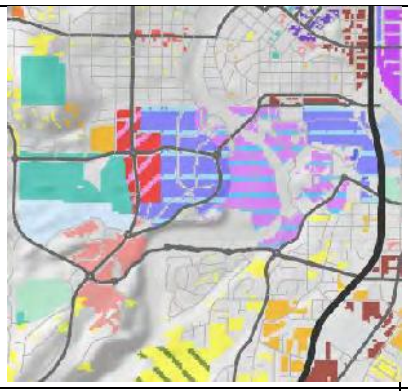
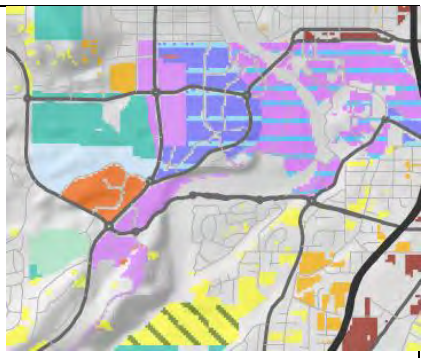
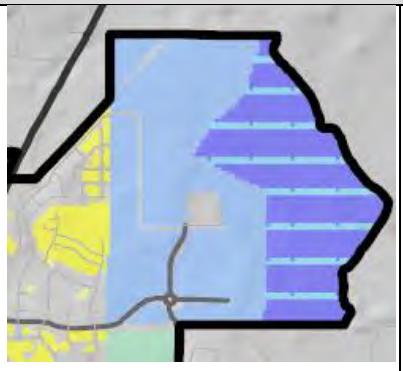
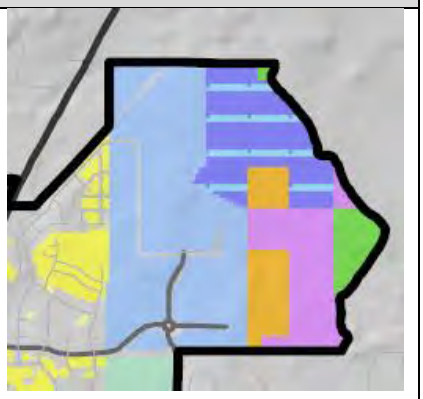
Table 6. Employment Added by Opportunity Area

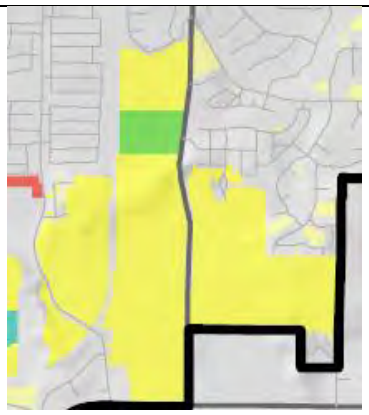
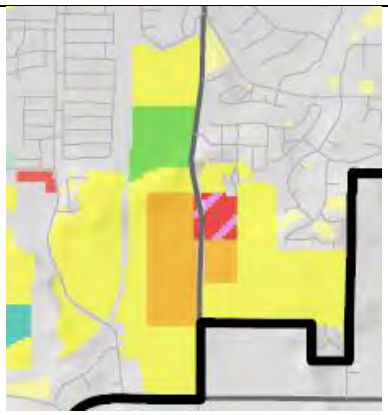
	Scenarios								
	1A	2A	3A	1B	2B	3B	1C	2C	3C
Opportunity Area 1	68	990	1,018	78	1,161	1,192	78	1,161	1,192
Opportunity Area 2	3	3	149	3	3	267	3	3	267
Opportunity Area 3	2	12	51	2	13	73	2	13	73
Opportunity Area 4	540	623	659	608	700	922	608	700	922
Opportunity Area 5	44	48	77	58	59	90	58	59	90
Opportunity Area 6	1,583	1,781	1,739	1,948	2,165	2,361	1,948	2,165	2,361
Opportunity Area 7	4	190	395	5	198	528	39	198	528
Opportunity Area 8	1	1	11	1	1	11	1	1	11
Opportunity Area 9	1,258	80	345	1,273	82	349	1,273	82	349

Table 7 describes and illustrates the results for each of the Opportunity Areas where there was more marked change.

Table 7. Performance of Select Opportunity Areas

Scenario 1	Scenario 2	Scenario 3
Area 1: 3rd Street Corridor		
Package A: 9 Units / 68 jobs **Package B:** 11 Units / 78 Jobs **Package C:** 12 Units / 78 Jobs	**Package A:** 544 Units / 990 jobs **Package B:** 589 Units / 1,161 Jobs **Package C:** 589 Units / 1,161 Jobs	**Package A:** 560 Units / 1,018 jobs **Package B:** 606 Units / 1,192 Jobs **Package C:** 606 Units / 1,192 Jobs
Area 4: SW Century Drive		

		
Package A: 33 Units / 540 jobs **Package B:** 41 Units / 608 Jobs **Package C:** 42 Units / 608 Jobs	**Package A:** 30 Units / 623 jobs **Package B:** 38 Units / 700 Jobs **Package C:** 38 Units / 700 Jobs	**Package A:** 483 Units / 659 jobs **Package B:** 562 Units / 922 Jobs **Package C:** 571 Units / 922 Jobs
Area 6: Juniper Ridge		
		
Package A: 1,583 jobs **Package B:** 1,948 Jobs **Package C:** 1,948 Jobs	**Package A:** 1,781 jobs **Package B:** 2,165 Jobs **Package C:** 2,165 Jobs	**Package A:** 1,054 Units / 1,739 jobs **Package B:** 1,227 Units / 2,361 Jobs **Package C:** 1,286 Units / 2,361 Jobs
Area 7: SE 15th / JL Ward Co Properties		

		
Package A: 794 Units / 4 jobs **Package B:** 1,107 Units / 5 Jobs **Package C:** 1,640 Units / 39 Jobs	**Package A:** 963 Units / 190 jobs **Package B:** 1,314 Units / 198 Jobs **Package C:** 1,997 Units / 198 Jobs	**Package A:** 2,139 Units / 395 jobs **Package B:** 2,815 Units / 528 Jobs **Package C:** 4,311 Units / 528 Jobs

Efficiency Measure Performance

This section addresses housing and employment capacity between the packages of efficiency measures.

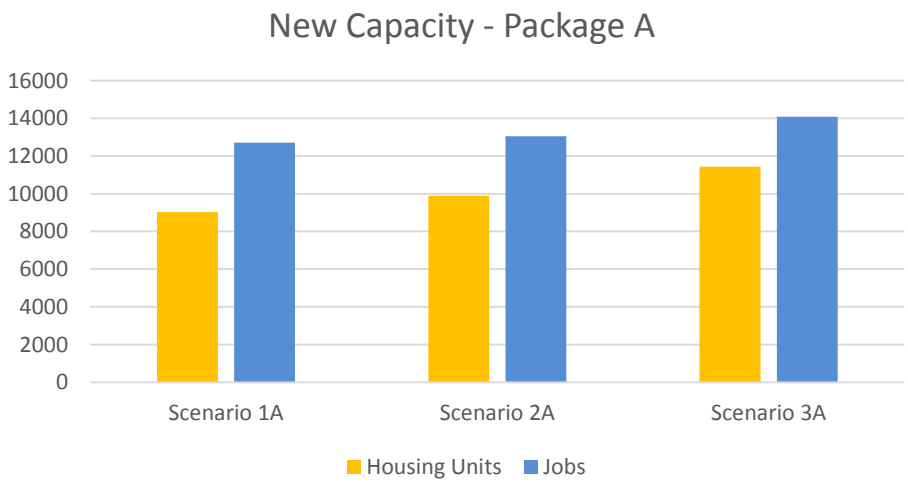
Package A

"Package A" scenarios were analyzed using the existing policy set with no additional code-related efficiency measures. As noted above, Scenario 1A is the base case application of current General Plan designations. In Scenarios 2A and 3A, where densities are increased in the opportunity areas, the result is higher capacity for both jobs and housing.

The additional housing capacity increases through use of higher density single-family designations and increasing the amount of land designated for multi-family products based on the use of new development types, primarily in geographic-specific opportunity areas.

Additional multi-family units from redevelopment grew incrementally from 150 in Scenario 1 (Base Case) to 730 in Scenario 2 and just over 900 in Scenario 3.

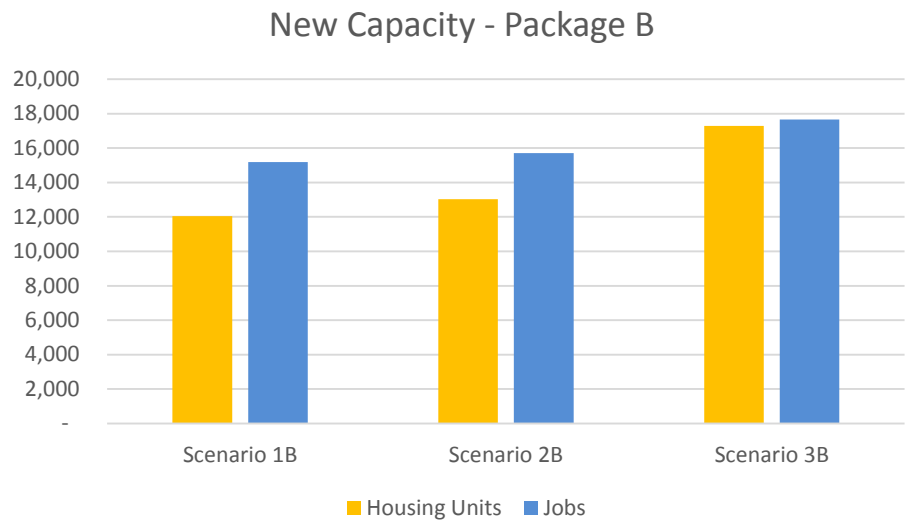
Figure 11. Package A New Capacity (2014-2028)



Package B

Package B assumes code revisions that encourage more efficient use of land. The development types in scenarios 1B, 2B, and 3B were replaced with a set that reflected the set of efficiency measures that are intended to provide market-oriented incentives for increased densities. As expected, this package of efficiency measures increases potential capacity for housing and jobs compared to Package A.

Figure 12. Package B New Capacity (2014-2028)



Package C

Package C scenarios include revised development code provisions and additional efficiency measures, notably changes to parcels greater than 20 acres designated RS or RM. In these areas, the development types were changed to a “master plan” typology where residential densities were increased to 80% of the allowed maximum. Table 8 describes how the density of these plan categories changed with application of Package C efficiency measures.

Figure 13. Package C New Capacity (2014-2028)

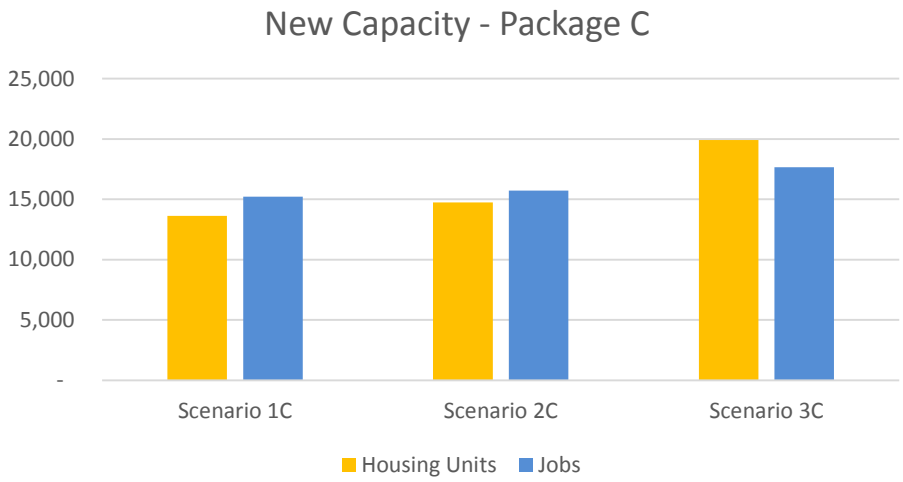


Table 8. Package C Development Types used in Envision Tomorrow

Development Type	Net Residential Density (Units/Acre)	Gross Residential Density (Units/Acre)
RS	5.1	3.12
RS w/ Efficiency Measures	7.1	4.6
RS Code Maximum	NA	7.3
RS Masterplan	9.5	5.8
RM	12.4	9.8
RM w/ Efficiency Measures	16.4	11.0
RM Masterplan	29.0	17.3
RM Code Maximum	NA	21.7

ANALYSIS AND INTERPRETATION

Most change predicted by the model occurs on vacant land. The majority of the growth in all analyzed scenarios is on land that is currently classified as Vacant (see Figure 7). Scenarios 2 and 3 provide some additional housing capacity using land that is currently developed, and Scenario 3 increases housing capacity through Publicly Owned land, namely Juniper Ridge. Similarly, the greatest areas of jobs growth in the scenarios were on vacant and publicly owned land. As housing intensity and mixing of uses increase in Scenarios 2 and 3, less vacant land is utilized for employment and more job growth through redevelopment is expected. Redevelopment on non-vacant land was modeled using an analysis of development trends in the HNA, which may account for the limited growth seen in these areas.

A few opportunity areas are the major drivers of change between scenarios. Unsurprisingly, the large vacant areas (Opportunity Areas 6 and 7) have a significant impact on overall jobs and housing growth, depending on what development types modeled. Areas that are largely developed experience less change in the model, as there is less available vacant land and relatively few properties are expected to redevelop during the planning period.

The majority of increased residential capacity associated with Opportunity Area 7, particularly in Scenarios 2C and 3C are in the form of multi-family units. The projected multi-family capacity in this area contributes to more multi-family units than the target need within these scenarios.

The projections for Area 6 (Juniper Ridge) are less significant in terms of the total number of units but also indicated a very high percentage of multi-family units in Scenario 3.

Scenario 3 also projects a significant number and percentage of multi-family units for Opportunity Area 4. However, based on TAC discussion during the TAC/USC workshop and the proposed future OSU Cascades Campus in this area, this may be a more appropriate location for this assumed mix of housing. This is likely to be reviewed and tested in more detail in the Westside Planning effort currently underway for this area. Similarly, in Opportunity Area 1, the mix of projected new units is generally consistent with the recently adopted Central District MMA Plan.

The above findings should be discussed by the TAC – specifically, where the appropriate focal points for multi-family housing should be within the City of Bend.

Efficiency measures have a significant impact. These differences can be seen clearly on Figure 6 and Figure 9. Across all Scenarios, Package B appears to result in a housing mix that is more in line with the existing character of Bend and the results of the Housing Needs Analysis. Much of the difference between Package B and Package C is an increase in minimum required density for master-planned developments from 60% to 80% (See Item 18 in Appendix D). This efficiency measure dovetails with the sensitivity of the model to Opportunity Areas 6 and 7, creating a great deal of added capacity (particularly multi-family capacity) in these areas under Package C.

COMPARISON TO NEED – A NEXT STEP

The project team will provide comparisons to housing and employment land needs as part of the next scenario evaluation. The comparison to need will estimate the capacity of the existing UGB and the residual land need for expansion lands. These numbers have not been estimated here for several reasons: (1) The initial nine scenarios (1A through 3C) are not final and complete scenarios – they are kits of parts from which to build additional scenarios; (2) The team is still working on the BLI and Base Case, so the base numbers are subject to change; (3) The "need" side of the equation is still subject to finalization based on TAC input on assumptions for group housing and second homes. (4) The need side of the equation also must include land needed for a variety of other purposes beyond housing units and jobs (i.e., parks, schools, faith-based, social and fraternal organization facilities, roads, other public facilities, etc.) which are dependent upon the projected housing and employment land need.

Appendix A

PROJECT GOALS

The City of Bend has entered the next phase of its Urban Growth Boundary (UGB) expansion to chart a path for Bend's future growth. The UGB is a line drawn on the City's General Plan map that identifies Bend's urban land. This land represents an estimated 20-year supply of land for employment, housing, and other urban uses. As the city continues to grow, we have an opportunity to develop a plan for future growth that reflects the community's goals and meets state planning requirements.

The UGB Steering Committee approved the following Project Goals on September 4, 2014.

A Quality Natural Environment

As Bend grows, it preserves and enhances natural areas and wildlife habitat. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Balanced Transportation System

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

Great Neighborhoods

Bend has a variety of great neighborhoods that promote a sense of community and are well-designed, safe, walkable, and include local schools and parks. Small neighborhood centers provide local shops, a mix of housing types, and community gathering places. The character of historic neighborhoods is protected and infill development is compatible.

Strong Active Downtown

Bend's downtown continues to be an active focal point for residents and visitors with strong businesses, urban housing, civic services, arts and cultural opportunities, and gathering places. Parking downtown is adequate and strategically located. Planning in other areas continues to support a healthy downtown.

Strong Diverse Economy

Bend has a good supply of serviced land planned for employment growth that supports the City's economic development goals, provides a range of diverse jobs and industries, and supports innovation. Employment areas, large and small, have excellent transportation access.

Connections to Recreation and Nature

Bend continues to enhance its network of parks, trails, greenbelts, recreational facilities, and scenic views inside and outside the city.

Housing Options and Affordability

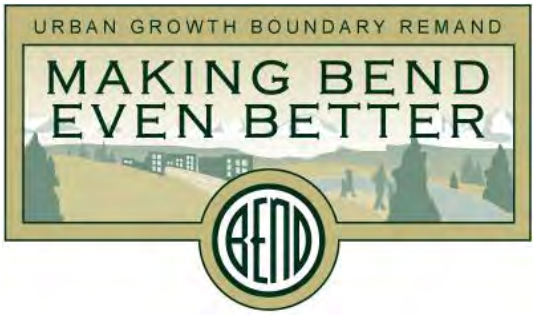
Bend residents have access to a variety of high quality housing options, including housing affordable to people with a range of incomes and housing suitable to seniors, families, people with special needs, and others. Housing design is innovative and energy efficient.

Cost Effective Infrastructure

Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

September 4, 2014
www.bendoregon.gov/bendugb

Appendix B: Urban Form Diagrams

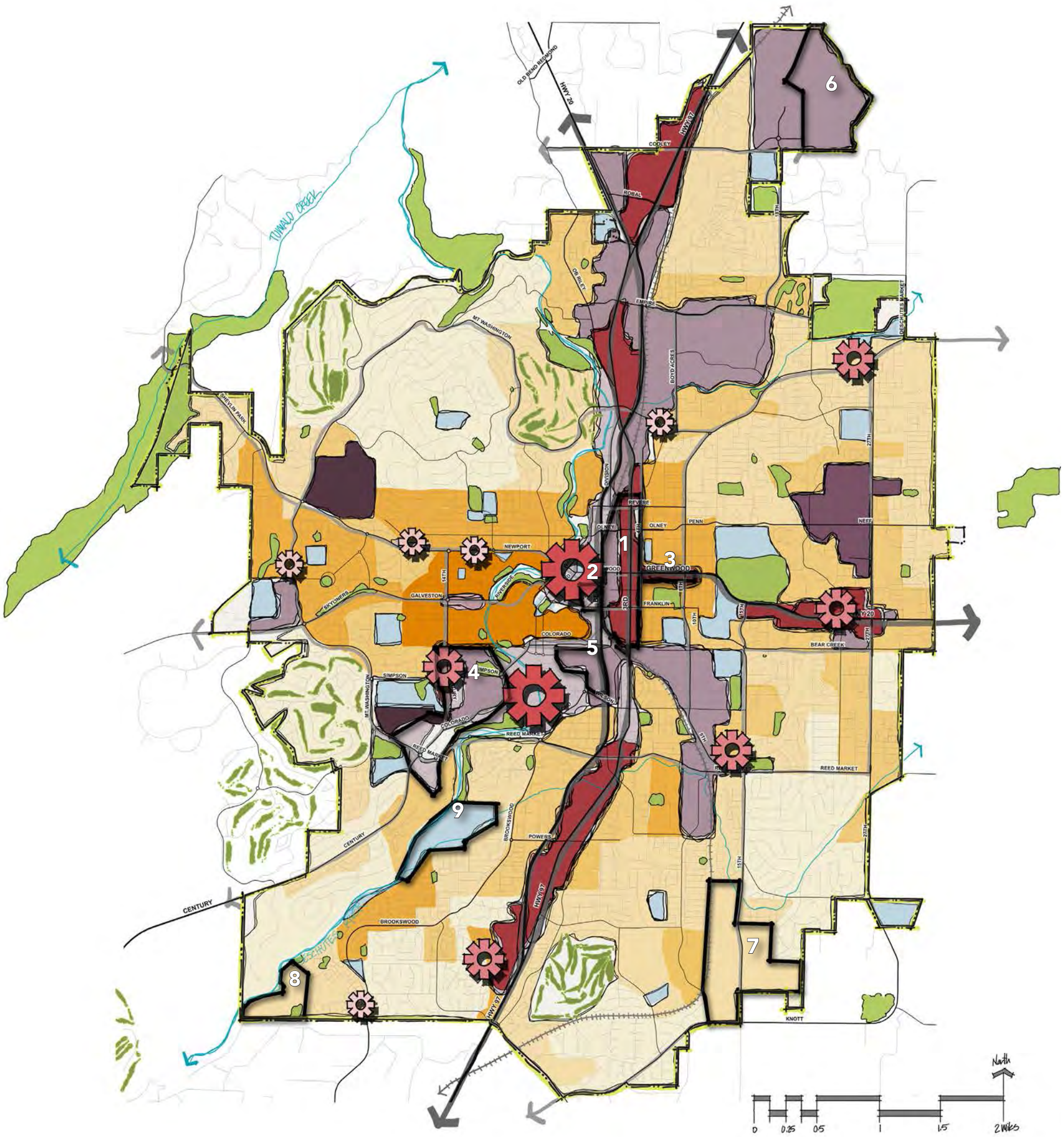


BEND URBAN FORM DIAGRAM

SCENARIO 1: BASE CASE (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

#

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

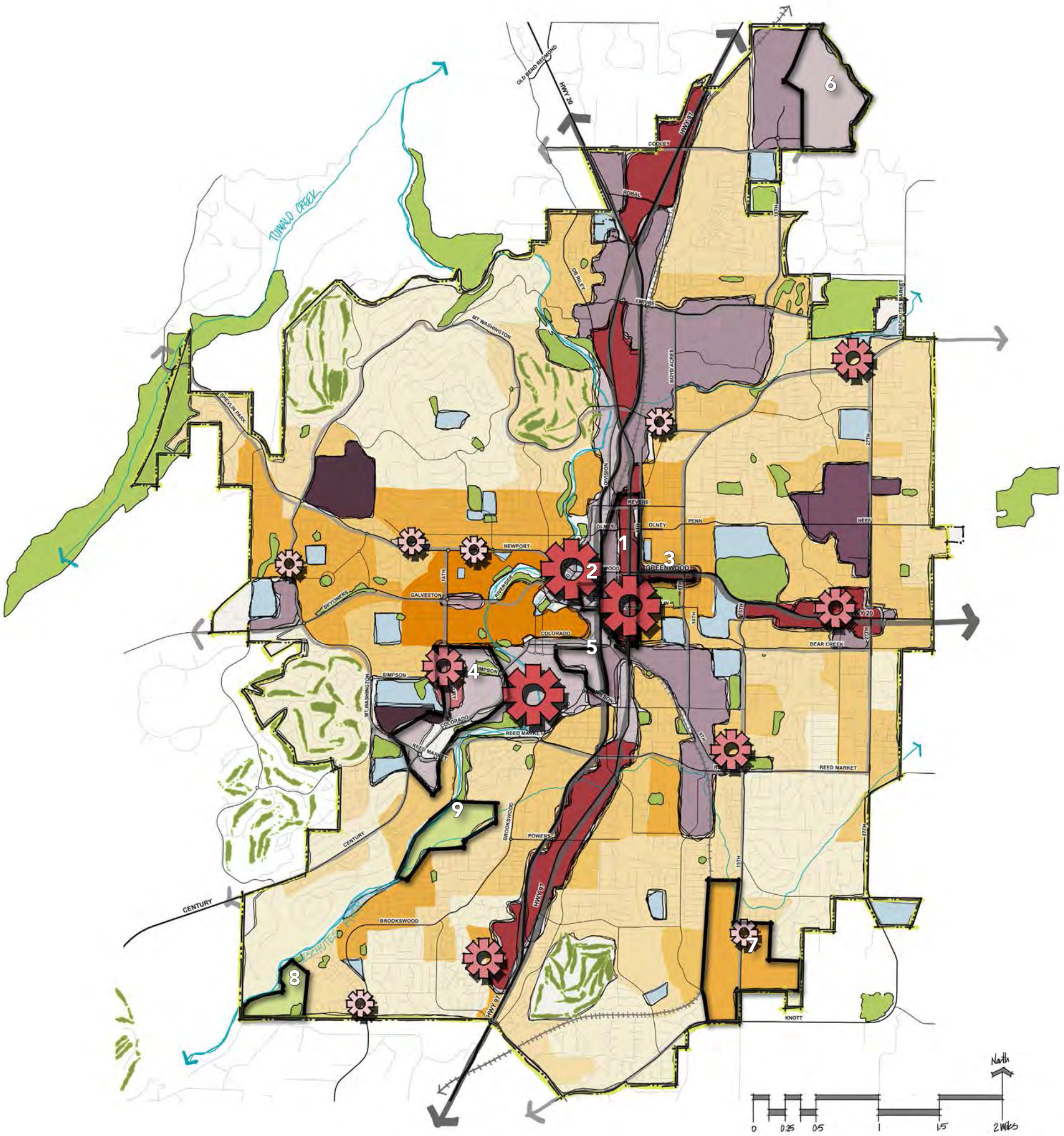
- Public Facilities

BEND URBAN FORM DIAGRAM

SCENARIO 2: INTENSIFY (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

- #

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space
- Neighborhood

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

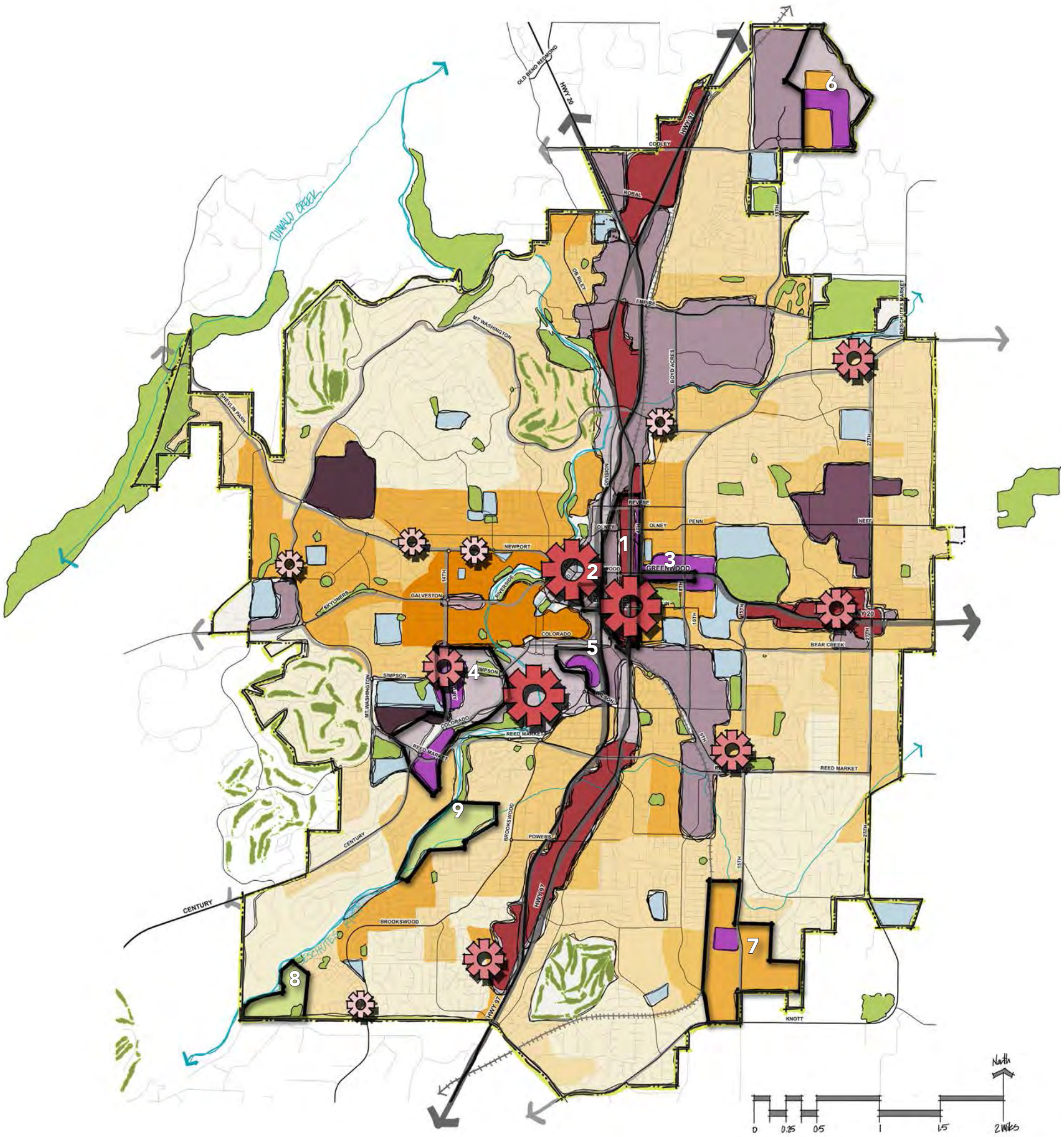
- Public Facilities

BEND URBAN FORM DIAGRAM

SCENARIO 3: INTENSIFY AND MIX (W/ OPPORTUNITY SITES)

January 20, 2015

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER



LEGEND

- City Limits
- Urban Growth Boundary
- River/Stream
- Rail Road
- Major Arterial/Highway
- Minor Arterial
- Park/Open Space

Opportunity Site

#

Neighborhoods

- Historic
- Traditional
- Mixed Suburban
- Single Family Suburban
- Large Lot
- Open Space Neighborhood
- Neighborhood Mixed Use

Centers and Corridors

- Urban Mixed Use Center
- Major Commercial Corridor
- Community Commercial Center/Corridor
- Local Commercial Center/Corridor

Employment Districts

- Institutional
- Medical Center
- Industrial/Professional Office
- Mixed Employment

Public Facilities

- Public Facilities

Appendix C: Development Types Used in Envision Tomorrow

The table below describes the development types used in the Envision Tomorrow scenarios. Each development type is composed of a mix of building types with characteristics totaling the "Residential Mix" and "Employment Mix" shown below. Overall residential/employment net densities are also shown below.

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
SM	Surface Mining		Office: 16% Industrial: 84%	12.4 Jobs / Net Acre	
SR 2.5		Large Lot SF – 100%	-	1 Unit / Acre	
RL	Low Density Residential	Large Lot SF: 100%	-	2.1 Units/Net Acre	
RS	Std. Density Resdiential	Multi-Family: 5% Townhome: 6% Small Lot SF: 12% Conventional Lot SF: 32% Large Lot SF: 46%	-	5.09 Units/Net Acre .03 Jobs/Net Acre	
RM	Medium Density Residential	Multi-Family: 44% Townhome: 5% Small Lot SF: 40% Conventional Lot SF: 12%	-	12.4 Units/Net Acre .26 Jobs/Net Acre	Also includes "RM for Jobs" at 16.9 Jobs/Net Acre
RH	High Density Residential	Multi-Family: 82% Townhome: 14% Small Lot SF: 4%	-	21.1 Units / Net Acre 5.7 Jobs / Net Acre	
MDOZ	Medical District Overlay Zone	Multi-Family: 100%	Office – 86% Industrial – 9% Civic – 5%	13.1 Units / Net Acre 19.2 Jobs / Net Acre	captures different mix of uses in the MDOZ area
CC	Community Commercial	-	Retail - 35% Office - 39% Industrial - 4%	16.2 Jobs / Net Acre	

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
			Civic - 2% Hotel - 19%		
CC2	"Walkable" Community Commercial	-	Retail – 53% Office – 31% Civic – 1% Hotel – 15%	21.63 Jobs / Net Acre	CC2 - A more dense and walkable version of the Convenience Commercial (CC) designation
CL	Limited Commercial	Multi-Family: 97% Small Lot SF: 3%	Retail - 23% Office - 49% Industrial - 7% Civic – 3% Hotel - 18%	1.1 Units / Net Acre 19.6 Jobs / Net Acre	
CG	General Commercial	-	Retail: 63% Office: 19% Industrial: 3% Civic: 2% Hotel: 13%	0.7 Units / Net Acre 13.1 Jobs / Net Acre	
CB	Central Business District	-	Retail: 8% Office: 63% Civic: 17% Hotel: 12%	2.13 Units / Net Acre 74.61 Jobs / Net Acre	
IP	Industrial Park	-	Office: 43% Industrial: 57%	21.3 Jobs / Net Acre	
IL	Industrial Light	-	Retail: 9% Office: 25% Industrial: 55% Civic: 10%	10.7 Jobs / Net Acre	
IG	Industrial General	-	Retail: 4% Office: 32% Industrial: 60% Civic: 4%	14.9 Jobs / Net Acre	

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
MR	Mixed Riverfront	Multi-Family: 62% Small Lot SF: 38%	Retail: 15% Office: 66% Industrial: 12% Civic: 3% Hotel: 4%	2.8 Units / Net Acre 14.8 Jobs / Net Acre	
ME	Mixed Employment	-	Retail: 16% Office: 31% Industrial: 41% Civic: 7% Hotel: 5%	11.6 Jobs / Net Acre	
PF	Public Facilities	-	Retail: 2% Office: 4% Civic: 94%	14.5 Jobs / Net Acre	
RS-CCR	RS with Development Restrictions	Large Lot SF: 100%	-	1.88 Units / Net Acre	a designation for areas covered by CC&Rs that limit lot divisions to ensure just one unit per lot is considered
University		-	Educational – 100%	25.2 Jobs / Net Acre	Used for planned college/university campuses
MU1	Mixed Use	Multi-Family: 92% Townhome: 8%	Retail: 51% Office: 42% Civic: 5% Hotel: 2%	15.7 Units / Net Acre 24.4 Jobs / Net Acre	new neighborhood-scale mixed use development type
MU2	Mixed Use	Multi-Family: 95% Townhome: 4%	Retail: 12% Office: 69% Civic: 1% Hotel: 18%	34.1 Units / Net Acre 60.7 Jobs / Net Acre	new urban-scale mixed use development type
RS Hillside	Std Density Residential – Clustered Development	Multi-Family: 10% Townhome: 11% Conventional Lot SF: 27% Large Lot SF: 53%	Office: 100%	2.8 Units / Net Acre 0.03 Jobs / Net Acre	Used where topography or other conditions may limit density to the lower end of the allowed range, rather than

Name	Description	Residential Mix	Employment Mix	Res/Emp Density	Additional Information
					the average
RM Hillside	Medium Density Residential – Clustered Development	Multi-Family: 47% Townhome: 7% Small Lot SF: 29% Conventional Lot SF: 17%	Retail: 32% Office: 68%	8.7 Units / Net Acre 0.3 Jobs / Net Acre	Used where topography or other conditions may limit density to the lower end of the allowed range, rather than the average
RS Master-plan	RS for large master-planned areas parcels	Mult-Family: 12% Townhome: 11% Single Family: 77%		9.5 Units / Net Acre	reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)
RM Master-plan	RM for large master-planned areas	Multi-Family: 66% Townhome: 21% Single Family: 14%		29 Units / Net Acre	reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)

The table below describes changes to the Development Types for Efficiency Measure Packages B & C

Development Type	Housing Units per net residential acre	Housing Density with Efficiency Measures	Jobs per net employment acre	Job Density with Efficiency Measures
SM	0	0	12.4	17.4
SR2.5	1.0	1.0	0	0
RL	2.1	3.0	0	0
RS	5.1	7.5	0.0	0.0
RM	12.4	18.6	0.3	0.3
RM for jobs	12.2	14.9	16.9	23.8
RH	21.1	29.8	5.7	7.3
MDOZ	13.1	14.8	19.2	23.5
CC	0	0	16.2	16.9
CL	1.1	1.4	19.6	22.1
CG	0.7	0.8	13.1	13.7
CB	2.1	4.5	74.6	133.8
IP	0	0	21.3	27.0
IL	0	0	10.7	13.2
IG	0	0	14.9	19.5
MR	2.8	3.4	14.8	17.3
ME	0	0	11.6	14.1
PF	0	0	14.5	14.7
RS-CCR	1.9	1.9	0	0
University	0	0	25.2	25.2
MU 1	15.7	17.2	24.4	35.0
MU 2	34.1	37.0	60.7	70.3
RS Hillside	2.8	3.3	0.0	0.0
RM Hillside	8.7	10.9	0.3	0.3
CC2	NA	NA	21.6	22.5
RS Masterplan	NA	9.5	NA	0.0
RM Masterplan	NA	29.0	NA	0.3

Appendix D: Operationalization of Efficiency Measures

The table below describes the efficiency measures (EM) that were tested through Envision Tomorrow's Building Prototypes and Development Types. For Package B and C, separate sets of building types and development types were developed. The values were applied to the scenario maps using the Scenario Builder tool within Envision Tomorrow.

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
1	Increase minimum gross density for RS from 2.0 to 4-5 DU/acre	RS = 3.1 DU/ac	RS = 3.1 DU/ac	RS = 4.6 Du/cC
2	Increase minimum gross density for RM from 7.3 to 10-12 DU/acre	RM = 7.4 DU/ac	RM = 7.4 DU/ac	RM = 11.2 DU/ac
3	Allow Accessory Dwelling Units (ADUs) in all single-family zones	NA	Added SFR building type with ADU type. Categorized it as MFR with 2 units on each site. 1 bedroom at around 750 feet and house with a mix of 3 and 4 bedrooms. Density is 17.7 Du/AC net	Added SFR building type with ADU type. Categorized it as MFR with 2 units on each site. 1 bedroom at around 750 feet and house with a mix of 3 and 4 bedrooms. Density is 17.7 Du/AC net
4	Allow cluster / cottage housing development	No Cottage units in RS or RM	Set of cottage homes to comprise 5% of the RS and RM Development Types	Set of cottage homes to comprise 5% of the RS and RM Development Types

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
5	Allow duplexes and triplexes in SFR zones outright	Duplex set to 3% of RS and RM Triplex set to 7% of RM	Duplex set to 7% of RS and RM Triplex set to 7% of RM	Duplex set to 7% of RS and RM Triplex set to 7% of RM
6	Prohibit SFR detached from the RH zone	SFR detached = 5%	SFR detached = 5%	SFR detached = 0%
7	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 3,000 sf building type to 2,500 sf	Reduced 3,000 sf building type to 2,500 sf
8	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 2,500 sf building type to 2,000 sf	Reduced 2,500 sf building type to 2,000 sf
9	Decrease minimum lot sizes for SFR detached in RM zone		Reduced 2,000 sf building type to 1,500 sf	Reduced 2,000 sf building type to 1,500 sf
10	Reduce minimum lot dimensions for SFR Attached in RH zone		Reduced width from 20 feet to 18’ and depth to 75 feet	Reduced width from 20 feet to 18’ and depth to 75 feet
11	Reduce setbacks in RH and RM zones for SFR Detached		Reduced setbacks for detached building types: 1,500, 2000, 2,500, 4,000, 5,000 s.f. in RM and RH zones In some cases the maximum lot size coverage is exceeded.	Reduced setbacks for detached building types: 1,500, 2000, 2,500, 4,000, 5,000 s.f. in RM zones (No SFR detached was included in RH) In some cases the maximum lot size coverage is exceeded.
12	Increase maximum lot coverage for SFR Attached in RS zones to 50%		Set building coverage to 50%	Set building coverage to 50%
13	Increase maximum lot coverage in RM zones to 60%		Reduced parking spaces to 1.5 per unit in order to reach 60% coverage	Reduced parking spaces to 1.5 per unit in order to reach 60% coverage
14	In the RH zone – allow greater lot coverage. Potential actions: eliminate maximum lot coverage		For Building types used by the RH, reduced parking As follows,	For Building types used by the RH, reduced parking As follows,

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
	requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage		existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1 Retail (listed as spaces per 1,000 sf) 3 > 1.5 Office (listed as spaces per 1,000 sf) 3 > 1.85 3>1.5 for 4-story bldgs 2.85 > 1.5 2 > 1.5 Landscaping standards did not need changing to reach or exceed max FAR	existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1 Retail (listed as spaces per 1,000 sf) 3 > 1.5 Office (listed as spaces per 1,000 sf) 3 > 1.85 3>1.5 for 4-story bldgs 2.85 > 1.5 2 > 1.5 Landscaping standards did not need changing to reach or exceed max FAR
15	ADUs – waive off street parking requirement	NA	SFR/ADU building type only included parking for the main house	SFR/ADU building type only included parking for the main house
16	Duplex and Triplex – reduce parking from 2 to 1.5 per unit	Parking set to 2 spaces per unit	Set to 1.5	Set to 1.5
17	Reduce parking requirements for multi-family housing	Varies by building types	For MFR Building types reduced parking As follows, existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1	For MFR Building types reduced parking As follows, existing>new Residential, listed as spaces per unit 2.5 > 1.5 1.75 > 1 1.5 > 1
18	Increase minimum required density for master planned developments form 60% to 80% of maximum zone	60%	No change	Created RS and RM Masterplan Development Type set to 80% of

Number	Efficiency Measure (EM)	Package A – Existing Code	Package B – Revised Code EM	Package C – Revised Code & Additional EM
	density, and reduce requirement threshold from 40 to 20 acres			max. Applied to vacant sites of 20 acres or more
19	Increase building height for higher intensity areas	Varies by building types and zone	20% of the Urban Mixed Use development types contains buildings of 5, 8 and 15 stories	20% of the Urban Mixed Use development types contains buildings of 5, 8 and 15 stories
20	Expand lot coverage in ME zone from 60% to 80%	60%	Parking requirements for 1 and 2 story office were reduced. Could not reach 80% threshold without employing structured parking, which doesn't match economic profile of ME areas	Parking requirements for 1 and 2 story office were reduced. Could not reach 80% threshold without employing structured parking, which doesn't match economic profile of ME areas

Appendix E: Additional Background on Envision Tomorrow

About Envision Tomorrow

Envision Tomorrow is an open-access scenario planning package that is being employed to analyze future growth patterns and policy decisions impacting growth in Bend. The software, comprised of an ARC/GIS extension and a Microsoft Excel model, develops estimates of how these patterns and policies will impact a range of measures, including growth capacity to travel behavior.

Envision Tomorrow is a suite of planning tools that includes analysis tools and scenario design tools. The analysis tools allows for analysis of aspects of the city using GIS data, such as tax assessor parcel data, the General Plan, and Census data. The scenario painting tool was utilized to "paint" a series of alternative future development scenarios on the landscape within Bend's UGB, and to compare scenario outcomes for this memorandum.

Envision Tomorrow provides a sketch-level glimpse of the possible impacts of policies, development decisions and current growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, development feasibility, fiscal impacts, transportation, environmental factors, and quality of life.

Envision Tomorrow keeps most of the calculation elements in a scenario spreadsheet that is linked to ArcGIS via an extension. Modifying assumptions – and even adding new indicators – is far easier within a spreadsheet than within lines of computer code. In addition, the tool has an high level of transparency since each of the equations is visible and easy to change by the user.

Envision Tomorrow is comprised of two linked, but independent components.

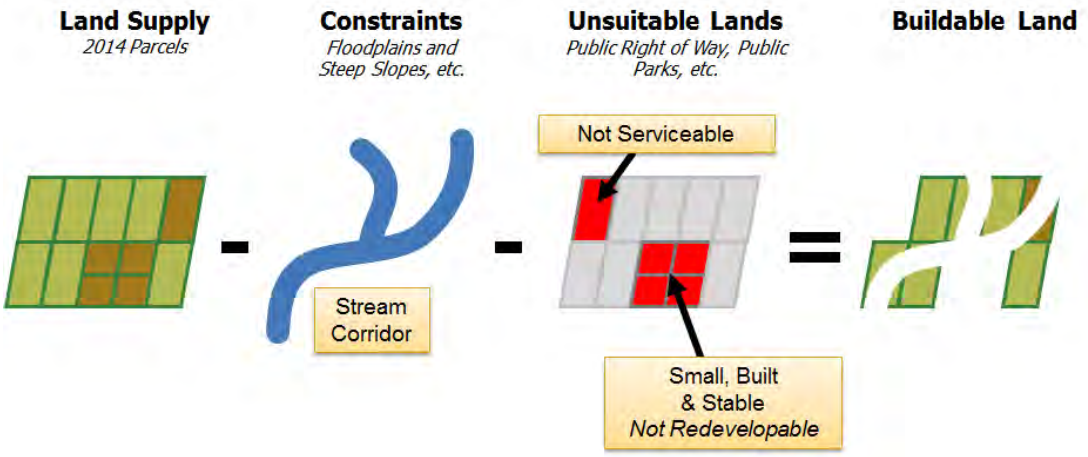
The ESRI ArcGIS Extension

The Envision Tomorrow extension for ESRI's ArcGIS is a relatively simple interface that the team used to select and "paint" different land use types, or Development Types, onto the scenario layer. The extension is also responsible for establishing a dynamic connection to the Scenario Spreadsheet, so as the team paints, information is sent to the Scenario Spreadsheet, which in turn, results in changes in the indicator charts and graphs.

ArcGIS houses the spatial component of Bend's scenario modeling. The City's Buildable Lands Inventory (BLI) was transferred, within GIS, to the planning units (taxlots) upon which scenarios

were developed. Identifying lands that have the potential for additional development and then filtering out lands that are environmentally, physically or otherwise constrained, the BLI conveys how much land within each parcel is vacant or potentially available for redevelopment.

Bend's current land use inventory data show the occupied land in the city and the land use associated with it. The current land use inventory, commonly referred to as existing land use, portrays data related to use, zoning, value and other conditions present for the 2008 base year., updated to include development that occurred between 2008 and 2014. This data is also then used in the scenario development process to determine where redevelopment opportunities may exist.



Spreadsheets

There are three basic types of spreadsheets involved in the interlinked Envision Tomorrow platform.

1. The building-level Prototype Builder spreadsheets
2. The scenario-level Scenario Builder spreadsheet
3. Individual modular models that can be dynamically linked to the scenario spreadsheet, such as the Travel Model

The smallest units of analysis in the Bend scenarios are buildings. Individual buildings were modeled in a template spreadsheet called a Prototype Builder. This template spreadsheet is a simplified, planning-level pro forma, not unlike one used by a developer to evaluate the financial feasibility of a development project. The Prototype Builder includes both the physical attributes of buildings, such as height and landscaping, and also the financial attributes, such as rents and construction costs.

The Prototype Builder is a handy stand-alone tool for evaluating the financial feasibility of current or proposed zoning, and was used in this manner to research redevelopment capacity for the Employment Opportunities Analysis. For the scenario analysis it serves as the template for creating a library of building types. The Prototype Library includes 57 very specific building types based on buildings that are present within Bend today, and a small selection of buildings

that may be desirable in the future. Following is a sampling of some of the more prominent factors associated with the building types.

Physical Inputs

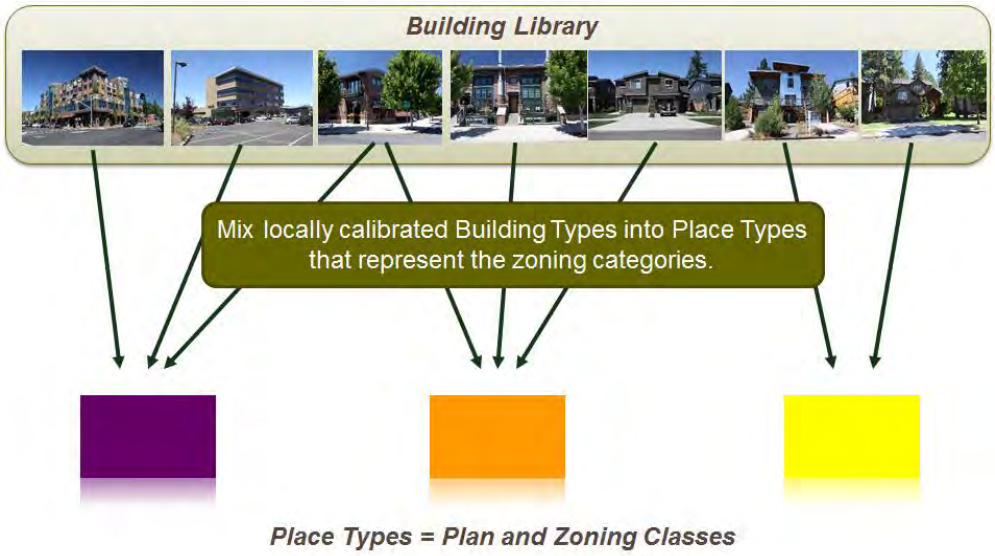
- Lot dimensions
- Height
- Building uses
- Residential unit mix and average sizes
- Square foot per employee figures
- Parking requirements
- Parking configuration (surface vs. structured)
- Parking space efficiency

Financial Inputs

- Construction costs by land use
- Land cost
- Residential and commercial rents
- Residential sales prices
- Parking construction costs

While it is impossible to capture every unique building being built in the city, the building types established through the team's market research broadly represent the "flavor" of new construction in Bend. Each building contains a range of parameters, from average rent to housing unit density, and beyond. These buildings are then mixed, in various combinations, to create the building blocks for "development types" which are used to paint the Base Case (Scenario 1) and alternative development scenarios.

This library of building spreadsheets were loaded into the Scenario Spreadsheet and dynamically linked to enable future additions or changes. The Scenario spreadsheet houses the development types. Development types for this project were based on Bend's general plan, plus some additional types created for testing efficiency measures such as smaller lot sizes or mixed use housing.

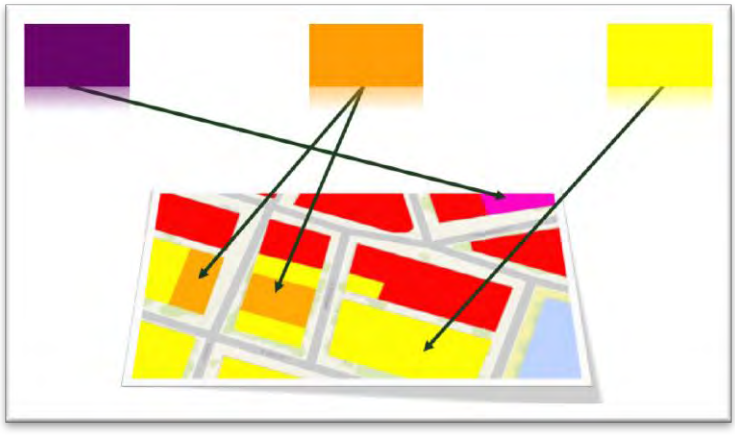


Place Types = Plan and Zoning Classes

Development types

Development types, referred to as Place Types in the graphic above, were created to emulate the City's general plan and the range of uses that one might find within a given designation. Wrapped up within these development types are the building types discussed above as well as roadway characteristics. Roadway characteristics include lane width, number of lanes, sidewalks, bicycle lanes, etc. Also included are net land reductions for parks and other public spaces.

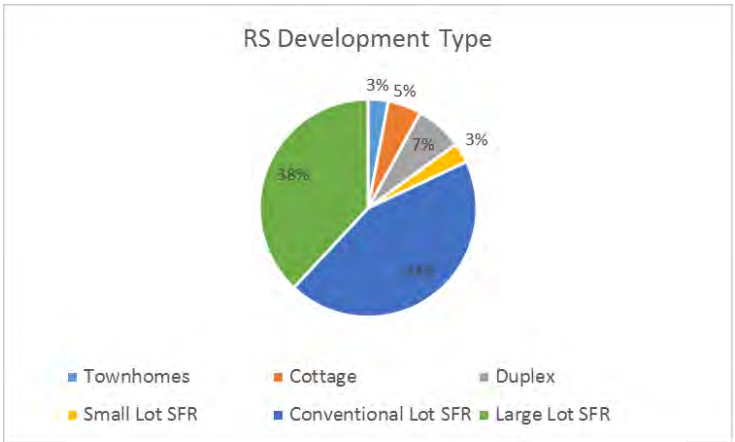
Development types have a variety of attributes, ranging from average lot size to residential energy consumed. The attributes are derived based on the mix of building types included as well as the street characteristics and amount of open space and civic uses included. The building level attributes are aggregated to the development type level as weighted averages using the calibrated mix of building types.



Development types are assigned to lands through "painting" within the GIS.

The painting is correlated to parcels that meet the appropriate criteria. It is important to understand, however, that the analysis is not parcel specific; it does not predict precisely what would occur on a given property. Rather, the weighted averages from the development type are applied to the parcels being painted. This allows the model to do a better job of realizing the variations that happen in the real world based on factors such as developer preference, lot shape, access, views, and neighborhood compatibility.

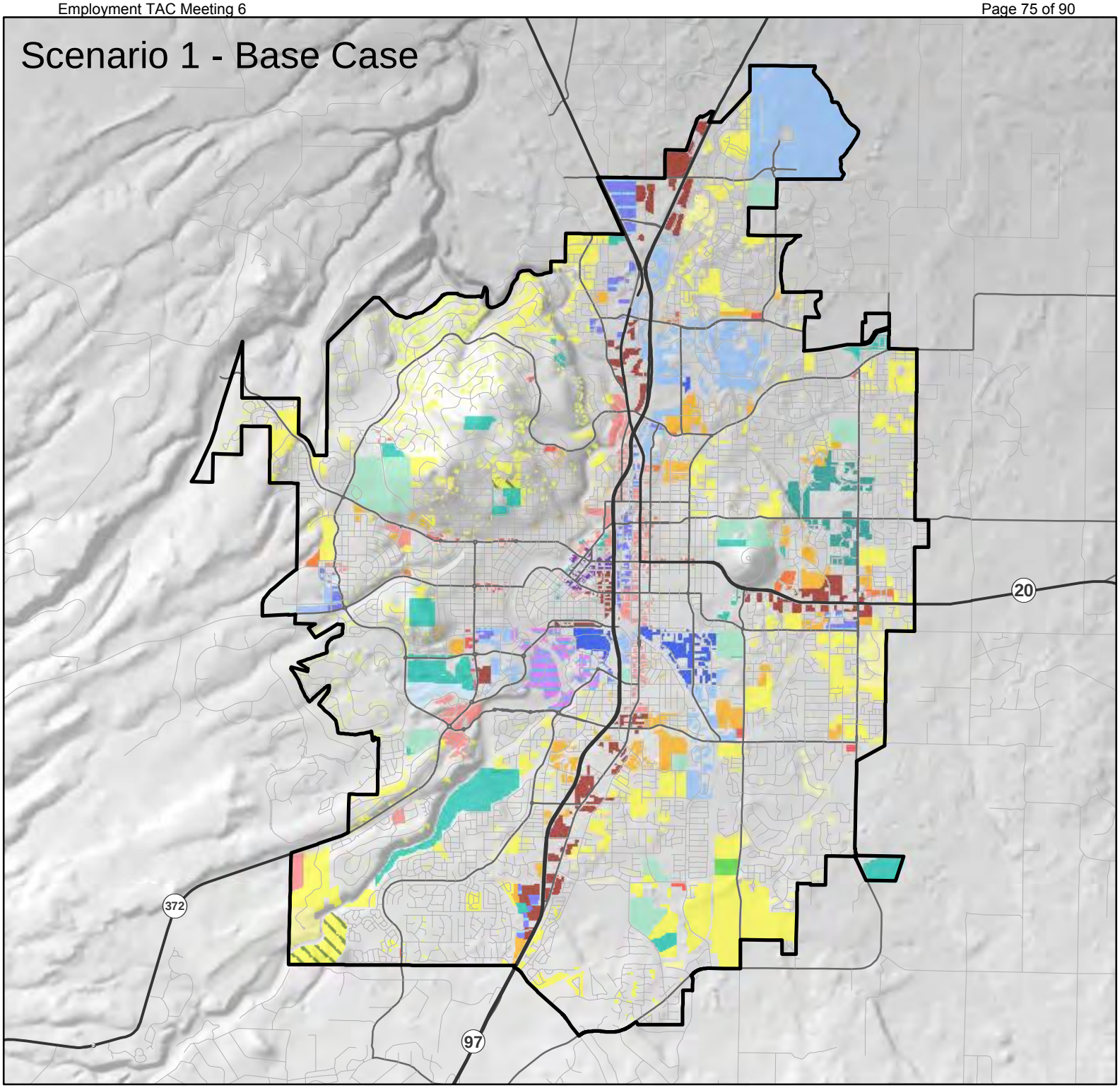
For example, this pie chart shows that the RS development type consists of a range of single-family house types. Accordingly, each acre of land is assigned with a percentage of each of the housing types included. This "averaging" technique facilitates sharing the model outputs seamlessly with the City's infrastructure optimization tool and the travel demand model.



On "vacant" land, the model applies the full amount of density and mix assumptions assigned by the development type. If developed land is painted, the model applies the redevelopment rate specified in the development type spreadsheet and then applies the density and mix assumptions assigned by the development type to the redeveloped fraction of the land. As described above, no development potential is derived from constrained land.

Finally, the model is assessing capacity of the land based on the existing conditions and the densities and products from the development types. Envision Tomorrow does not predict the timing of this development. In essence, it provides a snapshot of potential development projected to occur during the planning period.

Scenario 1 - Base Case



Urban Growth Boundary
State Route

Scenario 1 - Base Case

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

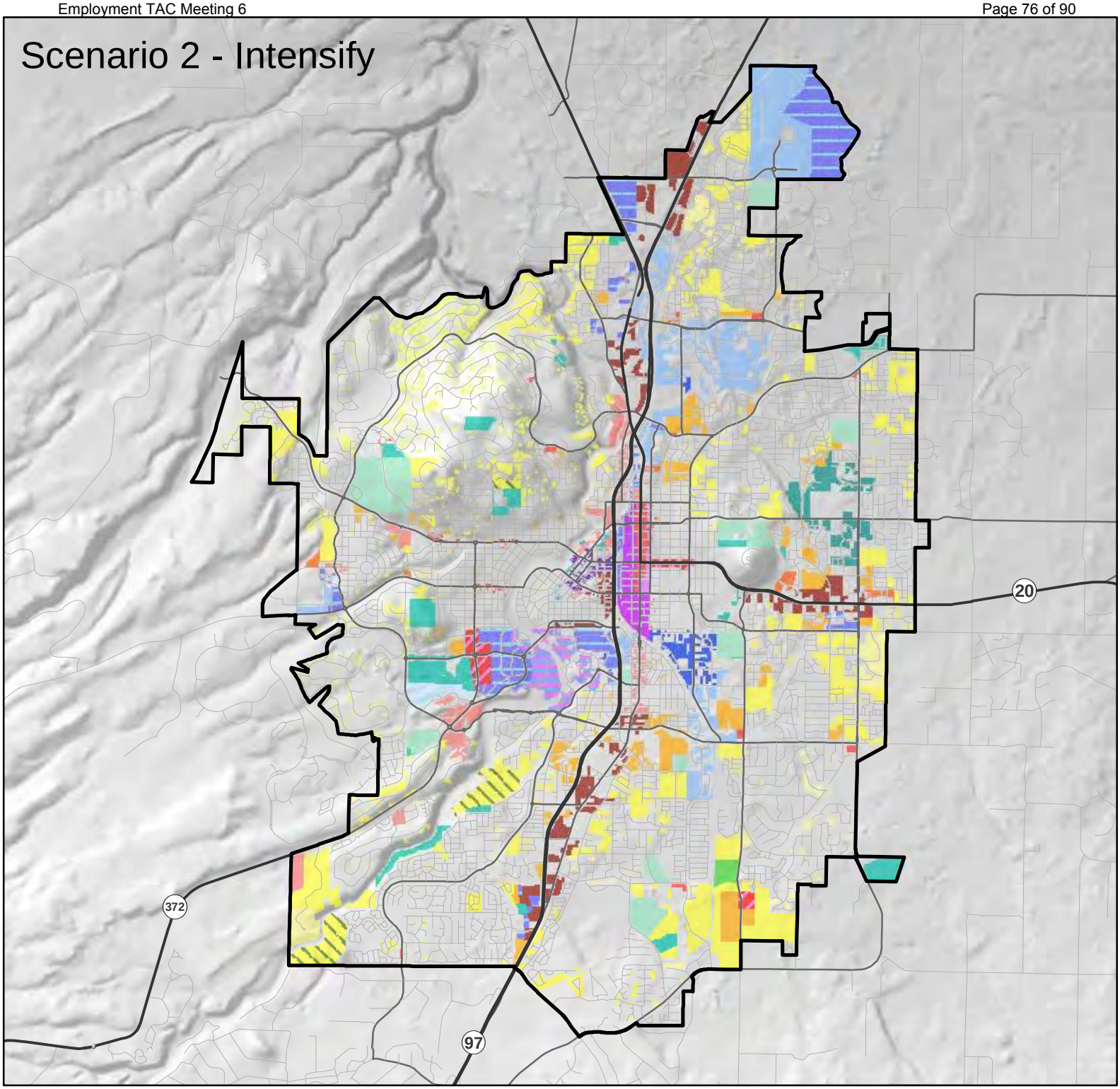
Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
- IG - Industrial General
- SM - Surface Mining
- IP - Industrial Park
- IL - Industrial Light

Residential
- RH - Residential Urban High Density
- RM Masterplan - Residential Urban Medium Density
- RM - Residential Urban Medium Density
- RM for jobs - Residential Urban Medium Density with Jobs
- RM Hillside - Residential Urban Medium Density on Hillside
- RS Masterplan - Residential Urban Standard Density
- RS - Residential Urban Standard Density
- RS Hillside - Residential Urban Standard Density on Hillside
- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Scenario 2 - Intensify



Urban Growth Boundary
State Route

Scenario 2 - Existing Policies

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
- IG - Industrial General
- SM - Surface Mining
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- IL - Industrial Light

Residential
- RH - Residential Urban High Density
- RM Masterplan - Residential Urban Medium Density
- RM - Residential Urban Medium Density
- RM for jobs - Residential Urban Medium Density with Jobs
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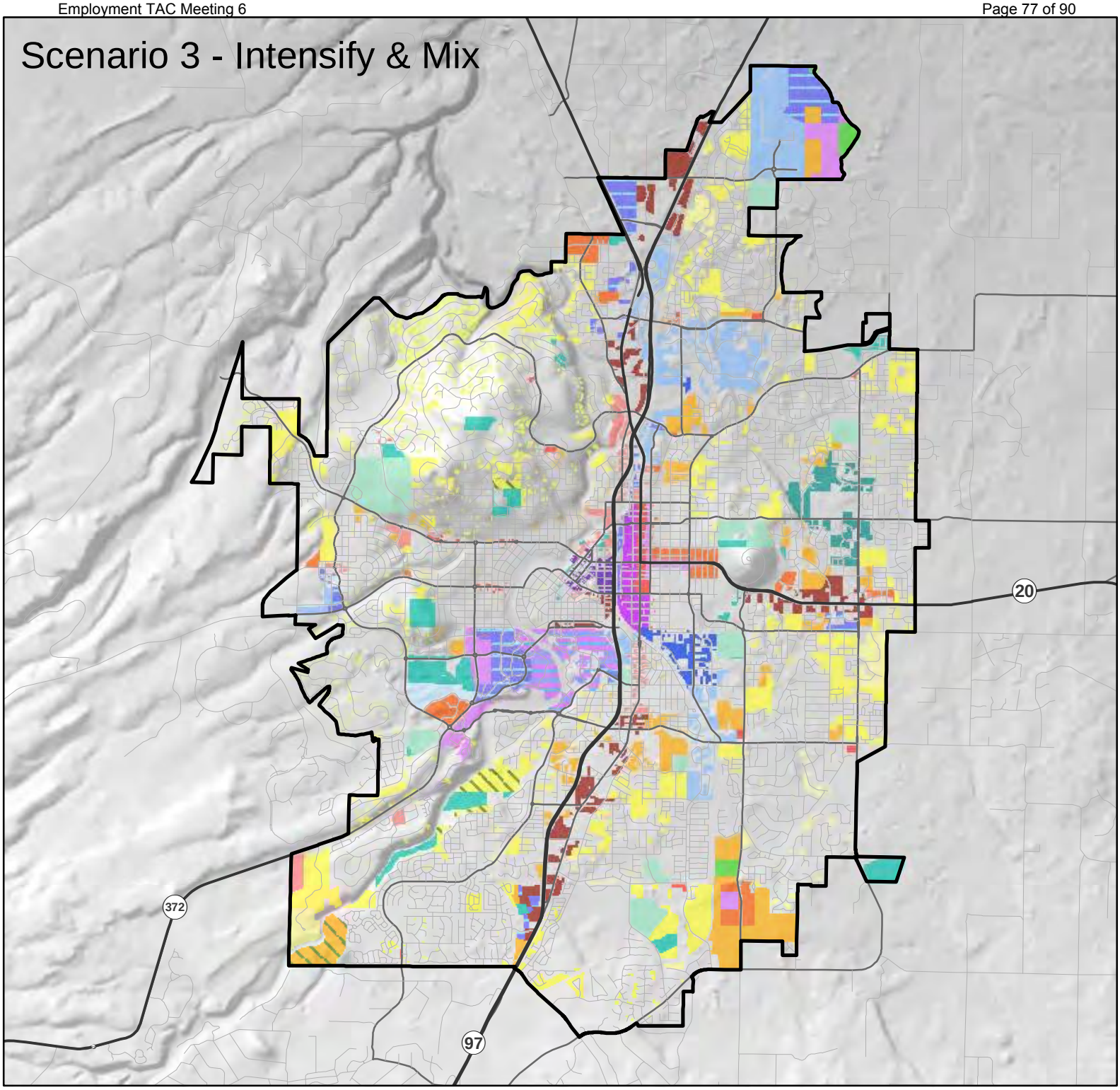
- RS - Residential Urban Standard Density
- RS Hillside - Residential Urban Standard Density on Hillside
- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Scenario 3 - Intensify & Mix



Urban Growth Boundary
State Route

Scenario 3 - Existing Policies

Mixed Use
- CB - Central Business District
- MU 2 - Urban Mixed Use District
- MU 1 - Neighborhood Mixed Use District
- MDOZ - Medical District Overlay Zone
- MR - Mixed Riverfront
- ME - Mixed Employment

Commercial
- CC2 - Commercial Prime
- CL - Commercial Limited
- CG - Commercial General
- CC - Commercial Convenience

Industrial
- IG - Industrial General
- SM - Surface Mining
- IP - Industrial Park
- IL - Industrial Light

Residential
- RH - Residential Urban High Density
- RM Masterplan - Residential Urban Medium Density
- RM - Residential Urban Medium Density
- RM for jobs - Residential Urban Medium Density with Jobs
- RM Hillside - Residential Urban Medium Density on Hillside
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- RS - Residential Urban Standard Density
- RS Hillside - Residential Urban Standard Density on Hillside
- RS-CCR - Residential Urban Standard Density with CCR
- RL - Residential Urban Low Density

Other
- Park
- PF - Public Facilities
- University
- School
- Institutional
- Urban Area Reserve

Appendix F: DRAFT BLI Information

INTRODUCTION

This appendix provides information pertaining to the background, process, and results of the Bend UGB Remand Buildable Lands Inventory. **The contents of this appendix are draft and subject to change.**

Remand Issues and Past Work

The Bend Urban Growth Boundary Remand (Remand) required the City to make a number of changes to the way residential land was classified for the purposes of the buildable land inventory (BLI) and the way the capacity of that land was estimated (Sub-issue 2.2). The City of Bend's planning staff has done a significant amount of work to address the issues raised in the remand related to the BLI. That work is summarized in a memorandum to the Urban Growth Boundary (UGB) Remand Task Force from August 2011, updated in January 2014. That memorandum is included in an Appendix as a reference, but key points from it are summarized below.

Definitions and Categories

In reviewing the BLI adopted in 2008, much of the Department of Land Conservation and Development's (DLCD) concern centered on the City's interpretations of categories of land to be included in the inventory. In the remand order, the Land Conservation and Development Commission ruled that the City's categories were not consistent with state law. Except for "Redevelopable Land," the terms used in state law (above) for the categories of land to be included in a BLI are not defined. (Even the definition of "Redevelopable Land" is open to interpretation.) To ensure that on remand the correct categories would be used by the City in the revised BLI, City staff contacted DLCD staff for more specific guidance on how to define the categories of potentially buildable land within the UGB. Through a series of e-mail exchanges, DLCD staff provided their interpretations of state law in the form of definitions that could be used to conduct a GIS parcel-based analysis of every acre of residentially planned or zoned land in the Bend UGB.[1]

Below are the categories and definitions established in coordination with DLCD:

[1] E-mail from Gloria Gardiner, DLCD, to Damian Syrnyk, October 21, 2010. See also e-mail response from Gloria Gardiner, DLCD, to Karen Swirsky, dated June 9, 2011.

- **Vacant** (Completely) – Land planned or zoned for residential use that has $0 in improvement value. Properties that are planned or zoned for residential use, but are dedicated for other uses such as parks, common areas, rights of way or utilities are excluded. Publicly owned land is also excluded.
- **Lots Large Enough for Additional Units under Current Zoning ("Partially Vacant")** – Land planned or zoned for residential use that has an improvements value greater than $0, but contains fewer dwelling units than permitted in the zone. Based solely on lot size, additional units could be built on the site, but the lot is not large enough to further divide.[2]
- **Developed** – Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the zone, and the size of the lot does not allow for further division. (Residentially zoned land that is currently developed with employment uses is categorized as Developed.)
- **Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential")** – Land planned or zoned for residential use that is currently developed, but where the lot is large enough to further divide consistent with its current zoning, based on the minimum lot size of the applicable zone. As with Partially Vacant land, this category does not consider limiting factors such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot.

In addition to the four categories above, the city must consider whether developed land may be redevelopable within the planning horizon. Land may be considered redevelopable only if there exists "the strong likelihood that existing development will be converted to more intensive residential uses during the planning period."

Exclusions

In 2008, the city identified certain categories of parcels as unbuildable in the BLI, including:

- lots and parcels smaller than 0.5 acres with no improvements;
- lots and parcels subject to private, Covenants, Conditions and Restrictions (CC&Rs); and
- lots and parcels with physical constraints over 50 percent or more of the lot.

[2] To identify partially vacant lands, city staff calculated the maximum number of units that could be built on each developed parcel that was not large enough to divide, based on the maximum density allowed per the development code and the parcel size. The number of existing units was then subtracted from the maximum number of units allowed. If one or more new units could be accommodated, the parcel was categorized as partially vacant. (Considerations such as setback and frontage requirements, lot coverage, or location of the existing unit on the lot were not considered, although those will be limiting factors in many cases.)

The Remand required the city to include vacant lots and parcels under 0.5 acres, to include land subject to CC&Rs "unless it adopts specific findings, supported by an adequate factual base, that show why the lands are not available for development or redevelopment during the planning period," and to reexamine the land identified as "constrained" to determine whether the remainder of the lot is buildable.[3]

The City has agreed to include vacant lots and parcels under 0.5 acres and to exclude only the portion of a lot that has physical constraints on it, leaving the remainder. The City has also conducted research on CC&Rs in effect on subdivisions within the UGB to determine whether and to what extent they restrict further development and infill.

State Statute and Administrative Rules

Oregon state statute and administrative rules require local governments to produce a local buildable lands inventory as part of preparation of a Housing Needs Analysis. That BLI "must document the amount of buildable land in each residential plan designation."[4] (A similar inventory is required for employment land as part of preparation of an Economic Opportunities Analysis; however, the requirements for each are different. This memorandum is focused on the Residential BLI.)

State statute identifies the following categories of buildable lands:[5]

> *(A) Vacant lands planned or zoned for residential use;*
>
> *(B) Partially vacant lands planned or zoned for residential use;*
>
> *(C) Lands that may be used for a mix of residential and employment uses under the existing planning or zoning; and*
>
> *(D) Lands that may be used for residential infill or redevelopment.*

It further requires that the local government "demonstrate consideration of:"[6]

> *(A) The extent that residential development is prohibited or restricted by local regulation and ordinance, state law and rule or federal statute and regulation;*
>
> *(B) A written long term contract or easement for radio, telecommunications or electrical facilities, if the written contract or easement is provided to the local government; and*

[3] LCDC Remand Order, page 26.

[4] OAR 660-008-0010

[5] ORS 197.296(4)(a)

[6] ORS 197.296(4)(b)

(C) The presence of a single family dwelling or other structure on a lot or parcel.

The state further defines buildable land in the context of a Residential BLI as follows:[7]

(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.

(6) "Redevelopable Land" means land zoned for residential use on which development has already occurred but on which, due to present or expected market forces, there exists the strong likelihood that existing development will be converted to more intensive residential uses during the planning period.

Updates to the 2008 BLI

When the UGB Remand Task Force began work on the Remand issues, it was initially decided to continue to rely on 2008 data wherever possible, including using 2008 data as the basis for the revised BLI. Thus, when the City began work to reclassify land according to the categories identified above, it did so using the original 2008 parcel database.

However, given the amount of time that has elapsed since then, the City has decided to update the BLI to rely on 2014 data in order to more accurately reflect conditions on the ground. The City has completed the initial steps of this update, identifying the following characteristics for all taxlots within the existing UGB based on July 2014 parcel data from Deschutes County:

- current zoning and general plan designation, including special plan districts;
- current property use information (based on a combination of property class and structure codes from the County Assessor's Office data, City building permit data, aerial photography, and existing City parcel inventory data);
- size and value of existing improvements;
- number of existing housing units;

[7] OAR 660-008-0005(2)

- area subject to physical constraints (25% or greater slopes and 100-year floodplain)[8];
- whether the lot size is more than double the minimum lot size for the zone;
- maximum number of units allowed by current zoning based on lot size and maximum density for the applicable zone/plan designation; and
- public agency ownership (City, County, State, Federal, College District, Irrigation District, Parks District, School District, and Other Special District).

TAC DIRECTION ON BLI ISSUES

The next step was utilizing the information mentioned above to assign a development status to each parcel (using the definitions above). Doing so required the resolution of a number of issues on which the TAC provided direction. These issues are described in the table below.

BLI Issue	Date Addressed	Resolution
CC&Rs	(10/13/14)	Categorize as fully developed all lots and parcels with CC&Rs identified as restrictive of infill potential, even where minimum lot sizes are large enough to allow land division under the current zoning.
Conflicts between plan designation and zone	(11/10/14)	Considered all land with residential plan or zone designations to be part of residential BLI, excepting: - Rely on plan designation with UAR land - Exclude Surface Mining (SM) land (plan or zone) unless specific information indicates that the land will be available for residential uses
Commercial and Mixed Use Zones and Designations	(11/10/14)	Assumed that ME and PO designations are solely employment land and do not provide housing capacity Assume mix of uses in MR zone. For base case, rely on historical trends to establish estimate for housing development. CB and CL zones where there has been at least some residential development, assume potential for some additional residential development. For the base case, rely on historical trends to establish estimate for housing development in each zone.
Medical District Overlay Zone (MDOZ)	(11/10/14)	Treated land in MDOZ as employment land. Estimate potential for housing
Definition of public land	(10/13/14)	Consider land owned by all entities identified as meeting the test of public land, including irrigation districts. Do not consider the other entities as "public". (Given the small amount of land involved for most

[8] See OAR 660-008-0005(2)(c) and (2)(d).

		of the questionable entities, the impact to the BLI either way is small.) Make exceptions for land where specific information indicates that the land is likely to be converted to residential uses within the planning horizon on a case-by-case basis.
Common Areas & Private Open Space	(10/13/14 and 11/10/14)	Treat canals, cemeteries, and private roads as fully developed. Treat golf courses and RV parks as developed unless specific information suggests that they are likely to be converted to residential uses. For common areas, assume that those owned by an HOA or similar organization and those that are part of an approved subdivision are developed. Assume other private open space is vacant in the absence of specific information indicating that it is not available for residential use.
Golf Courses	(11/10/14)	Undeveloped portion of Back Nine golf course considered vacant, all other golf courses considered developed.

BLI RESULTS

Tables

The following table describes the DRAFT BLI status of residential land within the City of Bend. Results are subject to change.

Residential BLI Designation	Approx. # of Parcels*	Total Acres
Developed	28,312	9,154
Lots Large Enough to Divide Under Current Zoning ("Developed with Infill Potential")	4,621	2,569
Lots Large Enough for Additional Units under Current Zoning ("Partially Vacant")	827	93
Publically Owned	844	10
Vacant	3,221	2,151
TBD *(These are split-zoned parcels, or parcels partially outside UGB)*	7	10
TOTAL	38,908	17,559
** This number is approximate because some large parcels were split for use in Envision Tomorrow. Final numbers will be provided as part of the final BLI package.*		

Employment BLI Designation	Approx. # of Parcels*	Total Acres
Developed	3,859	3,157
Vacant	335	1,013
TOTAL	4,194	4,169
** This number is approximate because some large parcels were split for use in Envision Tomorrow. Final numbers will be provided as part of the final BLI package.*		

Maps

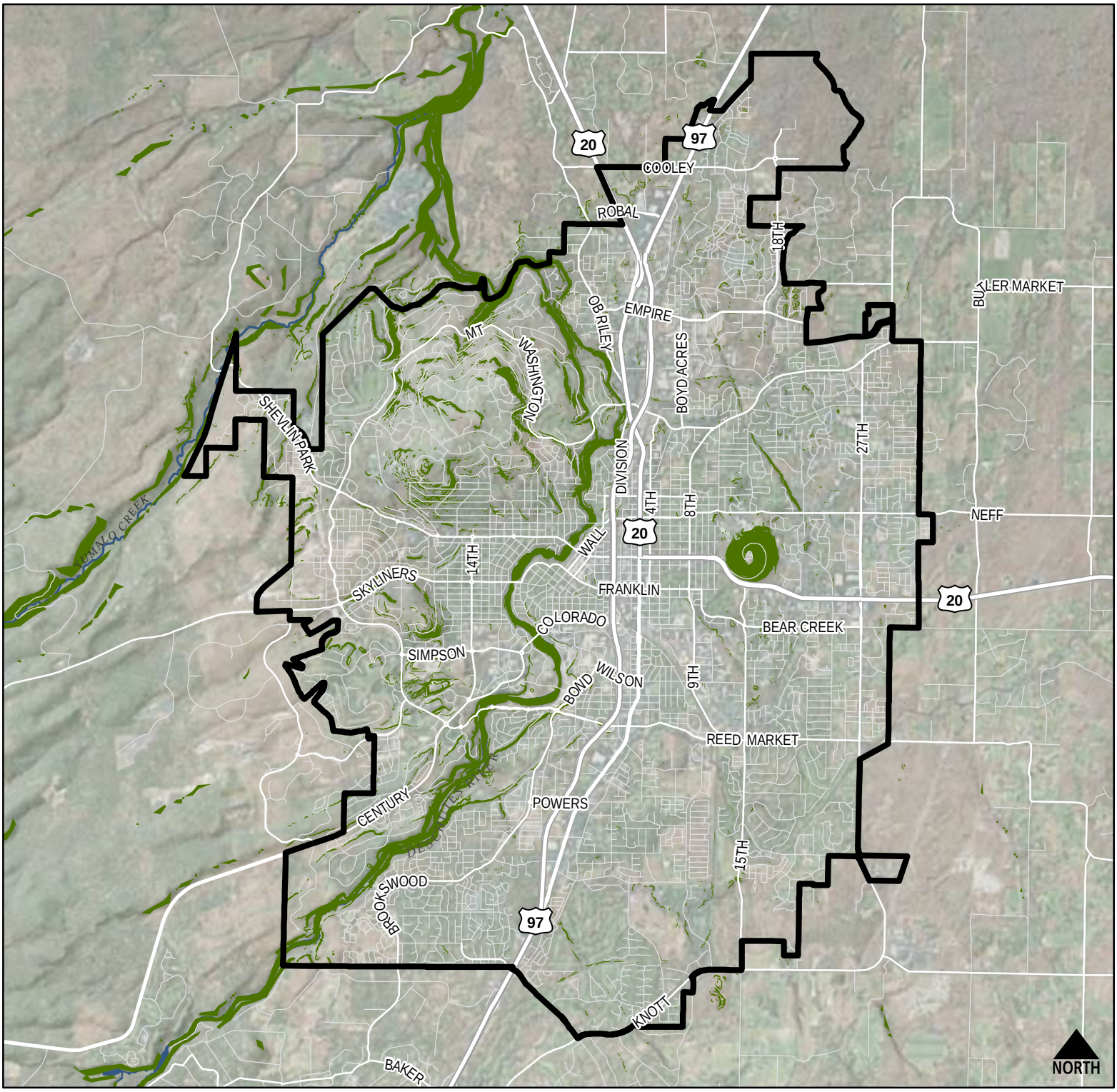
The attached maps depict draft Residential and Employment BLI assumptions and designations in the City of Bend.

DRAFT Buildable Lands Inventory - Constraints

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Constraints
Roads/Highways

Constraints include 100-year flodplain and slopes greater than 25% (per OAR 660-008-0005(2)(c)

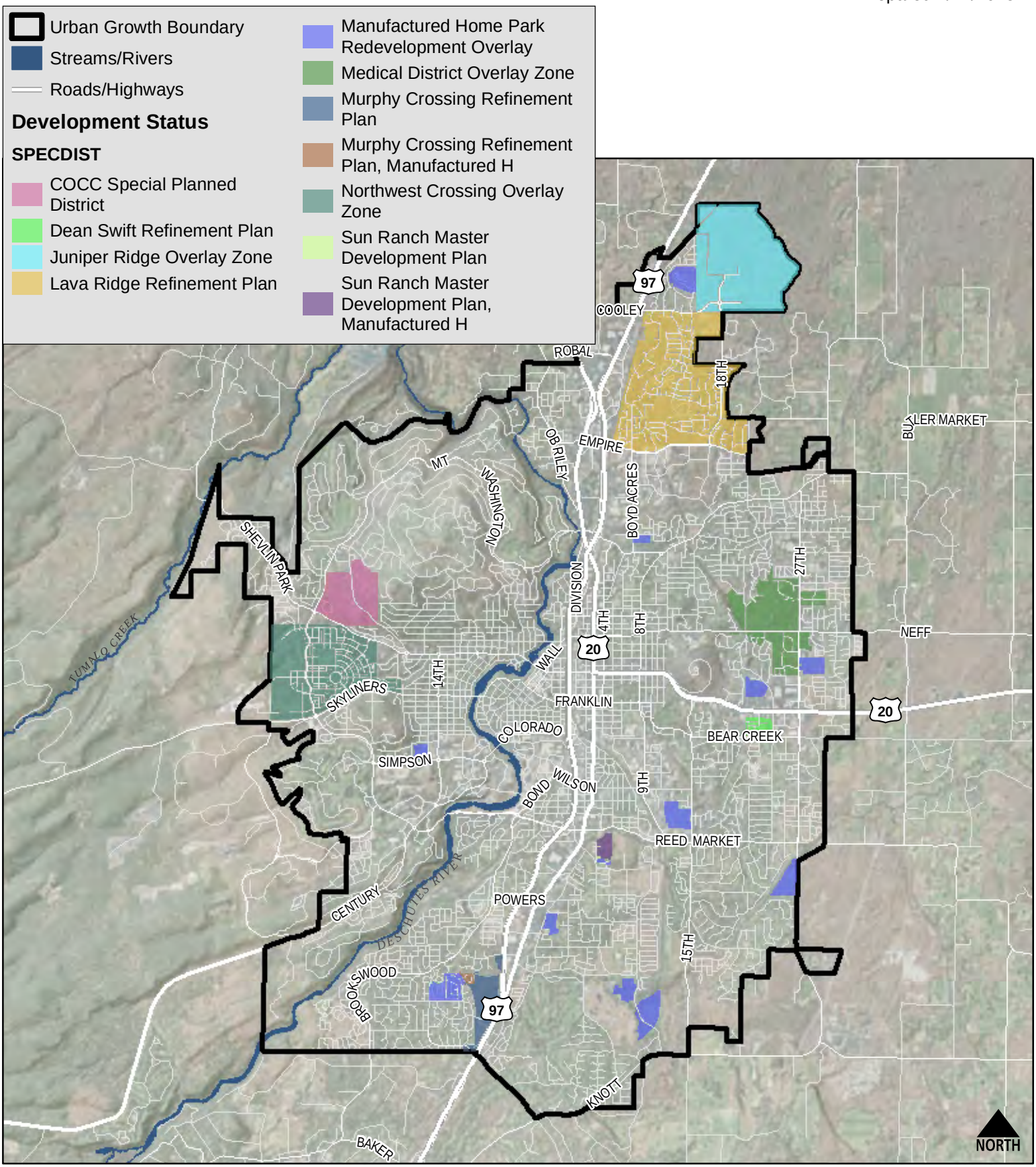


URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2 Miles

DRAFT Buildable Lands Inventory - Special Districts

Prepared 1/21/2015



URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2 Miles

03163

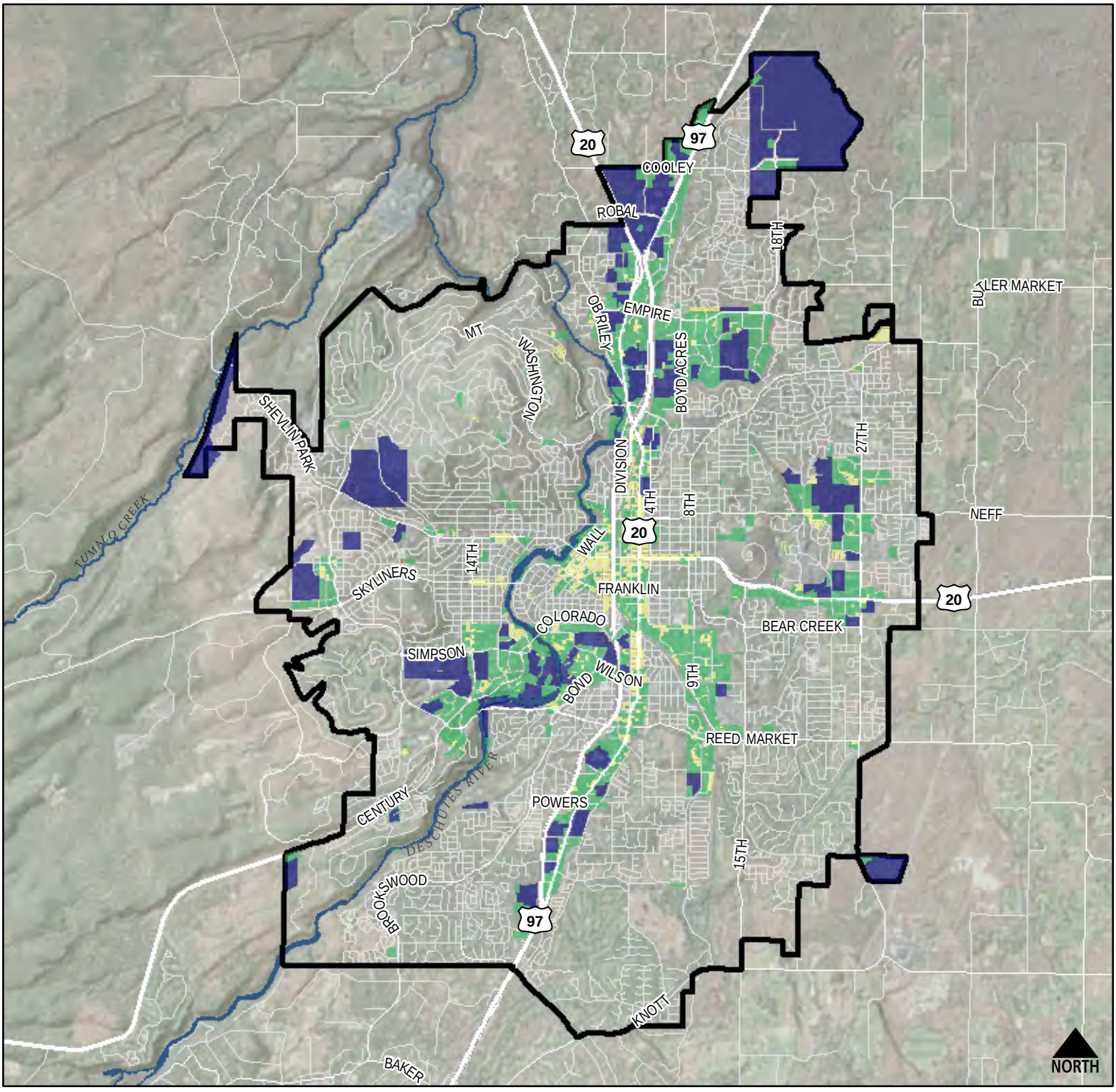
DRAFT Buildable Lands Inventory - Employment Parcel Size

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Roads/Highways

ACRES
0.000080 - 0.500000
0.500001 - 5.000000
5.000001 - 202.719376

Employment Lands include all land planned or zoned for employment use (including mixed use designations & zones). Detailed methodology will be provided in an additional memorandum.



URBAN GROWTH BOUNDARY REMAND

OAR 660-009-0005 defines employment lands as follows:
"Vacant Land" is equal to or larger than 1/2 acre not currently containing permanent improvements, or; equal to or larger than 5 acres where less than 1/2 acre is occupied by permanent bildings or improvements.

0 0.5 1 2 Miles

03164

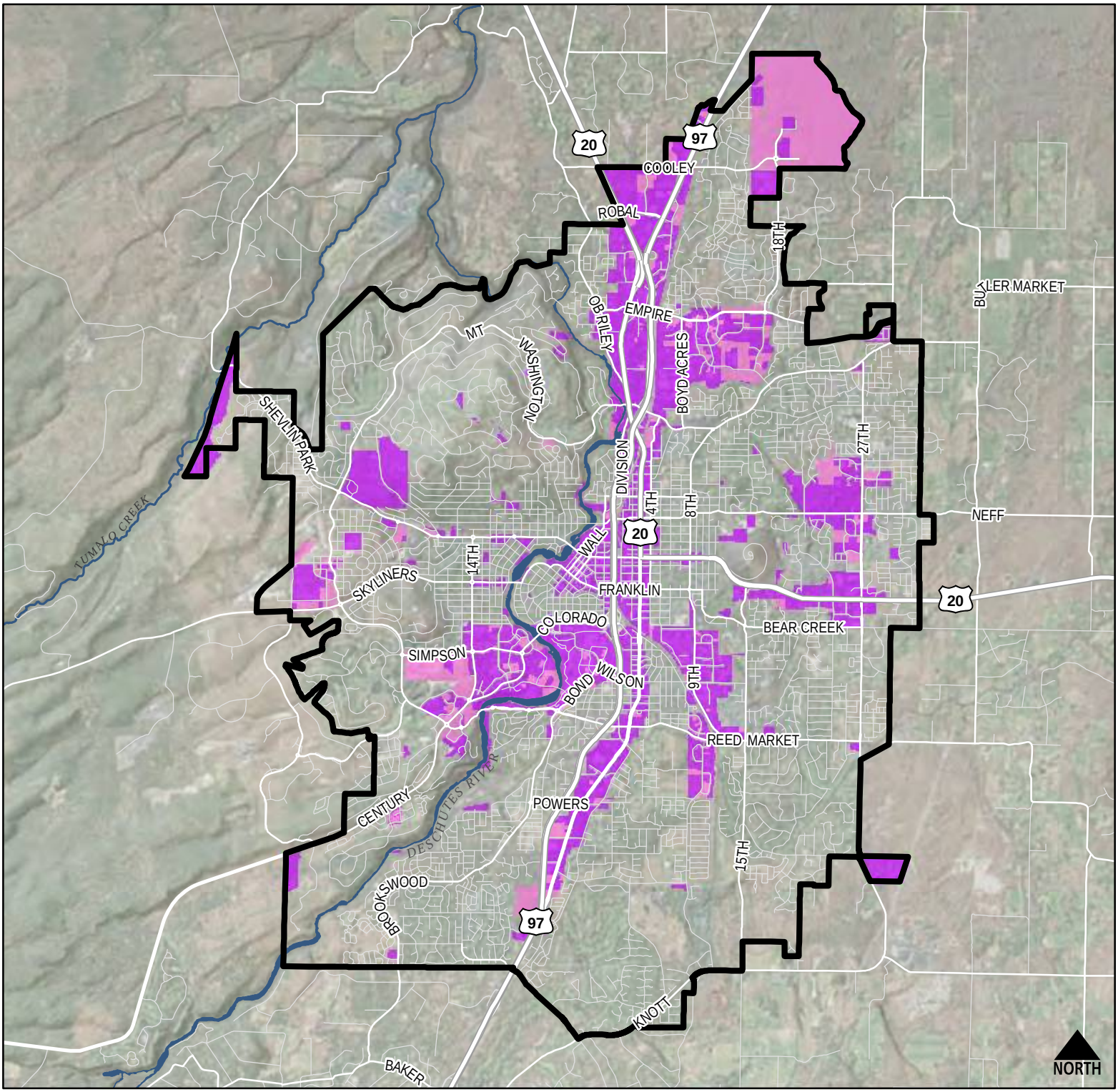
DRAFT Buildable Lands Inventory - Employment

Prepared 1/21/2015

Urban Growth Boundary
Streams/Rivers
Roads/Highways

Development Status
Developed
Vacant

Employment Lands include all land planned or zoned for employment use (including mixed use designations & zones). Detailed methodology will be provided in an additional memorandum.



URBAN GROWTH BOUNDARY REMAND

OAR 660-009-0005 defines employment lands as follows:
"Vacant Land" is equal to or larger than 1/2 acre not currently containing permanent improvements, or; equal to or larger than 5 acres where less than 1/2 acre is occupied by permanent bildings or improvements.

0 0.5 1 2 Miles

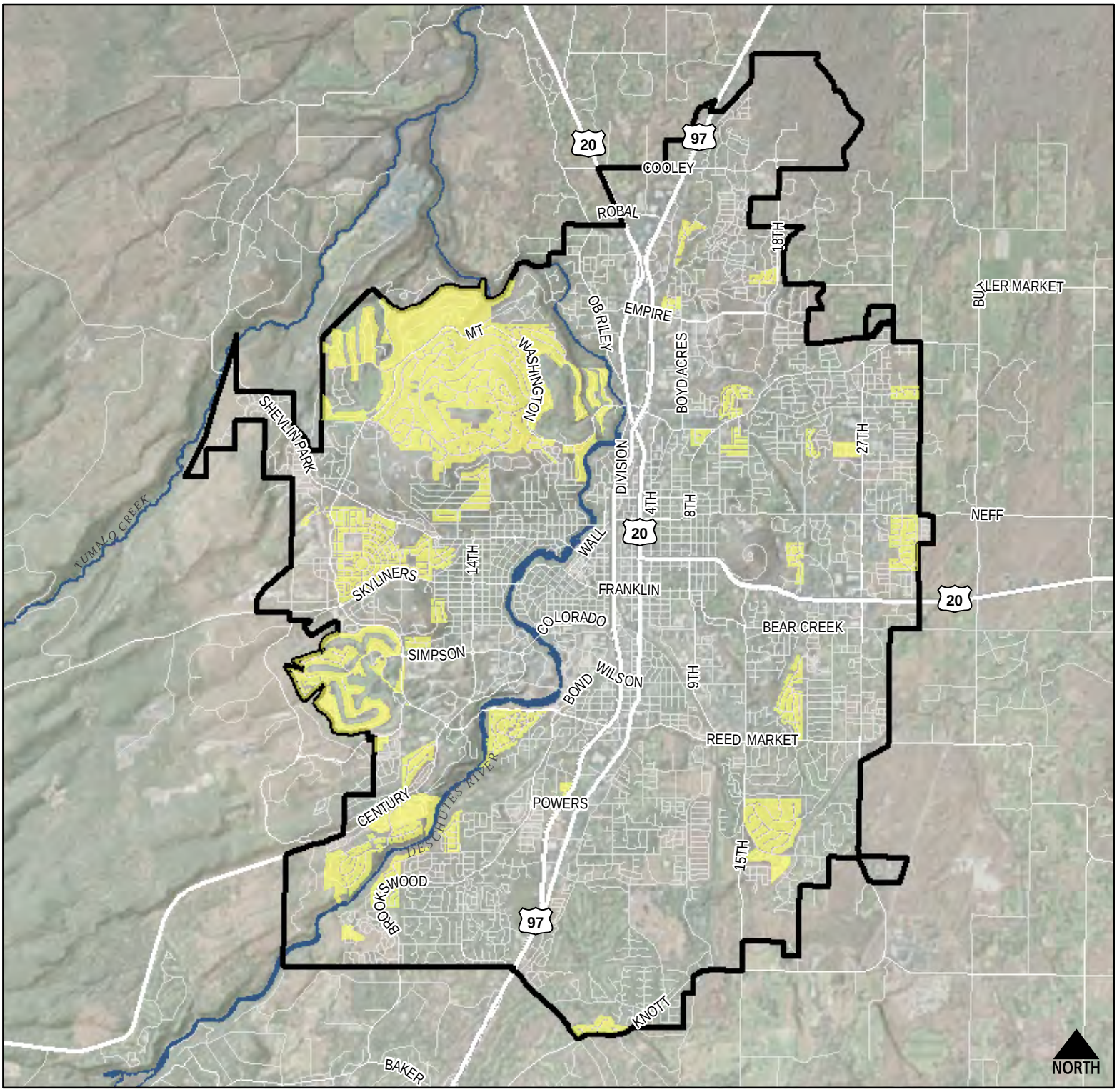
DRAFT Buildable Lands Inventory - Constraints

Prepared 1/21/2015

CCRS

- Land with Restrictive CC&Rs
- Urban Growth Boundary
- Streams/Rivers
- Roads/Highways

CC&Rs limit the development/redevelopment of land. This attribute was populated by APG based on information provided by the City of Bend regarding presence and restrictions in CC&Rs by subdivision. CC&Rs were assumed to apply to all phases of a given subdivision unless information to the contrary was available.



URBAN GROWTH BOUNDARY REMAND

0 0.5 1 2 Miles

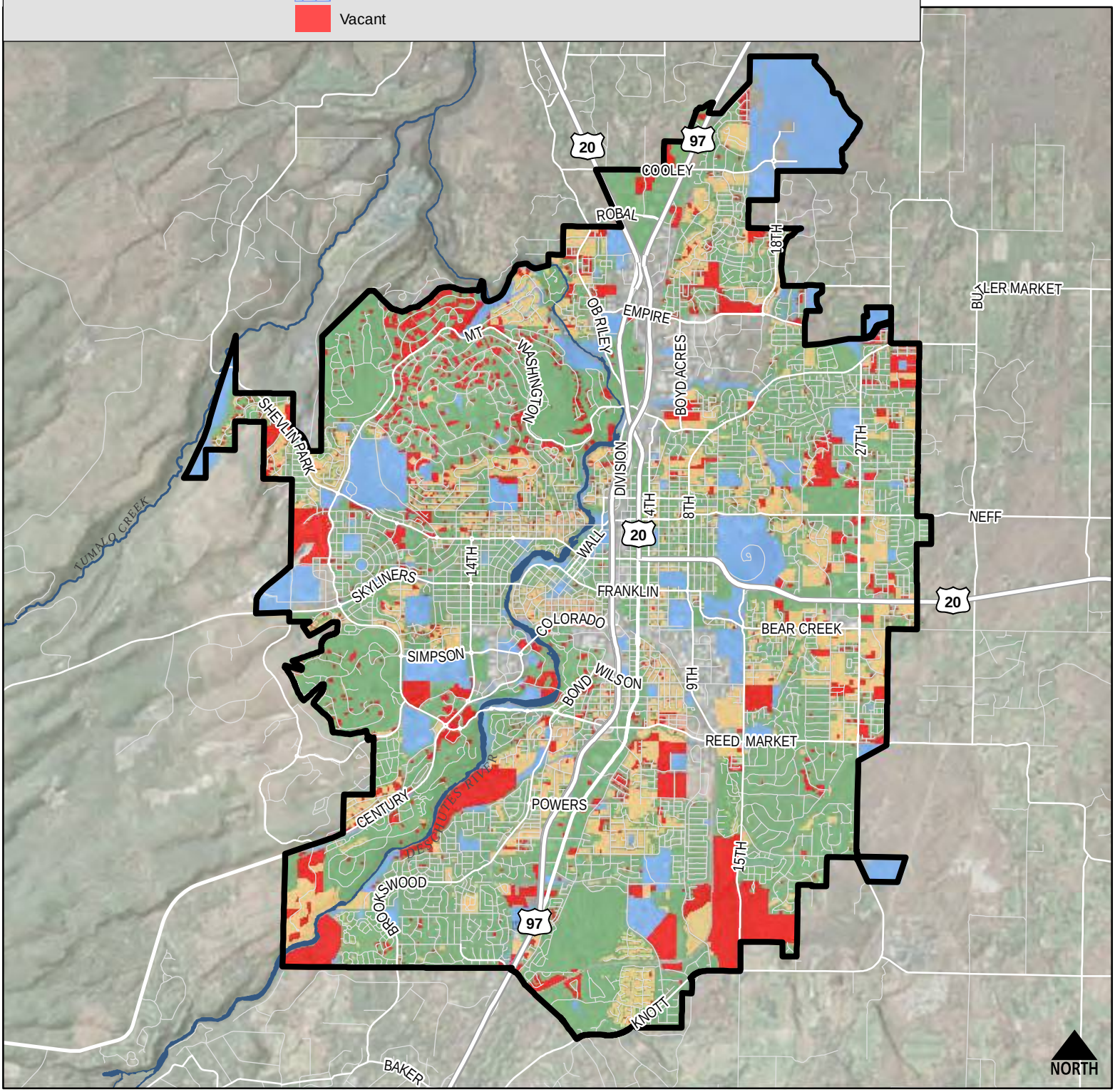
DRAFT Buildable Lands Inventory - Residential

Urban Growth Boundary
Streams/Rivers
Roads/Highways

Development Status

- Developed
- Lots Large Enough to Divide under Current Zoning ("Developed with Infill Potential")
- Lots Large Enough for Additional Units Under Current Zoning ("Partially Vacant")
- Publicly Owned
- TBD (Split-Zoned and Other Special Cases)
- Vacant

Prepared 1/21/2015
SUBJECT TO CHANGE



URBAN GROWTH BOUNDARY REMAND

Residential Lands include land in residential comprehensive plan categories and land with a residential zone category, except for land in the Medical District Overlay Zone (MDOZ) and land with a Surface Mining (SM) plan or zone designation. Detailed methodolgoy will be provided in an additional memorandum.

0 0.5 1 2 Miles

03167

City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting Notes
Meeting #6
Date January 27, 2015

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday, January 27, 2015 in the City Hall Council Chambers. The meeting was called to order at 10:02 am by Sharon Smith.

Roll Call

- ☐ Toby Bayard
- ☐ Susan Brody
- ☐ Jim Bryant
- ☐ Paul Dewey
- ☐ John Dotson
- ☐ Scott Edelman
- ☐ Ellen Grover
- ☐ Nick Lelack
- ☐ Brian Meece
- ☐ Charley Miller
- ☐ Mike Riley
- ☐ Ron Ross
- ☐ John Russell
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Dale Van Valkenburg
- ☐ Robin Vora
- ☐ Ruth Williamson

Discussion

1. Welcome

Sharon called the meeting to order at 10:02 a.m. The first order of business was approval of prior meeting minutes from the October 14, November 18, and December 16, 2014 Boundary TAC meetings.

Sharon asked for a motion to approve the Meeting #3 (October 14, 2014) meeting minutes. Susan Brody commented that she did attend this meeting and that the meeting minutes so reflect, along with John Dotson. Dale moved approval of the October 14, 2014 meeting minutes with the addition of Susan and John Attending. Ellen seconded the motion. Motion passed unanimously.

Dale them moved approval of the Meeting #4 (November 18, 2014) minutes; Toby seconded the motion. Motion passed unanimously.

For Meeting #5, Mike Riley requested clarification that on page 2 of 4, the minutes reflect that the TAC approved by answering yes to the questions on page 16 of the packet. John Russell moved approval of the minutes with this change, Rod seconded. Motion passed unanimously.

Brief update from other TACS

Dale provided an update from yesterday's (1/26/2015) Residential TAC meeting. The TAC decided on how to account for growth in housing between 2008 and 2014. The TAC approved an approach with four voting against. The Residential TAC also reviewed maps of scenarios for growth inside the city, with discussion of whether potential measures are feasible to achieve more efficient use of and in the UGB. The additional discussion on the Residential TAC touched on the mix of housing moving forward after the 2008 to 2014 period, and how the proportion of 55% in the mix will be achieved.

Brian Meece provided a report from the 1/26/2015 Employment TAC Meeting. The Employment TAC reviewed similar data, including job growth between 2008 and 2014. The TAC is starting to look at

need from the employment side. The consultant team gave the Employment TAC the same presentation the Residential TAC saw earlier in the day. The additional discussion of the Employment TAC meeting touched on whether certain scenarios were too aggressive or ambitious, review of parking standards and changes to them as an efficiency measures, and possibly considering changes to parking standards in areas that are more walkable.

Update

Joe Dills then provided a quick update to the Boundary TAC on where we are in the process. He provided a chart that was handed out and pointed out this will be critical for organizing work this year. Looking forward, the work completed so far will be rolled up into a package for TAC approval by end of February. This package would then be a recommendation from the Boundary TAC to the USC.

Brian Rankin added that the TAC will review a Goal 5 scoping memo in February and working to include experts on wildfire in the presentation.

The remaining discussion from the TAC included questions on how the TAC will operate in the next phase, how mix of housing will affect the mapping of water and sewer service and whether they are adequate for any changes in density, and how the TAC works with the public in Phase 2.

2. Follow up from December meeting – Revised Stage 2 Base Maps for Factor 1 (Efficiency)

Mary Dorman gave a presentation that began with reviewing a diagram of the project schedule. She recapped the work the TAC reviewed at their December 2014 meeting, and highlighted the maps they would review today. Her presentation included several maps, beginning with page 42 of the packet. These maps included Improvement to Land Value and CCRs. The map on CCRs generated several questions of whether all subdivisions outside UGB that also had CCRs were accurately reflected on the map. The TAC further discussed the level of analysis performed on the CCRS, whether they are enforceable, whether it's impractical to assume redevelopment of an existing subdivision, and the amount of HOA member support needed to approve a change in CCRs.

The question was then posed to the TAC whether to move ahead with the maps shown in the packet starting at page 42 (top left). Susan moved approval, Toby seconded. All voted in favor, no opposed, with only Scott abstaining.

3. Recommended Stage 2 Base Maps for Factor 2 (Orderly & Economic Facilities)

Transportation.

Chris Maciejewski of DKS and Associates gave a presentation of the transportation mapping completed for Stage 2. Mary Dorman directed the TAC to the report starting at page 72 (top left) of the packet. Chris provided the TAC some background on transportation planning, referring to the Functional Class map as an example of a long range plan that is in place for existing UGB. Referenced MTP recent update and adoption. He confirmed the 2013 TSP has been acknowledged, referred to his memo to the TAC, and briefly described the metropolitan planning organization (MPO) and its funding sources. He further discussed the most recent work to update the metropolitan transportation plan (MTP) and the assumptions that went into it. He concluded by noting the city's roadway system is well funded, the state's system has major funding deficiencies before reviewing the following transportation maps on pages 72 through 74 with the TAC.

> Pages 72 of packet – Physical Barriers to Connectivity. This map identified what's already developed, not what's considered, with a focus on topographical any physical constraints. TAC questions on this

map focused on the northeast and why not moderate, railroad tracks, and the potential need for an interchange in the northeast. Direction to revise map in the northeast; canal may be an issue.

Page 73 of packet – 2040 Exception Land Reliance on Congested Corridors (aka Bottlenecks). This map was a revised version of prior map shared with TAC, including exception land and their reliance on congested corridors (2040 horizon year). The MTP work related to this identifies areas with reasonably funded fixes. The areas in green are less reliant on congested corridors, based on number of trips in the peak hours. The TAC discussion on this map included question on the map's utility – what does it tell us? Chris pointed out that it can be used as a cost indicator – with potential for evaluating mitigation.

Page 74 of packet – Connectivity to Complete Roadway Grid. This map examined where future arterials and collectors will go in a UGB expansion. Green represents a grid looks feasible, although it's not necessarily there. See also page 60 of the packet.

The TAC provided this direction on the Transportation maps. 1. First map (page 72) NE quadrant has a minimum physical barrier. 2. Umbrella understanding that we when get to evaluating a subarea, the ratings shared today may change; small areas may have unique conditions. 3. Information is at a high level now for scenario evaluation. We'll need to drill down later.

Motion requested – TAC recommends using these maps on transportation in Stage 2. Rod made the motion with Susan providing a second. All voted in favor, no in opposition, with Dale and Paul abstaining.

Water.

Dave Stangel of Murray Smith and Associates (MSA) gave a presentation that focused on maps at pages 63 and 75 of the packet. He also referred the TAC to a memo he prepared for the meeting packet. The focus of this analysis was identifying areas that could be served by the City's outback facility. Questions from the TAC included clarification of the base – blobs or parcel level – and the purpose of the 3,900' elevation for gravity.

Jason Wick of Avion Water Company provided additional data for those parcels of land in the study area already served by Avion Water Company. Jason provided a map of Avion's service area. The Ward property at China Hat and Knott Road would need boosting. Going north (east of Bend) to Butler Market Road the system is gravity fed. Avion's service area north of Butler Market Road needs boosting during the summer months. Buck Canyon Road also needs boosting during the summer months. All of Avion's water is ground water. Energy costs would be incremental in boosting water.

The TAC discussion on water questioned whether there was a limitation to the amount of water we have access to? Jason clarified that Avion is well placed with water rights. Avion also has a new reservoir at Butler Market and Hamehook Roads.

Question put to the TAC here was whether to advance MSA's and Avion's maps to guide Stage 2 evaluation. Discussion on this noted to bring Roads into discussion on infill. Dale moved approval of city maps, with Toby providing second. A friendly amendment was offered to include Avion's map in the motion and it was included without opposition. Motion passed unanimously.

Sanitary Sewer

Dave Stangel of MSA then gave a presentation on the City's recently approved collection system master plan (CSMP). He noted a few members of the City's Sewer Infrastructure Advisory Committee (SIAG) were in the audience, and referred the TAC to page 76 of the meeting packet.

The map shown today was the map included in the City's capital improvement plan. Dave summarized the major projects, and noted that an optimization approach was used to right size the needed improvements.

The TAC discussion on this map included questions on the rating of certain areas, planned improvements that would ameliorate these deficiencies, the timing of improvements, and the density assumptions included in the analysis. Tom Hickman of the City of Bend further noted that capacity of the system's plant interceptor is currently an issue and being addressed.

The motion was put before the TAC to recommend using the map at page 76. Tobey made the motion with Mike providing a second. The motion passed unanimously with no votes in opposition or abstention.

Stormwater

Mary Dorman followed up the presentation on this topic from the last TAC meeting with the map shown at pages 77 through 79 of the packet. Regarding the Drinking Water Protection Areas map (See page 78), Mary and Tom Hickman provided some examples of ground water contamination. The City has to address drill holes and underground injection controls (UIC's). The areas with drill holes and UIC's are shown in red on the DWPA map. The maps were presented as a package (pages 77 through 79) for TAC approval. The TAC discussion included question as to the utility and relevance to future work? The data on these maps can help identify what potential land uses may be located in areas included in the UGB.

Additional TAC discussion on the stormwater maps touched on water quality limited streams, and considering these limitations when looking at future land use patterns. The Department of Environmental Quality (DEQ) has not promulgated total maximum daily loads (tmdl's) for the streams in the study area. City should look at water quality factors and coordinate this with DEQ.

Joe gave the team recommendation on advancing the maps into Stage 2. John Dotson so moved with Gary Timm providing a second to the motion. The motion passed unanimously with John Russell abstaining on the second map at page 78 of packet. Final discussion on these maps was to include data from maps at pages 78 and 79 of the packet in future ESEE analysis. With respect to water quality limited streams, consider at Stage 4 evaluation; bring back map with water quality limited streams for information and to help future discussion. No vote on the bottom of page 31 of the packet regarding the team recommendation for water quality limited streams – roll this into the Goal 5 discussion. The team had recommended dropping proximity to water quality limited streams as an indicator for "orderly and efficient stormwater" facilities.

4. Recommended Stage 2 Base Maps for Factor 4 (Compatibility with Resource Activities Outside UGB)

Mary directed the TAC to maps presented at pages 82 through 84 of the packet. Maps at pages 83 and 84 identify locations of exception lands in relation to exclusive farm use zoned lands and forest use zoned lands. The TAC discussion of these maps addressed irrigation districts and the functionality of their respective canal systems, the potential for smaller parcels of land engaging in commercial farm operations, and with respect to Goal 14 Factor 4 (Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB) that irrigation delivery may not approximate the use. The team and city need to look not just at lands zoned EFU, also look at MUA10 (Multiple Use Agricultural), irrigation deliveries, EFU tax deferral status.

Joe recommended closing on these maps and bringing forward supplemental information and thinking on this topic. John made this motion and Sharon provided a second to the motion. The motion passed unanimously.

No public comments were offered, and Joe informed the TAC the next meeting on February 24, 2015 would start at 9:00 am. Sharon adjourned the meeting at 12:30 pm.

Action Items/Next Steps

Action	Assigned To
Approve meeting minutes for:	
Meeting 3 (October 14, 2014)	Done
Meeting 4 (November 18, 2014)	Done

Meeting 5 (December 16, 2014)	Done
Approve use of transportation maps at pages 72 through 74 of packet for Stage 2	Done
Advance City and Avion Water maps forward for Stage 2 evaluation	Done
Advance City sewer map at page 76 forward for Stage 2 evaluation	Done
Advance City drinking water protection area map (page 78) and exception lands distance from DWPA (page 79) to stage 2	Done
Team recommendation to drop proximity to water quality limited streams as an indicator for "orderly and efficient stormwater facilities"?	Deferred - to be incorporated in work on Goal 5
Approve maps at pages 83 and 84 and advance forward for Stage 2 work	Done

Meeting adjourned at 12:30 pm by Sharon Smith.

URBAN GROWTH BOUNDARY REMAND

BEND

Sign in Sheet

Meeting: BOUNDARY TAC #6

Date: 1/27/15

Location: COUNCIL CHAMBERS

Name	Organization	Email Address
ROD TOMCHO		RTOMCHO@TOWNANDDEVELOPMENTS.COM
Toby Bayard	N/A	tobybayard@hotmail.com
Dale VanValkenburg		
Ron Ross		
Sid Snyder		on file
Chris Schmoyer		
Jim BRYANT	ODOT	
ANDREW MORTENSEN	DAVID EVANS	AJMO@DEA.INC.COM
Ruth Williamson	BZ030	
Rondo		ron.boozell@gmail
Gary Vodden		randal.rri@gmail.com

Meeting Agenda

Urban Growth Boundary Technical Advisory Committee – Meeting 6
Tuesday, January 27, 2015 10:00 AM – 12:30 PM
City Council Chambers, Bend City Hall

Meeting Purpose and What is Needed from the TAC

The purposes of this meeting are to:

- Review edits to Stage 2 Base Maps for Factor 1 of Goal 14 (Efficiency) - preliminary approval of maps at TAC Meeting 5
- Review and preliminary approval of Stage 2 Base Maps for Factor 2 of Goal 14 (Orderly & Economic Public Facilities)
- Review and preliminary approval of Stage 2 Base Maps for Factor 4 of Goal 14 (Compatibility with Activities on Resource Lands Outside the UGB)

The specific discussion questions, i.e. the feedback we would like from the TAC, are listed in the memo. Joe Dills will facilitate the meeting using the questions in the memo and the Stage 2 base maps included in the Appendices. References to packet page numbers (top right corner) are provided in the memo.

1. Welcome — 10:00 AM

a. Welcome and convene — Co-chairs

b. Approval of minutes (attached)
   - Meeting 3 - October 14, 2014 – see page 5 of packet
   - Meeting 4 - November 18, 2014 – see page 10 of packet
   - Meeting 5 – December 16, 2014 – see page 14 of packet

c. Where we are in the process – a brief look back and look forward — Joe Dills, Brian Rankin

2. Follow-up from December Meeting – Revised Stage 2 Base Maps for Factor 1 (Efficiency) — 10:15 AM

Information only

a. See updated Factor 1 maps in Appendix A – see page 41 of packet — Mary Dorman, APG

For additional project information, visit the project website at http://bend.or.us or contact Brian Rankin, City of Bend, at brankin@bendoregon.gov or 541-388-5584

Accessible Meeting/Alternate Format Notification
This meeting/event location is accessible. Sign and other language interpreter service, assistive listening devices, materials in alternate format such as Braille, large print, electronic formats, language translations or any other accommodations are available upon advance request at no cost. Please contact the City Recorder no later than 24 hours in advance of the meeting at rchristie@ci.bend.or.us, or fax 385-6676. Providing at least 2 days notice prior to the event will help ensure availability.

- Parcel size
- Improvement to land value
- Proximity to existing UGB
- Topography (25% slopes)
- Rural subdivisions with CC&Rs

3. Recommended Stage 2 Base Maps for Factor 2 (Orderly & Economic Facilities) — 10:30 AM

Discussion and action

a. Transportation — Chris Maciejewski, DKS
   - See DKS memo in Appendix C – page 55 of packet
   - See Stage 2 base maps for Transportation in Appendix E – page 72 of packet
   - See questions for TAC on page 25 of packet

b. Water — David Stangel, MSA
   - See MSA memo in Appendix D – page 64 of packet
   - See Stage 2 base map for Water in Appendix E – page 75 of packet
   - See questions for TAC on page 28 of packet

c. Sanitary Sewer — Jason Wick, Avion; Tom Hickmann, City of Bend
   - See MSA memo in Appendix D – page 64 of packet
   - See Stage 2 base map for Sewer in Appendix E – page 76 of packet
   - See questions for TAC on page 29 of packet

d. Stormwater
   - See discussion in memo – page 29 of packet
   - See Stage 2 base maps for Stormwater in Appendix E – page 77 of packet
   - See questions for TAC on page 31 of packet

4. Recommended Stage 2 Base Maps for Factor 4 (Compatibility with Resource Activities Outside UGB) — 11:45 AM

Discussion and action

a. See discussion in memo – page 32 of packet — Mary Dorman, APG
b. See Stage 2 base maps in Appendix F – page 82 of packet
c. See questions for TAC on page 35 of packet

5. Public Comment 12:15 PM

This is an opportunity for visitors to provide comments to the TAC

Updates from other TACs

6. Adjourn 12:30 PM

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City of Bend
UGB Remand Boundary Growth Scenarios Technical Advisory Committee
Meeting #3
Meeting Notes
Date: October 14, 2014

The UGB Remand Boundary Growth Scenarios TAC held its regular meeting at 10:00 a.m. on Tuesday, October 14, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 10:05 a.m. by Mike Riley, Chair.

Members Attending

- ☐ Paul Dewey
- ☐ Rockland Dunn
- ☐ Scott Edelman
- ☐ Ellen Grover
- ☐ Nick Lelack
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Dale Van Valkenburg
- ☐ Bruce White
- ☐ Ruth Williamson

Discussion

Welcome and Agenda Review. After the meeting was called to order, Dale Valkenburg gave an update on the Residential TAC meetings (RTAC), from October 9th & 13th, regarding Urban Form including BLI policy discussions – private open space, public open space, CCRs – point of diminishing returns – City staff will coordinate with TAC on correcting CCR spreadsheet and map. Most of RTAC meeting focused on efficiency measures discussion; RTAC reviewed 1.5 of 4 city quadrants. RTAC will meet earlier at 9:00 a.m. at next meeting as they were not able to finish on time.

Brian Meece attended the Employment TAC and updated the team on the Urban Form discussion which focused on centers and corridors. Most of meeting focused on redevelopment analysis of employment lands. A total of 13 potential areas were reviewed at a high level down with a good outcome. Several areas were agreed upon: Central Area plan, zone changes, and southeast area.

Phase 2 Milestones. The TAC then moved into a quick discussion and action of Phase 2 milestones. General consensus was that the budget needs to be a continued priority and the preferred goal to have Phase 2 scenarios completed is by Thanksgiving of 2015. It was agreed that these milestones would continue to be framework which may change in the future.

Approach to Step 2 Screening. Mary Dorman presented the consultant's team initial work on identifying unbuildable lands (See pg. 23 of Meeting packet). She began with the NE quadrant and posed the question if TAC agreed with the land shown. TAC agreed, with the exception of looking at whether the mining sites can be reclaimed and available for future urban uses over the planning period of 2008-2028. Dale Valkenburg moved and Sharon Smith seconded to keep those mining sites listed as unbuildable until Step 3. Ellen Grover moved and Dale Valkenburg seconded obtaining more information on removing federal and state lands as unbuildable as they are under public ownership.

GOAL 5. Mary Dorman explained there were three options for Goal 5 (Pg. 16 & 17 of packet). Ellen Grover moved we go with Option 2, but take a closer look at TPL Greenprint Plan, and any gaps with data, Brian Meece seconded. Joe Dills amended the motion to add a scoping memo that would come back to committee to be used as a tipping point on the direction the committee will continue with Goal 5 and have another vote at that time. Gary Timm further amended Option 3 be rolled into Option 2, and have a deadline for the scoping memo at the January 2015 meeting. These amendments all passed unanimously. Susan Brody asked TAC to bring back analysis, using Tumalo Creek as a "hard edge" for the UGB (Pg. 26 of packet), before the January meeting, to look at the time, costs and implications that area may have. The first vote was tied 6 for and 6 against; Ellen Grover agreed to change her vote to yes and Brian Meece voted yes. The motion passed on a second vote of 8 to 5. Options 2 and 3 from the October packet are shown below.

Option 2: Complete "reconnaissance level" inventory work using available data for the Urban Reserve Area (Recommended by Project Team)

- Focus specifically on Urban Reserve Areas that have not been inventoried by Bend or Deschutes County (GIS analysis and contacts with ODFW). As summarized in the earlier discussion of Goal 5, it is anticipated that inventories need to be supplemented specifically for wildlife habitat and sensitive or threatened wildlife species
- Additional information is important because it affects assumptions regarding buildable land and development capacity within potential UGB expansion areas
- City would be in a better position to conduct an ESEE analysis in Step 3 (when uses are identified for UGB scenarios) and consider options for Goal 5 programs based on more robust Goal 5 inventories for specific UGB expansion scenarios
- Phase 2 could include more inventory work and a higher level of analysis after the analysis of UGB alternatives but prior to a final UGB decision
- Issue – typically, Goal 5 protections for big game habitat has been a focus for county comprehensive plans; are reasonable programs available to protect big game habitat inside the UGB? It would be possible to determine these types of programs after specific UGB expansion proposals to meet anticipated land needs are in place since the program would be based partially on the amount and location of any proposed UGB. ☐ Option 2 could also consider use of Greenprint data and maps for ESEE evaluation in Step 3 – this could save time and money

Option 3: Address multiple Goal 5 resources associated with the Deschutes River and Tumalo Creek as "Open Space/Scenic"

- Voluntary option for Bend under Goal 5 rule
- Potential opportunity to address the riparian area, a larger buffer and connect open space and trails (a very important community goal) with an integrated "open space/scenic" approach to Goal 5 resources
- Possible opportunities for open space tax credits, etc.
- Likely to be a viable option only with property owner concurrence and support – at this point, there is not an evidentiary basis to support Option 3

Goal 7. Mary Dorman explained there were three options for Goal 7 (Pg. 20 of packet) and referenced Wildfire Risk Maps (see appendices) to show the high risk areas. What was not clear was how TAC needed to use this information. New information would need to be submitted from the team to be put into record and the guidance of a specialist in wildfire would be helpful before making a decision on the options. A motion was put forth to combine option 2 and 3; John Dotson moved to combine them and Ellen Grover seconded with an amendment that a specialist/educated speaker be contacted to assist in clarifying how we use this information to move forward with Goal 7. Motion passed with only one no vote. Options 2 and 3 for Goal 7 are shown below.

Option 2: Include new policies to address wildfire risk in the Bend General Plan

- Adopt the 2011 CWPP for the Greater Bend Area by reference as part of the final package of UGB plan amendments
- Supplement the discussion of wildlife risk based on the information in the 2011 Deschutes County Comprehensive Plan ☐ Consider requiring implementation of FireWise standards as part of annexation agreements for UGB expansion

Option 3: Explore more detailed information for relative wildfire risk (Recommended by Project Team)

- Coordinate with research project at OSU to obtained more detailed GIS mapping of relative wildfire risk to supplement information in the CWPP, if available
- Research more detailed evidence to identify characteristics associated with relative wildlife risk (such as topography, access for emergency vehicles, proximity to hydrants or requirements for sprinklers, etc.) to use in the Goal 14 ESEE balancing and comparison of alternative UGB expansion areas
- Explore plan policies and code standards and other approaches and tools to minimize or mitigate wildfire risks
- Address fire risk in Step 3. Use CWPP for now, and pursue more detailed mapping for Step 3 ESEE analysis and comparison of UGB alternatives when more detailed information is available on land needs and relative wildfire risk.

Step 2 Screening vs. Step 3 Evaluation. Mary Dorman presented three options (See pg. 7 & 8 of packet). Sharon Smith motioned to adopt Option 1. Rod Tomcho seconded. Dale concurred and commented that we should let analysis decide what areas shake out, such as Deschutes River Woods and Cascade Highlands. Motion passed unanimously. Option 1 is shown below.

Option 1: Do not screen any candidate lands based on ESEE at Step 2 (Recommended by Project Team)

- Fully consider Goal 14 Factor 3 (ESEE Consequences) and Factor 4 (Compatibility) as part of the balancing of all Goal 14 factors in the Step 3 evaluation of alternative UGB scenarios. Avoids legal risk – insufficient evidence in the record to screen candidate lands at the front end of the process based on designated significant Goal 5 resources, compatibility with resource activities or relative wildfire risk
- In Step 2, the TACs don't know what and where specific uses will be proposed as part of UGB alternatives. It isn't possible to evaluate potential conflicting uses with Goal 5 resources without that information.
- Avoids project delay and cost associated with ESEE analysis of candidate areas that may not be included in alternative UGB scenarios

Compatibility with Resource Activities. Mary Dorman gave a brief description of the wording of Factor 4 as outlined on page 8 of the packet. Dale Valkenburg moved, Sharon Smith seconded recommended option. Passed unanimously.

Question for TAC: Does the TAC agree with the approach of addressing compatibility with resource activities in the Step 3 ESEE analysis of alternative boundary scenarios; unless evidence is available to demonstrate a "fatal flaw" at Step 2?

Action Items/Next Steps

Action	Notes	Decision made/ Assigned To
Phase 2 milestones.	**Budget needs to be a continued priority.**	**Approved**
Approach to Step 2 Screening	**Mining sites listed as unbuildable until Step 3.** **Need to obtain more info on removing federal and state lands as unbuildable as they are under public ownership.**	**Approved** **Approved**
Goal 5	**Take another look at TPL Greenprint plan and any gaps with data.** **Amendment to add a scoping memo for Goal 5 (including schedule & budget implications) for consideration at January 2015 meeting.** **Amendment: Option 3 (Address multiple Goal 5 resources associated with Deschutes River and Tumalo Creek as "Open Space/Scenic") should be rolled into Option 2 ("Reconnaissance level inventory of Urban Reserve Area), and have a deadline for the scoping memo in the January 2015 meeting.**	**Approved** **Approved** **Approved** **Approved Vote: 8 to 5**
Goal 7	**Motion to combine option 2 (include new policies to address wildlife risk in General Plan) and option 3 (explore more detailed information relative to wildlife risk).** **Amendment that a specialist/educated speaker**	**Approved** **Approved**

	be contacted to assist in clarifying how we use this information to move forward with Goal 7.	
Step 2 Screening vs. Step 3 Evaluation.	**Motion to adopt Option 1 (do not screen at Step 2) with the opportunity for full consideration of ESEE consequences and Compatibility in balancing of all Goal 14 factors in Step 3 evaluation of alternative UGB scenarios.**	**Approved**
Compatibility with Resource Activities.	**Approval of Factor 4 wording to consider compatibility in the Step 3 ESEE analysis of alternative boundary scenarios.**	**Approved**

Meeting adjourned at 12:28 pm by Joe Dills.

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City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting #4
Meeting Notes
Date: November 18, 2014

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday, November 18, 2014 in the Bend City Hall Council Chambers. The meeting was called to order at 10:04 am by Sharon Smith.

Members Attending

- ☐ Toby Bayard
- ☐ Susan Brody
- ☐ Jim Bryant
- ☐ Paul Dewey
- ☐ Rockland Dunn
- ☐ Scott Edelman
- ☐ Ellen Grover
- ☐ Nick Lelack
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Dale Van Valkenburg
- ☐ Robin Vora
- ☐ Bruce White
- ☐ Ruth Williamson

Discussion

Joe Dills walked the TAC through the agenda at the beginning of the meeting.

TAC reports.

- Dale Van Valkenburg reported on the Residential TAC meeting from 11/17/14.
- Brian Meese reported on the Employment TAC meeting from 11/18/2014.

Follow up from TAC 3 (See Page 3 of packet).

- Wild and scenic designations. Federal Wild and Scenic designation does not have development standards. The designation relies upon development standards for the Oregon Scenic Waterway and related standards in the Deschutes County Zoning Ordinance.
- No TAC direction was sought; this item was for information only.

Phase 2 framing and approach (See Page 4 of packet).

- The new milestone chart includes Stage 2 – Base Mapping: map indicators for Goal 14 factors 1 through 4 and Goal 5 inventory.
- State 4 – Scenario Evaluation will include: scenarios testing using the Envision Tomorrow tool; Goal 14 evaluation; water and sewer optimization; transportation modeling; team review of results, and; Goal 5 ESEE analysis.
- The TAC discussion on this topic included how this process will be different from the one used in 2008, the participation of TAC members in Phase 2, the level of analysis (parcel – based); public involvement, and the timing of Goal 5 inventory work.

Approach to Ranking during Base Mapping (See Page 5 of packet). The TAC discussion transitioned to this item, which focused on how to address the four location factors under Statewide Planning Goal 14 (Urbanization) in both the Base Mapping (Stage 2) and Scenario Evaluation (Stage 4). Joe directed the TAC to Table 1 in the meeting packet, which is enclosed as an attachment for reference:

- Factor 1 (Efficient accommodation of land needs) focused on three proposed indicators for Stage 2 Base Mapping.
- TAC also reviewed the four proposed indicators under Factor 2 (Orderly and economic provision of public facilities and services). The TAC closed on the Factor 2 analysis at Stage 2 with criteria on system impacts, physical barriers, substandard roads, and system connectivity (for multi-modal transportation). For stormwater – TAC closed on proximity to drinking water, geology, injection wells, and water quality.
- Factor 3 (Comparative environmental, social, economic, and energy consequences (ESEE)). The discussion of potential Factor 3 criteria at Stage 2 included impacts to existing neighborhoods, proximity to Goal 5 resources, impacts to neighborhoods outside the UGB, solar energy, possible use of the Greenprint Plan as a resource for this analysis, the expansion of relative wildfire risk to all hazards, and consideration of irrigation facilities.
- Stage 2 criteria for Factor 4 (Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB) included looking at parcels with irrigation, adding efficiency to consideration of irrigation district water, mapping presence of high-value farmland, prescribed burning, measuring proximity between the proposed UGB and farm and forest activities occurring on nearby farm and forest lands.

The approach to ranking was deferred to the next Boundary TAC meeting.

No public comment.

Meeting adjourned at 12:30 pm by Joe Dills.

Action Items/Next Steps

Action	Assigned To
Follow up from TAC 3	**Done**
Stage 2 – Base Mapping (using GIS) criteria	**Done**
Approach to Ranking during Base Mapping	**Deferred to December meeting**

Attachments:

1. Table 1: Goal 14 Factors, from November 2014 TAC Packet

Table 1. Goal 14 Factors

Stage 2 – Base Mapping (using GIS)	Stage 4 – Scenario Evaluation (using Envision)
Factor 1: Efficient accommodation of identified land needs.	
Purpose: Prioritize exception lands within Study Area (more than 18,000 acres) based on proposed key indicators of land use efficiency: • Parcel size & value of existing improvements • Proximity to existing UGB – adjacency more efficient that edge of study area • Topography (Note: we currently only have GIS layer for 25% slopes or greater)	Purpose: Evaluate alternative scenarios based on proposed performance measures for land use efficiency: • Urbanized acres • New housing units built inside vs. outside existing UGB in 2028 (# and %) • New jobs located inside vs. outside existing UGB in 2028 (# and %) • Estimated average density for housing and jobs in 2028 (units/acre and jobs/acre) • Percent of new growth accommodated through infill/redevelopment
Factor 2: Orderly and economic provision of public facilities and services.	
Purpose: Prioritize exception lands within study area based on proposed key indicators for orderly and economic provision of public facilities and services: • Ability to serve via gravity sewer • Ability to serve within identified water pressure zones • Ability to serve with water or sewer without major infrastructure upgrades • Proximity to existing or planned parks, trails, elementary schools	Purpose: Evaluate alternative scenarios based on proposed performance measures for orderly and economic provision of public facilities and services: • Acres served by gravity sewer • Estimated cost of sewer improvements (based on Optimization); including cost per acre • Additional water storage facilities required (number) • Estimated cost of water improvements (based on Optimization); including cost per acre • VMT/capita and mode split in 2028 • Estimated cost of transportation improvements (based on traffic model); including cost per acre • Housing units and jobs within walking distance of transit in 2028 (# and % of total housing units and jobs) • Average housing and employment density within walking distance of transit in 2028 (housing units and jobs per acre) • Housing units within walking distance of existing/planned elementary schools, parks and trails in 2028 (# and % of total units)

Stage 2 – Base Mapping (using GIS)	Stage 4 – Scenario Evaluation (using Envision)
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE).	
Purpose: Prioritize exception lands within Study area based on proposed key indicators for ESEE consequences: • Proximity to significant Goal 5 resources • Relative wildfire risk	Purpose: Evaluate alternative scenarios based on proposed performance measures for ESEE consequences: • Development (acres) in proximity to significant Goal 5 resources • Development (# and % of housing units and jobs) in Goal 7 hazard prone areas • Housing mix & affordability by income level • Jobs housing balance (by TAZ or quadrant) • Greenhouse gas emissions • Total impervious surface area • % of job growth in downtown Bend
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.	
Purpose: Prioritize exception lands within study area based on proposed key indicators for compatibility: • Proximity to designated forest land • Proximity to designated high-value agricultural land .	Purpose: Evaluate alternative scenarios based on proposed performance measures for compatibility with resource lands: • Perimeter of proposed UGB abutting designated forest land (lineal feet/miles) relative to existing UGB • Perimeter of proposed UGB abutting designated high-value agricultural land (lineal feet/miles) relative to existing UGB • Designated forest land included, if any (acres) • Designated agricultural land included, if any (acres)

City of Bend
Boundary & Growth Scenarios Technical Advisory Committee
Meeting #5
Meeting Notes
Date: December 16, 2015

The Boundary & Growth Scenarios TAC held its regular meeting at 10:00 am on Tuesday, December 16, 2014 in the Barnes/Sawyer Room of the Deschutes Services Building (1300 NW Wall Street, Bend). The meeting was called to order at 10:05 am by Brian Rankin.

Members Attending

- ☐ Toby Bayard
- ☐ Jim Bryant
- ☐ Paul Dewey
- ☐ Rockland Dunn
- ☐ Scott Edelman
- ☐ Ellen Grover
- ☐ Steve Hultberg
- ☐ Nick Lelack
- ☐ Brian Meece
- ☐ Charlie Miller
- ☐ Mike Riley
- ☐ John Russell
- ☐ Ron Ross
- ☐ Sharon Smith
- ☐ Gary Timm
- ☐ Rod Tomcho
- ☐ Dale Van Valkenburg
- ☐ Peter Werner
- ☐ Bruce White
- ☐ Ruth Williamson

Discussion

1. Welcome

Brian opened the meeting at 10:05 am. Sid Snyder of the Residential TAC gave his brief recap of the joint Residential TAC/Employment TAC/USC workshop on Monday December 15, 2014. Gary Everett also provide some additional comments on the workshop.

Sharon asked the TAC to review the October and November meeting minutes. TAC members provided following comments on these minutes: incorporate text of recommendations acted on by TAC in minutes and reiterate motions in minutes. Sharon recommended that adoption of the October and November minutes be deferred to the next meeting.

In addition to the minutes, several TAC members requested that the 2009 record of the prior UGB proceedings be uploaded to the City's website.

2. Preview of Stage 2 base mapping for Factor 1

Mary Dorman of the APG Team introduced this topic, and referred the TAC to page 24 of the packet[1]. The packet for this meeting included pdf copies of several maps presented to the TAC: 1) Priority 2 Exception Land Parcel Size; 2) Improvement to Land Value Ratio; 3) Exception Land – Distance from UGB; 4) Topography – Slopes 25% or Greater, and; 5) Subdivisions with known CC&Rs.

[1] Four maps were also presented that are now available in pdf form through the City's website: http://www.bendoregon.gov/index.aspx?page=52&parent=19718.

The TAC members present asked a number of questions related to the use of this data for Stage 2 base-mapping, including:

- Clarification of the topics mapped (e.g. land/improvement ratio)
- Consistency between maps (e.g. exceptions identified consistently)
- The use of a 25% slope versus a lesser or greater slope. The TAC recommended use of the 25% slope since that is how steep slopes are defined in administrative rules for Goals 9, 10 & 14.
- The subdivisions with CC&Rs and whether all lots with restrictive CCRs were correctly identified. Relative to the CC&R question, the TAC concluded that other Stage 2 maps (such as Parcel Size) captured rural residential subdivisions. CC&R information that has already been compiled can be supplemented, if needed, when we've identified alternative UGB scenarios in Phase 2.

After this discussion, Sharon asked for a motion to the two questions posed on page 11 of the packet (page 3 of 15), which are incorporated below:

Questions for the TAC:
1. Do the preliminary base maps in Appendix A adequately reflect the Factor 1 indicators approved by the TAC at the November meeting?
2. Can the TAC provide suggestions on how and when it would be appropriate to obtain additional supporting data on CC&Rs for rural subdivisions in the Study Area?

Sharon moved, Steve seconded. The vote was unanimous in support of these questions based on the feedback noted in the bullets above.

3. Legal and Planning Context for Factor 2 (Orderly and Economic Facilities)

This was an information item. Mary Dorman provided a brief report to the TAC.

4. Recommended criteria/measures for Factor 2

Brian and Mary Dorman provided an introduction to this agenda item for the TAC. They directed the TAC to page 15 of the TAC packet (Page 15 of 40) with the focus of the discussion today on water, sewer, stormwater, and transportation. They also referred the TAC to several maps on display at the meeting that were then referred to by several presenters.

Transportation. Chris Maciejewski of DKS and Associates presented a transportation map for Bend and the study area that focused on key congested corridors. . The questions and discussion around this map and its use included congestion thresholds, transportation projects planned in the next five years, the use of the Envision Tool for evaluating transportation, the use of the ODOT travel demand model.

Brian then asked the TAC if there was agreement on the principles presented on page 15 of the packet with respect to transportation, with Sharon further confirming direction.

Questions for the TAC:
1. Does the TAC support the proposed principles for the consideration of "orderly and economic provision of transportation facilities" under Factor 2?
2. Does the TAC support the key indicators used for the transportation principles in Stage 2 (base mapping using GIS) and Stage 4 (scenario evaluation using measures/output from Envision and Transportation Demand Models)?

Rod moved, _____ seconded TAC agreement on the transportation principles. The TAC concurred with the general principles for transportation on page 15. Brian committed to bringing back more details on additional Stage 2 maps for transportation and how this analysis would be used later in the process.

Water/Sewer/Stormwater. Tom Hickmann provided an overview of each map presented for water, sewer collection, and stormwater.

Water – Tom referred the TAC to the UGB Expansion: Water Analysis map. The map shows the two-mile study area boundary, with areas colored in brown as those the City of Bend can serve. City can use gravity to provide water to those areas in brown. Areas to the north, east, and southeast of Bend are in Avion's territory. Areas to the south of Bend include those served by the Agate, Avion, and Roats Water companies. The TAC's discussion with respect to this map addressed coordination with these other utilities, and finding out their respective priorities: what they can and can't serve, whether gravity is important, and their respective business plans.

Stormwater – Tom referred the TAC to the UGB Expansion Soils Infiltration map. The TAC's discussion here focused on whether the City is required per the Clean Water Act to have a stormwater collection and treatment system; Tom confirmed the City is not required the CWA to do this. The TAC also requested that colors used to identify different areas on this map use a color scheme consistent with those used on other maps.

Sewer – Tom referred the TAC to the "Excess Dry Weather Flow at Full Build-out of the Existing UGB with Implementation of all CSMP Improvements" map. The areas show in tan are those can be served with gravity sewer; blue areas require pumping to conveyance. Green areas can pump directly to the water reclamation facility (WRF). The collection system has excess capacity to serve another 2,100 people after buildout with the current system. A storage element in the collection system is not included here, but can be included in Stage 4. TAC members asked for clarification on which areas can be served by gravity and which would require regional pumping stations. Areas in blue would require investment beyond the investment needed to serve those areas in brown.

Sharon recommended that Item no. 5 on the agenda be deferred to the next meeting.

Public Comment: Suzanne Butterfield of the Swalley Irrigation District requested that the City coordinate with the four irrigation districts with facilities and patrons inside and outside the boundary.

Sharon adjourned the meeting at 12:25 pm.

Action Items/Next Steps

Action	Assigned To/Done
Approval of October and November 2014 TAC minutes	**Deferred to January 2015 meeting** **Teams will provide more detail to reflect decisions made**
Preview of Stage 2 Base Mapping for Factor 1	**Maps presented to TAC (See Appendix A to packet)** **TAC approved maps and provided input into ensuring consistency**
Legal and Planning Context for Factor 2	**Done**
Recommended criteria/measures for Factor 2	**TAC approved Transportation Principles** **Bend/APG team to bring back additional Stage 2 maps and more details on how analysis will be used later in the process** **City-APG team to follow up with private water utilities to get their input into this analysis**
Recommended criteria/measures for Factor 4	**Deferred to January 2015 meeting**

Memorandum

January 21, 2015

To:	Boundary and Growth Scenarios Technical Advisory Committee
Cc:	Bend Staff
From:	APG Consulting Team, DKS and MSA
Re:	METHDOLOGY AND STAGE 2 MAPS FOR CONSIDERATION OF ORDERLY & ECONOMIC PUBLIC FACILITIES – FACTOR 2 OF GOAL 14

INTRODUCTION

At the January meeting, the Boundary TAC will continue its work on developing the methodologies to evaluate exception lands in the two-mile study area relative to Factor 2 of Goal 14 (orderly and economic provision of public facilities and services). As noted at the last meeting, the administrative rule for Goal 14 states that "public facilities and services" means water, sanitary sewer, storm water management, and transportation facilities for the purposes of Factor 2.[1]

This memo supplements the memo that was included in the packet for Boundary TAC Meeting 5.[2] Please see the earlier memo for:

- Legal and Planning Context for Factor 2
- Guidance from Goal 14 Administrative Rule
- Key Remand Issues Relating to Factor 2
- Overview of Updates to Facility Plans since the Remand
- Proposed Methodology for Consideration of Factor 2 for:
  - Transportation Facilities
  - Water Facilities
  - Sanitary Sewer Facilities
  - Stormwater Facilities

Over the past month, the project team has refined preliminary Stage 2 maps that were presented at the December meeting and prepared additional maps and supporting memos to analyze the study area based on key indicators for Factor 2 of Goal 14. All of the Stage 2 maps that will be discussed at the January meeting are included in this packet, along with memos prepared by DKS (transportation) and MSA (water & sanitary sewer).

[1] See OAR 660-024-0060(7).

[2] See packet for Boundary TAC Meeting 5 (December 15, 2014), pages 9-32.

Intent of Stage 2 Base Mapping

The project team wants to reinforce the intent and "big picture" for the Stage 2 base mapping. In particular, we are not eliminating parcels from consideration, but we are asking the TAC to review and approve maps to implement the Goal 14 requirements in a manner they deem appropriate. Based on those maps, in Phase 2 of the UGB project, they will then use these maps to "guide their eye" to forming a few different UGB expansion scenarios for further refined evaluation in Stage 4. This Stage 4 evaluation will then provide more detailed analyses and comparisons which they will use to select a preferred alternative. Again, Stage 2 mapping is not to eliminate parcels, but to evaluate all exception parcels in the study area based on key indicators for the Goal 14 factors and then balance this evaluation to create some conclusions about why some areas are better suited to include in a UGB scenario than other areas. The totality of the Stage 2 maps and analysis will then allow the team to write findings explaining why other exception areas were less suitable and were not included in a UGB scenario.

Objectives for Meeting 6

As outlined in the agenda for this meeting, the project team has the following objectives for this meeting:

- TAC approval of Stage 2 base maps for Factor 1 (Efficiency). The five maps reviewed at the December meeting have been revised based on TAC input.
- TAC review and preliminary approval of Stage 2 base maps for Factor 2 (Orderly & Economic Public Facilities). Four of the maps reviewed at the December meeting have been revised based on TAC input. Four additional maps have been prepared and are included in this packet. Obtain TAC feedback on whether the preliminary maps are helpful in prioritizing exception lands in the Study Area based on key indicators for Factor 2 recommended by the TAC. Obtain TAC direction on refinements to specific maps, as needed.
- TAC review and preliminary approval of Stage 2 base maps for Factor 4 (Compatibility with Activities on Farm & Forest Land). Two maps are included in this packet to rank exception lands in the study area based on proximity to zoned forest land and high-value EFU parcels.

As shown in the agenda, the team has allocated the majority of the meeting time to discussion of the Stage 2 base maps for public facilities. Each presenter will provide a brief overview of the planning context for the infrastructure category prior to moving on to a discussion of the technical memo assumptions and individual Stage 2 maps. Joe Dills will use Table 1 (included at the end of this memo) and the Stage 2 maps to facilitate the TAC discussion.

FOLLOW-UP FROM DECEMBER MEETING

Revised Stage 2 Base Maps for Factor 1 (Efficiency)

The Boundary TAC reviewed five preliminary Stage 2 base maps at the December meeting relating to Factor 1 of Goal 14 (Efficient Accommodation of Identified Land Needs). The revised

maps are included in Appendix A (page 41of packet) and reflect the following input from the TAC at the December meeting:

- All Stage 2 base maps are now formatted using a standard map template and consistent color scheme ranging from good (green) to fair (yellow) to poor (red)
- Additional street names have been added to the map template
- The Improvement to Land Value Map has been corrected to include a portion of the Miller Tree Farm property that had been deleted from the December map
- We confirmed that the CC&R map does reflect the following information entered into the Remand record on December 1, 2008

Subdivisions with CCRs

Subdivision Name	CCR's	Land Division Restrictions	Comments
AWBREY MEADOWS	Yes	Yes	No land divisions allowed
BEE TREE SUBDIVISION	Yes	None	Limited to residential use
BRADETICH PARK	Yes	Yes	Limited to one house per lot. CCR's expire in 2023
COUNTRY VIEW ESTATES	No	None	
EAGLE VIEW ESTATES	Yes	None	Limited to residential use
EAST VILLA	Yes	None	Limited to single family residential use
EASTMONT ESTATES	Yes	None	Setback standards might limit divisions
J-D RANCH ESTATES	Yes	None	Setback standards might limit divisions
LOS SERRANOS	Yes	Yes	New lots must be no less than one-half of original lot
OLD DESCHUTES	Yes	None	
OLD DESCHUTES WEST	Yes	None	
OVERTREE RANCH	Yes	None	
QUAIL RIDGE	Yes	Yes	New lots must be no less than half of original lot
RONALD ACRES	Yes	Yes	No parcel shall be less than one-half (1/2) of the original size. All lots were five (5) acres in size when created.

ROYAL OAKS ESTATES PHASE I	Yes	Yes	No owner shall have the right to divide or partition any lot
ROYAL OAKS ESTATES PHASE II	Yes	Yes	No owner shall have the right to divide or partition any lot
SUNNY ACRES SUBDIVISION	Yes	Yes	Minimum lot size of 95,830 square feet
VISTA DEL SOL	Yes	Yes	No parcel shall be less than one-half of the original size of the parcel as the on the recorded plat.

Additional research on CC&Rs may be needed in Phase 2 depending on which lands are included in UGB scenarios. However, the Stage 2 map reflects available information that is currently in the record.

Questions for the TAC:

1. Do the revised Stage 2 base maps in Appendix A adequately reflect the Factor 1 indicators approved by the TAC at the November meeting (see Table 1)?

2. Do the revisions address the recommendations provided by the TAC at the December meeting?

PROPOSED METHODOLOGY FOR CONSIDERATION OF FACTOR 2

Link with UGB Project Goals

As noted in the memo for the December meeting, two of the eight goals adopted by the UGB Steering Committee are directly related to orderly and economic infrastructure and the city's urban form:

- *Balanced Transportation System* – Bend's balanced transportation system incorporates an improved, well-connected system of facilities for walking, bicycling, and public transit, while also providing a reliable system for drivers.
- *Cost Effective Infrastructure* – Bend plans and builds water, wastewater, storm water, transportation, and green infrastructure in a cost-effective way that supports other project goals. Efficient use of existing infrastructure is a top priority.

Link with General Plan Goals & Policies for Public Facilities

At the December meeting, members of the TAC emphasized that UGB findings to address Factor 2 of Goal 14 will need to be consistent with relevant goals & policies of the Bend Area General Plan. Appendix B (page 47 of packet) includes excerpts from the following chapters of

the Bend Area General Plan to provide additional context for the TAC discussion at the January meeting.

- Chapter 7 – Transportation Systems[3]
- Chapter 8 – Public Facilities & Services
    - Sewer Collection Facilities
    - Water Facilities and Systems
    - Storm Drainage Facilities and Systems s

Bend's adopted infrastructure master plans and General Plan goals and policies for public facilities that must be addressed under Factor 2 of Goal 14 have all been "acknowledged" by LCDC.

There are no policies which specifically direct how to evaluate the two-mile study area and the project team believes the proposed study area evaluation methodologies are generally consistent adopted plan policies. Transportation policies encourage the development of multi-modal systems that are well connected, address congested areas, recognize natural features, and emphasize gridded street networks. Transportation policy #9 does relate specifically to expansion areas and directs cooperation in creating plans to extend existing connections of roads, sidewalks, trails, and public transportation systems so the transportation system can support urban levels of development.

Key policies related to the sewer system indicate a preference for using gravity service and regional pump stations versus smaller lift stations. Water system policies recognize other service providers and the need to coordinate. Relevant storm drainage policies mention that development shall, to the extent practicable, contain and treat storm drainage onsite and minimize drainage into Tumalo Creek and the Deschutes River, as well as identifying areas such as flood zones and water supply watersheds and riparian corridors that are not suitable for urban development.

Specific findings have not been prepared by the project team given the early stages of the analysis. The project team suggests the TAC review the policies in Appendix B and draw their own conclusions with respect to whether the proposed methodologies do a good job capturing the main thrust of the policy direction embodied in the General Plan. At later stages of the UGB boundary evaluation, the project team will need to make specific findings on relevant goals and policies.

Transportation Facilities

The TAC recommended that the following key indicators be used for Stage 2 base mapping for transportation facilities:

[3] For a link to the full text of Chapter 7 of the General Plan, see http://www.bend.or.us/modules/showdocument.aspx?documentid=4073

- **Barriers**: Consideration of physical barriers to connectivity (new river crossings, railroad crossings, etc.). A map would reflect these physical barriers, which are associated with higher costs to construct, as well as representing bike and pedestrian barriers.
- **Existing Bottlenecks**: Consideration of bottlenecks that are already nearing or at capacity and what land areas rely on those facilities for circulation (based on trip patterns in 2010).
- **System Connectivity**: Consideration of existing roadway spacing of arterials and collectors and opportunities for connectivity for multiple modes. Mapping would consist of identifying if the existing major roadway network meets ideal grid-spacing (e.g., one-mile between arterials) and the potential to extend arterials and collectors into the study area, to rank these areas of the study area with a more subjective approach. It may also be helpful to identify existing intersection densities (connectivity) inside the current UGB as well, in order to see if subareas in the study area are adjacent or near well connected streets inside the current UGB (which various expansion areas would presumably flow into if added to the UGB).

Chris Maciejewski (DKS) presented one map at the December meeting that focused on existing bottlenecks (2010). The map generated substantial discussion with the TAC, including questions about how new improvements built since 2010 or included in the TSP were considered in the ranking of exception areas.

As a follow-up to the December meeting, the project team has refined and supplemented the Stage 2 maps for transportation to evaluate and rank the exception areas relative to the three key indicators approved by the TAC in the bullets above.

A memo from DKS is included in Appendix C (page 55 of packet). The memo provides background on the methodology and explains the three transportation related maps that prioritize exception lands outside of the current Bend UGB. Key highlights from the DKS memo and maps are summarized below.

Barriers

The Physical Barriers to Connectivity Map (page 72 of packet) considers how topographic and infrastructure features could limit the ability to provide adequate transportation facilities into and through exception lands. Using GIS files, the map shows streams and rivers, railroads, major highways and steep slopes. Exception lands were ranked as having minimal, moderate or significant barriers to connectivity as shown on the map.

See the memo in Appendix C for a description of barriers to various exception lands that informed the rankings shown on the Barriers map. Overall, the most significant physical barriers are the Deschutes River, significant slopes (typically near the Deschutes River and Tumalo Creek) and the railroad. Most exception areas have minimal or moderate barriers, while the area north and west of Tumalo Creek has significant barriers.

Questions for the TAC:

1. Does the discussion in the DKS memo and the information shown on the Barriers map capture this key indicator for "orderly and economic transportation facilities" for the Stage 2 base mapping? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios in Phase 2 of the project?

Bottlenecks/Congested Corridors

Based on the feedback at the December meeting, the project team has shifted from a focus on existing bottlenecks (based on trip patterns in 2010) to consideration of congested corridors in 2040. Using the Bend 2040 travel demand model, DKS identified three key congested highway corridors based on the recently completed Bend MPO Metropolitan Transportation Plan (MTP). It is important to note the MPO plan was completed in cooperation and coordination with ODOT. These corridors include the following:

- US 97 between Robal Road and US 20
- US 97 between Empire Avenue and Colorado Avenue
- US 20 between NE 3rd Street and NE 15th Street

These corridors were flagged in the model and the origins and destinations of trips using any of these three corridors were tracked by Transportation Analysis Zone (TAZ). The percentage of trips traveling to or from each TAZ that used at least one of these congested corridors was then calculated (with a similar percentage assumed for the exception lands within each TAZ).

The 2040 Reliance on Congested Corridors Map (page 73 of packet) summarizes the reliance (percentage of trips) of exception lands on the three congested corridors. In general, the map indicates that:

- Exception lands to the west and northwest, east and southeast have a relatively low reliance on a congested corridor (less than 30% of trips) - good
- Exception lands in the vicinity of US 97 south of the UGB have a moderate reliance (30-40% of trips) on a congested corridor - fair
- Exception lands in the vicinity of US 97 north of the UGB have a relatively high reliance (greater than 50% of trips) on a congested corridor - poor

Questions for the TAC:

1. Does the discussion in the DKS memo and the information shown on the Congested Corridors map capture this key indicator for "orderly and economic transportation facilities" for the Stage 2 base mapping? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios in Phase 2 of the project?

System Connectivity

System connectivity was considered in terms of access to an existing or planned network of arterial and collector roadways within the UGB. DKS used the Functional Classification Map in Bend's TSP to identify where gaps in the existing arterial/collector system exist, based on an approximate one-mile spacing of arterials and one-half mile spacing of arterials. Tracing paper sketches that illustrate the arterial and collector system and gaps are included in the DKS memo (see Appendix C).

DKS concluded that Bend has a relatively balanced spacing of arterials around the perimeter of the UGB. Completing gaps in the collector system was highlighted as important because it: 1) relieves pressures on the arterial system, and 2) improves multi-modal options for bicycle and pedestrian travel on roadways with lower traffic volumes.

Where there are gaps in the collector spacing, DKS and the project team also considered opportunities for system connectivity looking from inside and outside of the UGB in the ranking of exception areas.

- Looking from inside the UGB to exception lands outside, do existing rural development patterns or existing roadways limit opportunities for system connectivity?
- Looking from exception lands outside the UGB, do existing urban development patterns or existing roadways limit opportunities for system connectivity?

The Connectivity to Complete Roadway Grid map (page 74 of packet) illustrates the exception areas that are considered to have good, fair or poor connectivity based on the methodology and scoring described in the DKS memo. This last transportation map is intended to convey a general impression of which exception areas can readily provide route choices and adequate system hierarchy, resulting in balanced flows and travel choices for all modes. Of the three transportation maps, the team found this last one the most challenging. At the January meeting, Chris will use the connectivity sketches to walk through some of the assumptions that are behind the rankings shown on the map.

Questions for the TAC:

1. Does the discussion in the DKS memo and the information shown on the Connectivity to Complete Roadway Grid map capture this key indicator for "system connectivity" for the Stage 2 base mapping? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios in Phase 2 of the project?

Water Facilities

The TAC recommended that the following key indicators be used for Stage 2 base mapping for water facilities:

- **Gravity system**: Consideration of areas that can be served via gravity. This would be illustrated by a map showing areas outside the UGB in the study area that could be served via gravity.
- **Pressure zones:** Consideration of pressure zones with existing water storage capacity. This would be mapped similar to the above.

Tom Hickmann presented a preliminary map at the December meeting that identified water service providers in the 2-mile study area (City of Bend, Agate, Avion and Roats). The map showed a water service elevation (4,002.5 ft) to highlight areas that could potentially be served by the City of Bend to the west and north of the existing UGB from the Outback facility. See Figure 2 of MSA memo in Appendix D (page 68 of packet).

Questions were raised by the TAC about the large portion of the 2-mile study area within Avion's service area and whether a gravity service line was an appropriate indicator for their water system.

As a follow-up to questions at the December meeting, Brian Rankin and Damian Syrnyk met with Jason Wick of Avion Water Company on January 16th to explain the approach to Stage 2 base mapping for water facilities and share example maps. GIS layers for the 2-mile study area and exception lands were forwarded to Jason and he was invited to participate in the January TAC meeting. Jason has indicated that he will be able to prepare a Stage 2 base map to rank exception areas within Avion's service area as good/fair/poor based on maximizing use of existing and planned system improvements. However, the map was not available to include in the packet for this meeting. Jason may be able to share a preliminary map at the January TAC meeting. At a minimum, he will be available to answer questions specific to Avion's system and participate in the TAC discussion.

Murray, Smith & Associates, Inc. (MSA) has prepared a technical memo to assist the City in the initial Stage 2 mapping for water and wastewater. MSA will also support modeling analysis and engineering cost estimates in the Stage 4 analysis after UGB scenarios have been formed. The MSA technical memo and supporting maps are included in Appendix D (page 64 of packet).

Highlights from the MSA memo relative to water facilities are summarized below:

- Much of the potential UGB expansion areas north, south and east of the UGB are located within the Avion, Roats, or Agate service boundaries and have not been considered in the analysis to date.
- UGB expansion areas which can potentially be served through the City's Outback water facility and expansion of existing pressure zones are located west and northwest of the UGB.
- Areas located below an elevation of 3,900 feet can be served by pressures greater than 40 pounds-per-square inch (psi) as shown in Appendix D, Figure 2.
- Service areas above an elevation of 3,900 feet would need to be boosted and may require higher elevation storage facilities to establish new pressure zones.

The Water Map in Appendix E (page 75 of packet) identifies the exception areas north and west of the UGB that can be served by the City of Bend by gravity from the Outback facility (good). A small area of the Miller property in proximity to the Outback facility is at a higher elevation and may not be able to serve by gravity (fair).

The project team has concluded that we do not have readily available information to prepare Stage 2 maps relating to rank exception areas relative to pressure zones with existing water storage capacity. This indicator is more appropriately analyzed in Stage 4 after UGB scenarios have been formed.

Questions for the TAC:

1. Does the discussion in the MSA memo and the information shown on the Water map (page 75 of packet) capture the key indicator for a "gravity system" for Bend's service area? Are any refinements needed? The project team will continue coordination with Avion and provide them with the opportunity to provide a similar Stage 2 base map for exception lands in their service area.

2. Does the TAC recommend using this map (for Bend's service area) to help inform the development of UGB scenarios in Phase 2 of the project?

Sanitary Sewer Facilities

The TAC recommended that the following key indicators be used for Stage 2 base mapping for sanitary sewer facilities:

- **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.

Tom Hickmann presented a preliminary map at the December meeting that combined consideration of the two indicators listed above. The TAC had several questions about the preliminary map and the project team has completed substantial refinements to the map to address the feedback from the TAC.

As noted above, MSA has prepared a technical memo to assist the City in the initial Stage 2 mapping for water and wastewater. MSA will also support modeling analysis and engineering cost estimates in the Stage 4 analysis after UGB scenarios have been formed. The MSA technical memo and supporting maps are included in Appendix D (page 64 of packet).

Highlights from the MSA memo relative to the wastewater collection system are summarized below:

- As part of the CSMP, a growth sensitivity analysis was performed to evaluate collection system performance under additional stress.
- This sensitivity analysis indicated that the optimized capital improvements identified within the CSMP provide a concept that should enable the City to serve additional loading beyond what is currently identified in the existing UGB, with incremental additional infrastructure.
- The growth sensitivity analysis also indicated that the sizing of storage in the southeast and the sizing of the Northeast Interceptor would likely vary based on the extent and location of additional growth.
- The 2-mile buffer around the UGB was subdivided into sub-basin boundaries. A relative ranking was applied to each sub-basin based on the optimized CSMP and most likely impacts and potential improvements to the collection system for each of the delineated sub-basins.
    - Good – Fewest additional improvements. New gravity infrastructure to existing system or planned infrastructure.
    - Fair – Some additional improvements. Upsize pump station infrastructure to existing system or planned infrastructure. New gravity infrastructure and new gravity interceptors.
    - Poor – Significant additional improvements. New pump station infrastructure to planned or unplanned infrastructure. Combination of new gravity interceptors and regional pump station.

Figure 3 from the MSA technical memo has been formatted in the standard template for Stage 2 maps. See Appendix E, page 76 of packet.

Questions for the TAC:

1. Does the discussion in the MSA memo and the information shown on the Wastewater map capture the key indicators for a “gravity system” and “maximizing existing/planned improvements? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios in Phase 2 of the project?

Stormwater Facilities

The TAC recommended that the following key indicators be used for Stage 2 base mapping for stormwater facilities:

- **Surface geology**: Consider presence of surface geology (welded tuff) that limits on-site stormwater management. This could be shown by a map of more impermeable soils in areas outside the UGB, but inside the study area.
- **Drinking water protection areas**: Consider proximity to drinking water protection areas (DWPA)

- **Water quality limited streams**: Consider proximity to water quality limited streams. This could be illustrated by a map showing areas outside the UGB inside the study area that drain to Tumalo Creek and the Deschutes River.

Surface Geology

Tom Hickmann presented a preliminary map at the December meeting to address the surface geology indicator. The project team has included a simpler Stage 2 map in Appendix E (page 77 of packet) to focus more specifically on the tuffs. Information for this map was derived from a figure prepared for the Bend Stormwater Master Plan.[4] The tuffs (QTst) were ash layers deposited by volcanic eruptions from sources west of Bend and primarily outcrop west of the Deschutes River; they have low permeability and associated infiltration capacity. The map is general in nature, so localized areas of low permeability could potentially be worse than other areas. That level of detail would not be known until the point of development. Surface geology east of the Deschutes River (Qb) originated from the Newberry volcanic center southeast of Bend. These relatively young volcanic rocks are unweathered and fractured, resulting in zones of relatively high permeability.

As shown on the Surface Geology map, the tuffs (QTst) are categorized as fair for stormwater, primarily because of relatively higher costs and more limited suitability for on-site stormwater management. The Qb basalts are categorized as good because of relatively high permeability and suitability for on-site stormwater management.

Questions for the TAC:

1. Does the revised map on Surface Geology (page 77 of packet) capture the indicator regarding welded tuff that limits on-site stormwater management? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios in Phase 2 of the project?

Drinking Water Protection Areas

Two new maps are included in Appendix E to address proximity to drinking water protection areas (DWPAs):

- The map on page 78 of the packet shows the City of Bend GIS layer of DWPAs with 1,2,5 & 10 year time of travel zones identified for the 2-mile study area.
- The second map on page 79 of the packet uses the standard Stage 2 mapping and color template to categorize exception lands based on proximity to the consolidated DWPAs shown on the first map.

The adopted Stormwater Master Plan shows the 1 & 2 year time of travel boundaries for DWPAs because there is a connection between the 1 & 2 year time of travel and stormwater regulations. The Department of Environmental Quality (DEQ) has more stringent regulatory

[4] Figure 2 from GeoEngineers Stormwater Infiltration Evaluation Report (October 4, 2007).

requirements for underground injection controls (e.g., drywells and drill holes) within the two year time of travel zones. Wendy Edde, Stormwater Program Manager for the City of Bend, provided the following input on the Drinking Water Protection Areas.[5]

The City revised its time of travel areas in 2011 using newer software that could better capture the regional model developed by USGS than the more simplified methods used by the state back in 2002/03. The DWPA map on page 78 of the packet reflects the 2011 model and shows the 1, 2, 5 & 10 year time of travel zones. The city has higher confidence in time of travel maps for city wells relative to wells of private water companies. In general, groundwater is flowing through Bend from the southwest towards the northeast.

The Stage 2 map for the Drinking Water Protection Areas categorizes exception lands from good (green) to poor (red) based on proximity to delineated DWPAs. However, city engineering staff has indicated that this map is probably more relevant to consideration of potential land uses in proximity to delineated DWPAs (e.g., gas stations, certain industrial uses), rather than using this map to determine whether particular exception lands should be considered for inclusion in a UGB scenario.

Questions for the TAC:

1. Does the map on page 79 of the packet capture the indicator regarding proximity to DWPAs? Are any refinements needed?

2. Does the TAC recommend using this map to help inform the development of UGB scenarios and/or consideration of appropriate land uses in Phase 2 of the project?

Water Quality Limited Streams

The project team has not prepared a map to rank exception areas relative to proximity to water quality limited streams. As explained by Tom Hickmann at the December meeting, new development within any future UGB expansion area would have to comply with stringent regulations relative to stormwater discharges (point and non-point) to the Deschutes River and Tumalo Creek and other standards in Bend's Waterway Overlay Zone (WOZ). Therefore, the project team concluded that it wasn't appropriate to categorize exception lands as good, fair or poor based on proximity to water quality limited streams.

Question for the TAC:

Does the TAC agree with the team recommendation to drop proximity to water quality limited streams as an indicator for "orderly and efficient stormwater" facilities?

[5] E-mail correspondence between Mary Dorman (APG) and Wendy Edde (City of Bend), January 14, 2015.

FACTOR 4 OF GOAL 14: COMPATIBILITY OF URBAN AND RESOURCE USES

As summarized in the City Attorney Memorandum included in the packet of materials for Boundary TAC Meeting 2, the McMinnville case set out an analytical 3-step process for integrating the four factors of Goal 14 and the land priority provisions of ORS 197.298. The diagram attached to the City Attorney Memorandum illustrates the 3-step process.[6] Based on the McMinnville decision, consideration of compatibility of proposed urban uses with resource uses occurs at two distinct steps in the process:

- High level, initial consideration of compatibility in Step 2 (Initial Suitability Evaluation); and
- More focused evaluation of compatibility in Step 3 (Goal 14 Factor Analysis)

The proposed evaluation criteria that follow are intended to be applied to the more focused evaluation of compatibility in Step 3 when the City is considering alternative growth and UGB expansion alternatives.[7]

The wording of Factor 4 of Goal 14 is very specific:

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

First, proposed urban uses must be near agricultural and forest activities. Second, any agricultural and forest activities must be occurring on designated farm and forest land (e.g., not on exception land).

Stage 2 Mapping for Factor 4

Consistent with the approach to Stage 2 mapping for Factors 1-3 of Goal 14, the project team has prepared maps to illustrate proximity of exception lands within the study area to designated forest lands and high-value EFU parcels.

The intent of these maps is similar to all other Stage 2 maps. In the Base Mapping stage, the project team proposes to use a few key indicators of the Goal 14 factors to help identify the best land to include in boundary scenarios. We are starting with a study area that includes more than 18,000 acres of priority exception lands, substantially more land than will be needed. The team is using GIS to prepare maps to illustrate the relative ranking of parcels based o the key indicators associated with each of the four factors of Goal 14. This stage of the analysis will help

[6] See Boundary TAC Meeting 2 (August 26, 2014), pages 5-9 of packet.

[7] At Boundary TAC Meeting 4 (November 18, 2014), the Phase 2 Milestones chart was updated to reflect the Stage 2 Base Mapping and Stage 2 Scenario Evaluation labels consistently used in Table 1 at Meetings 4, 5 & 6.

to narrow the scope of the study area to focus on the areas that rank higher and inform the development of better scenarios.

Three maps for Factor 4 are included in Appendix F (page 82 of packet)

- The first map is included for information purposes only. It shows the location of exception lands within the 2-mile study area relative to lands zoned Forest and EFU. Forest and EFU zoning is screened back to a lighter color beyond the 2-mile study area.
- The second map categorizes exception parcels based on distance from Forest zones.
- The third map categorizes exception parcels based on distance from High Value EFU zoned parcels.

Proximity to Forest Zone

The map on page 83 implements the standard color theme for all Stage 2 mapping. Zoned forest land is concentrated the west of the existing UGB. Therefore, all exception land that is more than 1 mile from zoned Forest land is colored green (good). This includes exception parcels located north, east, and south (portions) of the UGB. Exception parcels that are contiguous or within ¼ mile of zoned Forest land are colored red (poor). Exception parcels that are within 1 mile, but are not contiguous with zoned Forest land are colored lighter green (fair).

Again, the intent of this map is to quickly categorize and highlight where exception parcels are in closer proximity (within 1 mile) to zoned Forest land. Staff with Deschutes County has confirmed that there is no difference between the F-1 and F-2 Forest Zones based on resource productivity or minimum parcel size.

Proximity to High-Value EFU Parcels

The map on page 84 implements the standard color theme for all Stage 2 mapping. Zoned EFU parcels are concentrated to the north and east of the existing UGB. Therefore, all exception land than is more than one mile from “high value” EFU zoned parcels is colored green (good). As shown on the map, this includes exception lands to the west, south and northeast of the existing UGB. Exception parcels that are adjacent are within ¼ mile of “high value” EFU zoned parcels are colored red (poor). Exception parcels that are within 1 mile, but are not contiguous with “high value” EFU zoned parcels are colored lighter green (fair).

Deschutes County maintains a unique set of farm sub-zones based on the average number of irrigated acres for each type of farm land as determined in a 1992 farm study. Irrigated land divisions in each sub-zone must result in parcels that retain the acreages shown in the table below. Minimum acreages were defined based on the typical number of irrigated acres used by commercial farms in that particular subzone (with the exception of the Horse Ridge subzone).[8]

[8] Information in December 9, 2014 e-mail from Peter Gutowsky, Deschutes County Planning Manager.

Exclusive Farm Use Subzones

Subzone Name	*Minimum Acres*	*Profile*
Lower Bridge	130	Irrigated field crops, hay and pasture
Sisters/Cloverdale	63	Irrigated alfalfa, hay and pasture, wooded grazing and some field crops
Terrebonne	35	Irrigated hay and pasture
Tumalo/Redmond/Bend	23	Irrigated pasture and some hay
Alfalfa	36	Irrigated hay and pasture
La Pine	37	Riparian meadows, grazing and meadow hay
Horse Ridge East	320	Rangeland grazing

Source: Deschutes County 1992 Farm Study

Shaded zones are within 2-mile study area for Bend UGB.

Each sub-zone is therefore independent from the other. The distinguishing factor is irrigation. Therefore, the statutory priorities are as follows:

1. Exception land (Urban Reserve, Rural Residential 10, Multiple Use Agriculture-10)
2. Dry EFU
3. Partially irrigated EFU (less than the minimum land division amount per the sub-zone)
4. Irrigated EFU (per sub-zone)

Using this guidance, the "high-value" EFU parcels were identified using GIS layers that showed:

- Whether the parcel included the minimum acres for the zone (36 acres for Alfalfa sub-zone, 23 acres for Tumalo/Redmond/Bend subzone); and
- Whether the parcel was irrigated.

Again, the intent of this map is to quickly categorize and highlight where exception parcels are in closer proximity (within 1 mile) to "high value" EFU zoned parcels.[9]

After UGB scenarios have been formed for analysis in Stage 4 (using Envision and other tools), the project team will do a literature review and gather available data to describe and assess

[9] Note that this use of the phrase "high value" refers to parcels in the two subzones that may have enough irrigated acres of land for their respective subzone and may not capture parcels that are irrigated and composed predominantly of soils considered "high value farmland" according to DCC 18.04.030.

compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB, as required by Factor 4. The Stage 2 maps will help to identify "nearby" lands.

This will be a qualitative evaluation, because compatibility is not something that can be easily measured. However, the project team would expect to address potential compatibility issues associated with closer interface of urban and forest/EFU activities. For example, this could include consideration of trespass, vandalism, increased fire risk, wildlife disturbance, displacement of irrigated lands, etc.

Questions for the Boundary TAC

1. Does the map on page 83 of the packet capture the Factor 4 indicator regarding proximity to zoned Forest land?

2. Does the map on page 84 of the packet capture the Factor 4 indicator regarding proximity to "high value" zoned EFU land?

3. Does the TAC recommend using these two maps to help inform the development of UGB scenarios and/or consideration of appropriate land uses in Phase 2 of the project?

UPDATES TO TABLE 1

Table 1 was first introduced in the packet for the November meeting. The TAC discussion at that meeting focused on "key indicators" for Stage 2 base mapping for all four factors of Goal 14. Table 1 was expanded in the packet for the December meeting to include:

- Greater detail on the proposed Stage 2 indicators for Factor 2 (Orderly & Economic Public Facilities); and
- Additional details on the analysis tools (models) and measures that could be used for the evaluation of scenarios in Stage 4 relative to transportation, water, sewer and stormwater facilities. Of the four factors of Goal 14, Factor 2 is most dependent on use of models (including Envision, the Travel Demand Model and Optimization) to provide the data and analysis required by the Goal 14 administrative rule.

Table 1 is included again below, with references provided to Stage 2 maps included in this packet. The project team assumes that Table 1 will continue to be refined based on TAC input and finalized at Meeting 7 of the Boundary TAC (scheduled for February 24, 2015).

Table 1. Goal 14 Factors

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
Factor 1: Efficient accommodation of identified land needs	
Analysis Tool: GIS • 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 CC&Rs prohibit or limit additional development *See Appendix A – page 41 of packet*	**Analysis Tool: Envision** • Urbanized acres • New housing units built inside vs. outside existing UGB in 2028 (# and %) • New jobs located inside vs. outside existing UGB in 2028 (# and %) • Estimated average density for housing and jobs in 2028 (units/acre and jobs/acre – measure for entire scenario and associated UGB expansion area) • Percent of new growth accommodated through infill/redevelopment by scenario
Factor 2: Orderly and economic provision of public facilities and services	
Transportation	
Analysis Tools: GIS & existing transportation modeling data • **Barriers**: Consideration of physical barriers to connectivity (new river crossings, railroad crossings, steep slopes, etc.). *See Appendix E – page 72 of packet* • **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. *See Appendix E – page 73 of packet* • **System Connectivity**: Consideration of whether the existing major roadway network meets ideal grid-spacing (e.g., one-mile spacing for arterials and half-mile	**Analysis Tool: Envision** • VMT/capita • VMT/facility type (including trip-type) • Mode split • Housing & jobs within ¼ mile of transit corridors (# and %) • Intersection density • # of new lane miles • Rough costs for transportation improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Travel Demand Model** • Scenario balances VMT between highway and other street classifications and between trip types (local, city-wide, regional) • Scenario supports system that provides logical connections and progression of

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
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. *See Appendix E – page 74 of packet*	system hierarchy (local street – collector – arterial – highway) • Scenario balances flow across available facilities and improves utilization of under-capacity roadways (congestion analysis) • Scenario better balances number of system lane miles for both state and local system • Scenario improves grid system for pedestrian/bicycle travel • Scenario supports efficient transit corridors • More detailed types and costs of transportation improvements including the need for new transportation facilities, such as highways and other roadways, interchanges, arterials and collectors, additional travel lanes, other major improvements (identified by scenario and UGB expansion area associated with each scenario)
Water	
Analysis Tool: GIS & existing water system master plan information • **Gravity system (City of Bend)**: Consideration of exception areas that could be served by gravity by City of Bend *See Exhibit E – page 75 of packet* • **Pressure zones:** Consideration of pressure zones with existing water storage capacity. *The project team has concluded that it is not feasible to rank exception areas based on pressure zones in the Stage 2 mapping. However, this will be considered in the Stage 4 scenario evaluation for water facilities.*	**Analysis Tool: Envision** • Acres served by gravity system by scenario • Rough costs for water improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Optimization** • New housing units & jobs (# and %) within pressure zones with storage by scenario • Additional water storage facilities required by scenario • More detailed types and costs of water system improvements by scenario – along with roll up as cost per acre for expansion area associated with each scenario

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
Sanitary Sewer	
Analysis Tool: GIS & existing sewer system master plan information • **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. *See Appendix E – page 76 of packet*	**Analysis Tool: Envision** • Acres served by gravity system by scenario • Rough costs for sewer improvements ($ per lineal foot) by scenario • Roll up of cost per acre for UGB expansion area associated with each scenario **Analysis Tool: Optimization** • Number of existing pump stations removed by scenario • More detailed types and costs of sewer system improvements by scenario – along with roll up as cost per acre for expansion area associated with each scenario
Stormwater	
Analysis Tool: GIS and existing stormwater master plan information • **Drinking water protection areas**: Consider proximity to drinking water protection areas (DWPA) *See Appendix E – page 79 of packet* • **Surface geology**: Consider presence of surface geology (welded tuff) that limits on-site stormwater management. *See Appendix E – page 77 of packet* • **Water quality limited streams**: Consider proximity to water quality limited streams. This could be illustrated by a map showing areas outside the UGB inside the study area that drain to Tumalo Creek and the Deschutes River.	**Analysis Tool: Envision** • Acres of new development within DWPA by scenario • Acres of scenario with welded tuff geology • Acres of scenario draining to water quality limited streams

Stage 2 – Base Mapping Purpose: Prioritize exception lands within Study Area based on proposed **key indicators**	Stage 4 – Scenario Evaluation Purpose: Evaluate alternative scenarios based on proposed **performance measures**
The project team does not recommend retaining this indicator for Stage 2 base mapping.	
Factor 3: Comparative environmental, social, economic and energy consequences (ESEE)	
Analysis Tool: GIS • 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 • Proximity to existing or planned parks, trails, elementary schools *Stage 2 Base Maps for Factor 3 will be provided at the February meeting*	**Analysis Tool: Envision** • Development (acres, number of housing units, number of jobs) in areas where Goal 5 resources are present • Development (acres, number of housing units, number of jobs) in Goal 7 hazard prone areas • Housing units within walking distance of existing/planned elementary schools, parks and trails in 2028 (# and % of total units) • Housing mix & affordability by income level • Jobs housing balance (by TAZ or quadrant) • Greenhouse gas emissions • Total impervious surface area • % of job growth in downtown Bend
Factor 4: Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB	
Analysis Tool: GIS • Proximity to designated forest land *See Appendix F, page 83 of packet* • Proximity to designated high-value agricultural land (irrigated) *See Appendix F – page 84 of packet*	**Analysis Tool: Envision** • Perimeter of proposed UGB in proximity to designated forest land (lineal feet/miles) relative to existing UGB • Perimeter of proposed UGB in proximity to designated high-value agricultural land (lineal feet/miles) relative to existing UGB • Designated forest or agricultural land included in scenario, if any (acres)

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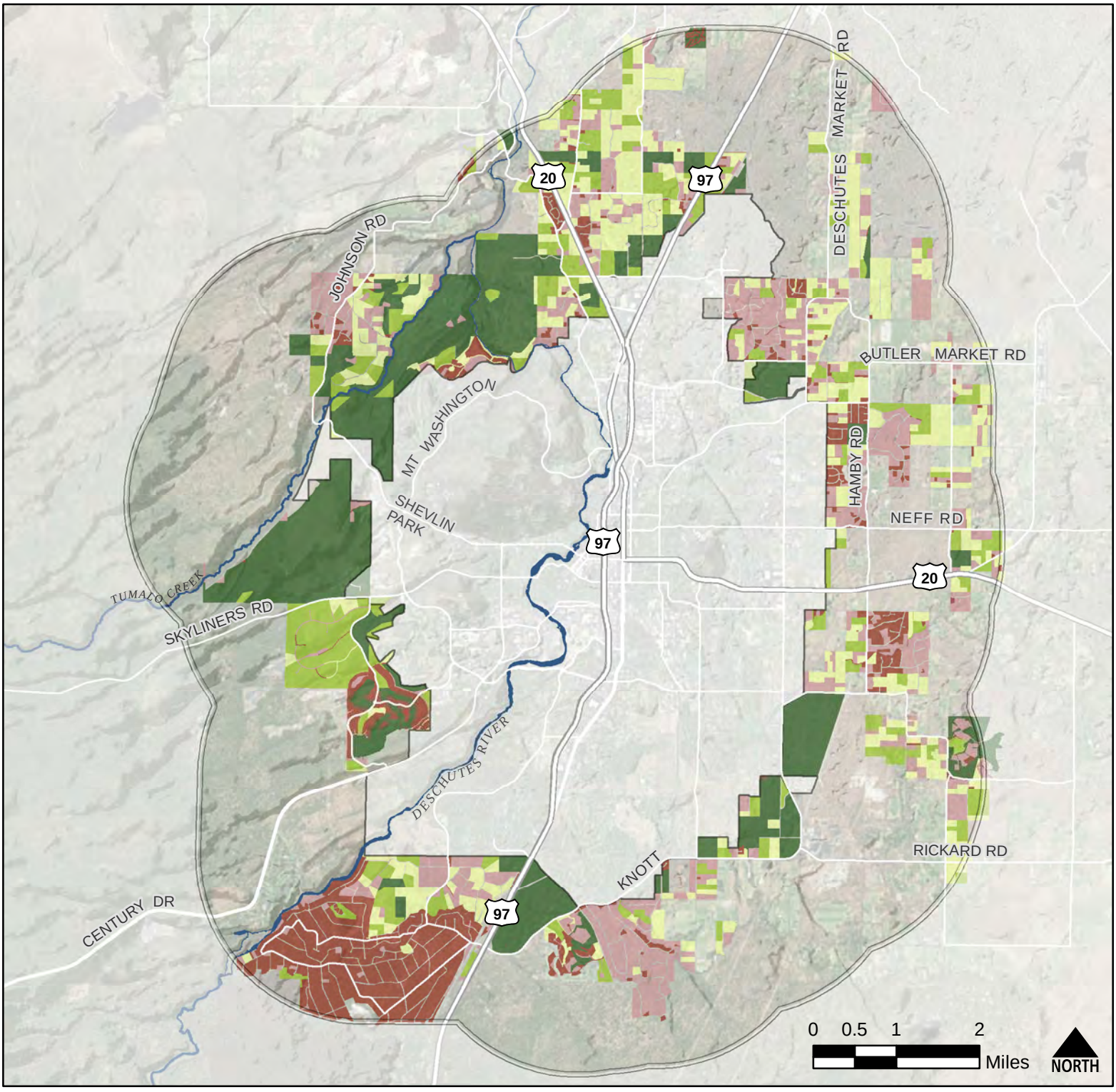
Appendix A:
Factor 1 Maps

STAGE 2 MAPS FOR FACTOR 1 OF GOAL 14: EFFICIENT ACCOMMODATION OF IDENTIFIED LAND NEEDS

- **Parcel Size**
- **Improvement to Land Value Ratio**
- **Distance from UGB**
- **Steep Slopes (>25%)**
- **Subdivisions with Known CC&Rs**

Priority 2 Exception Land Parcel Size



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

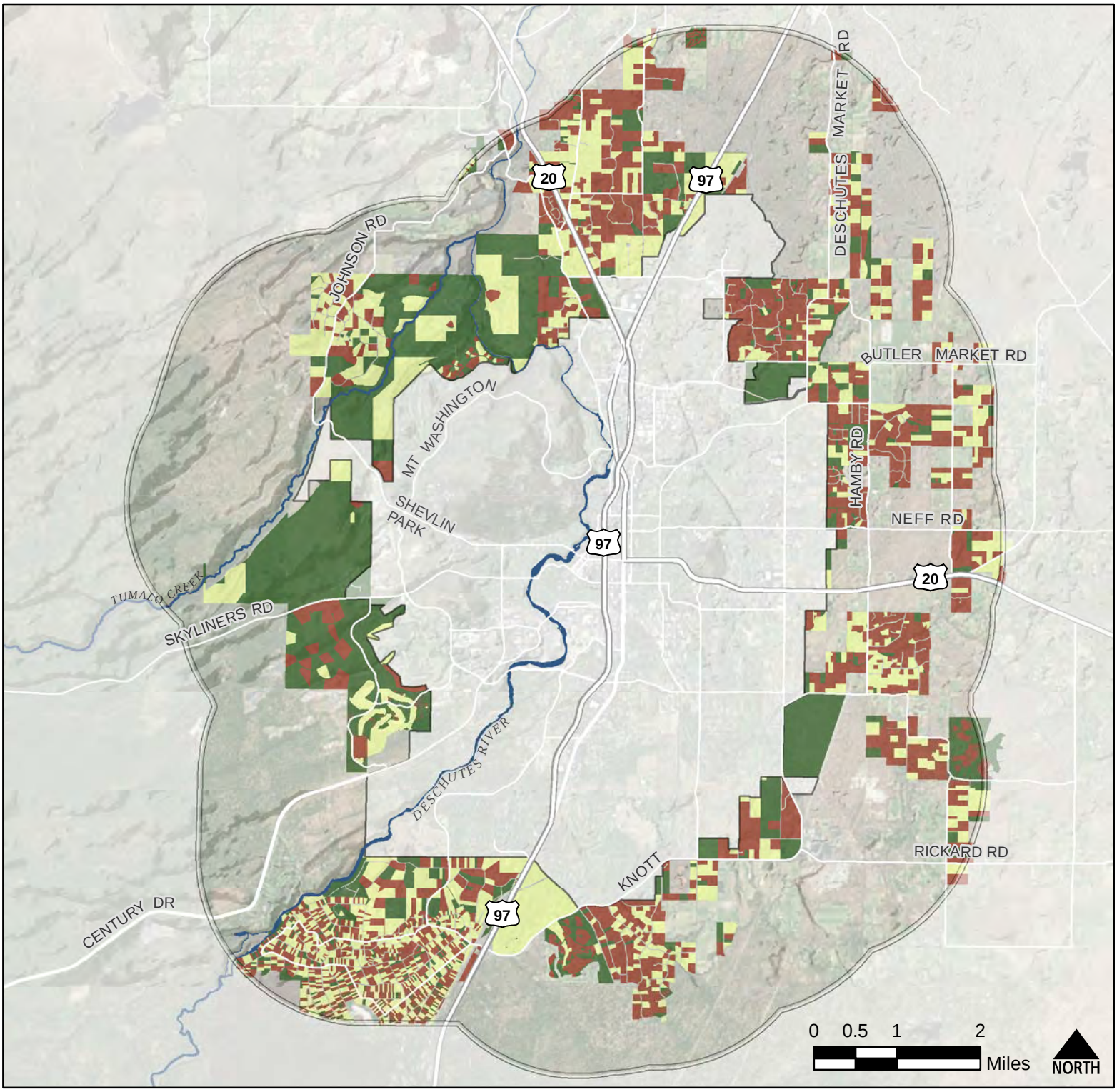
Prepared 1/2/2015

Improvement to Land Value Ratio

- 2 Miles from UGB
- Urban Growth Boundary
- Streams/Rivers
- Roads/Highways

Exception Land Improvement to Land Value Ratio

- No Improvement Value
- 1 and Below (Improvement less than Land Value)
- Above 1 (Improvement more than Land Value)



URBAN GROWTH BOUNDARY REMAND
BEND

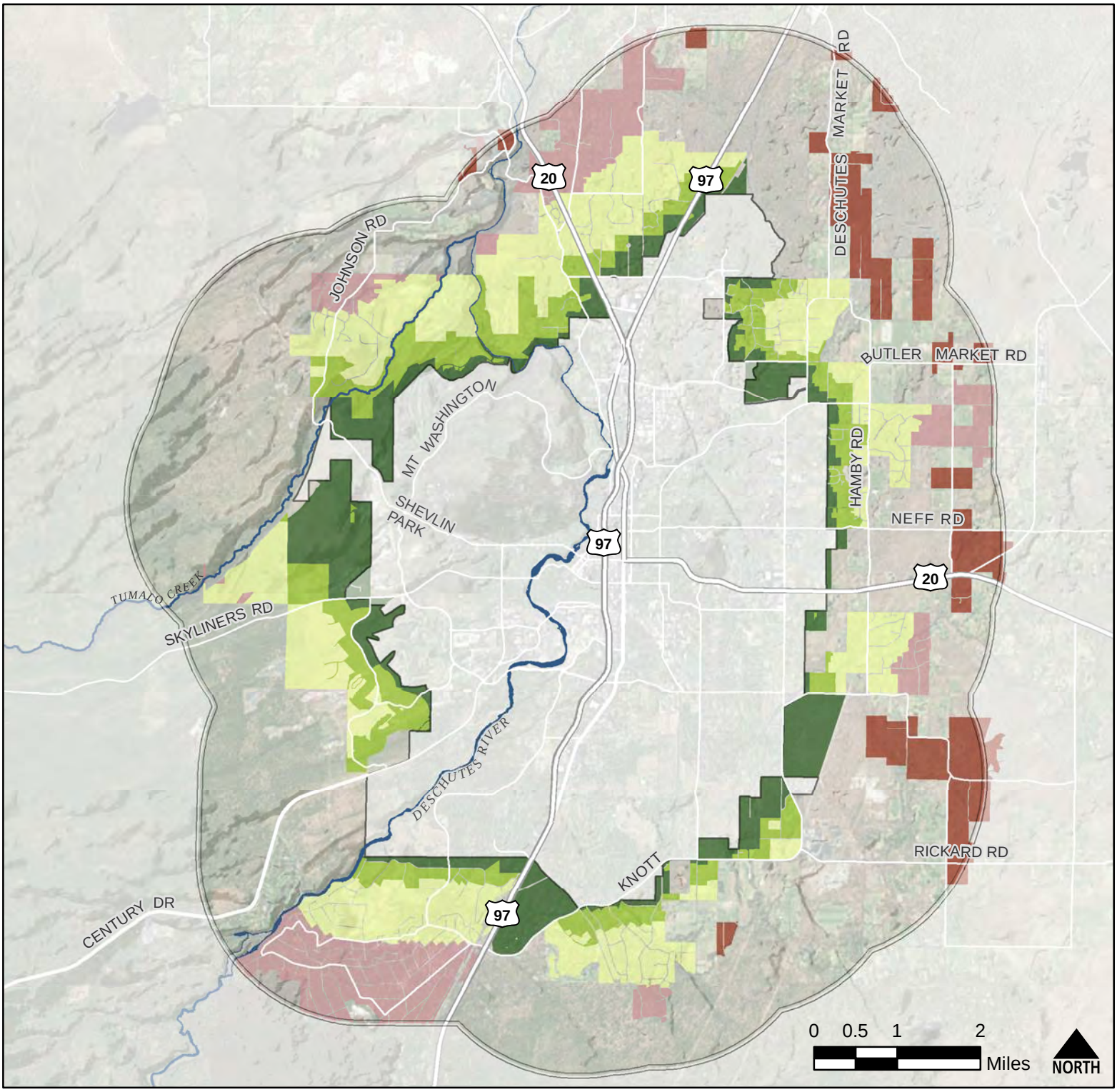
Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/20/2015
03216

Taxlot Distance from UGB

2 Miles from UGB
Urban Growth Boundary
Streams/Rivers
Roads/Highways

Exception Land
Contiguous
Within .25 miles
Within 1 mile
Greater than 1 mile
Separated from UGB by Resource Land



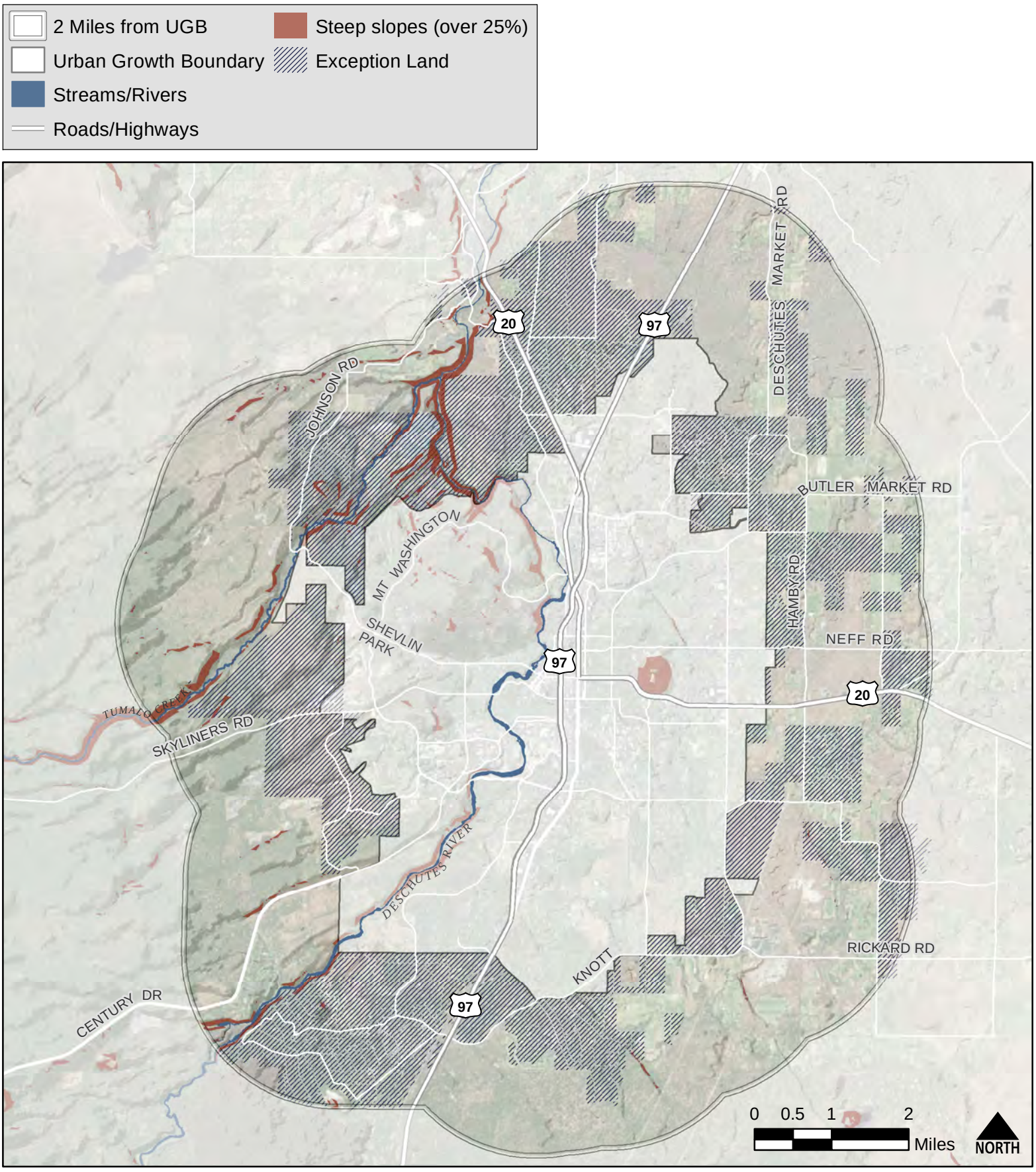
URBAN GROWTH BOUNDARY REMAND
BEND

Note: Distance from UGB is from individual tax lots. If a tax lot is contiguous, then the whole tax lot is shown as contiguous even though portions may be farther away.

Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/20/2015
03217

Steep Slopes

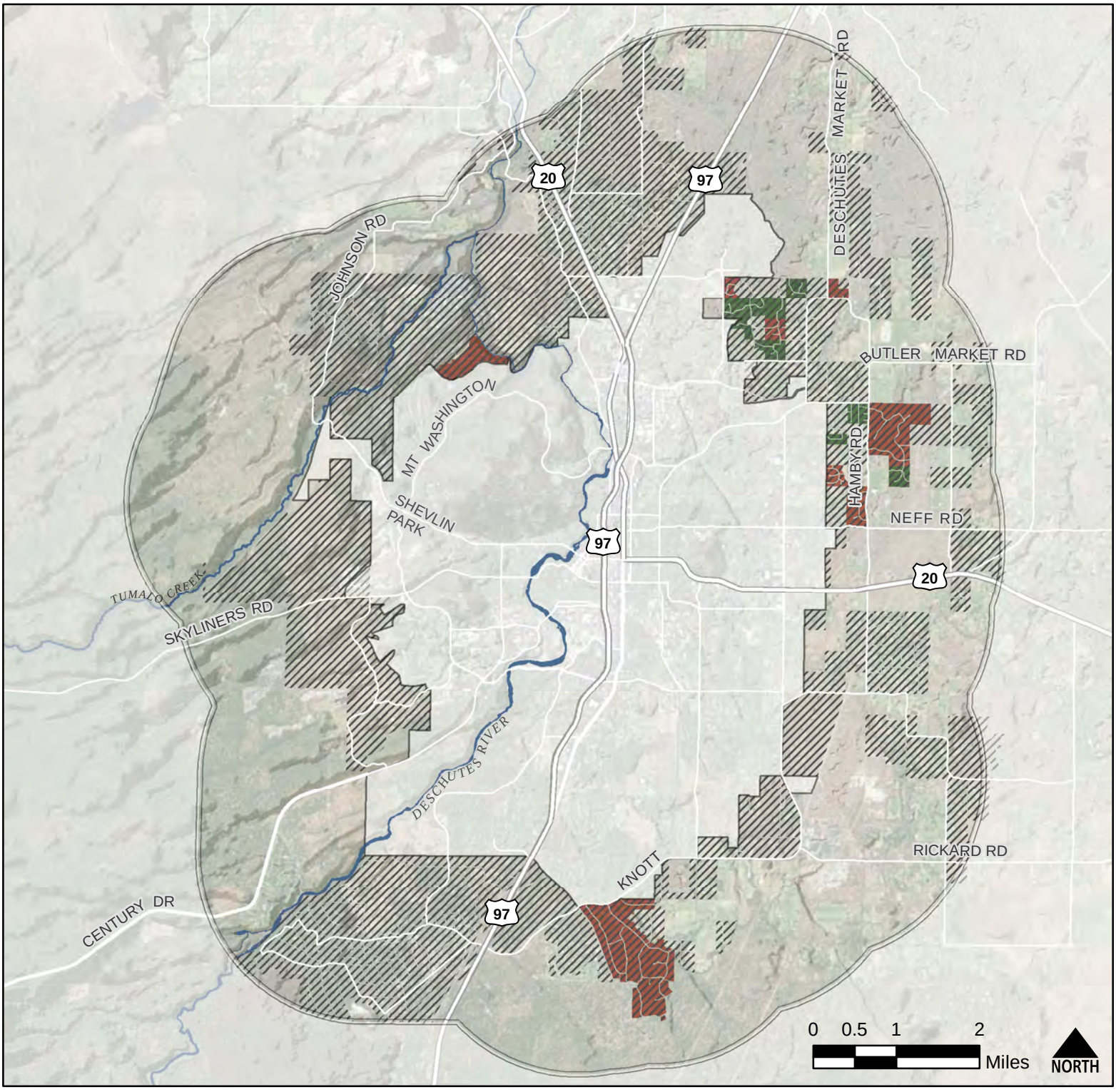


URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/20/2015

Subdivisions with Known CC&Rs



URBAN GROWTH BOUNDARY REMAND

Note: analysis of known CC&Rs is a work in progress and subject to change.

Service Layer Credits: Remand Record (entered 12/01/2008); Deschutes County GIS (2014)

Prepared 1/20/2015

Appendix B:
General Plan Goals & Policies

EXCERPTS FROM BEND AREA GENERAL PLAN

- **Chapter 7 – Transportation Systems**
- **Chapter 8 – Public Facilities & Services**

  Sewer Collection Facilities

  Water Facilities and Systems

  Storm Drainage Facilities and Systems

Bend Area General Plan - Infrastructure Goals & Policies

Chapter 7 Transportation Systems

TRANSPORTATION GOALS

Mobility and Balance:

- Develop a transportation system that serves all modes of travel and reduces the reliance on the automobile.
- Provide a variety of practical and convenient means to move people and goods within the urban area.

Efficiency:

- Address traffic congestion and problem areas by evaluating the broadest range of transportation solutions.
- Coordinate and design transportation improvements to assure the expenditure of resources in the most cost-effective manner.
- Encourage the development of land use patterns that provide efficient, compact use of land, and facilitate a reduced number and length of trips.

Accessibility and Equity:

- Provide people of all income levels with the widest range of travel and access options within the Bend urban area.
- Provide all transportation modes access to all parts of the community.

Environmental:

- Recognize and respect the natural features over which transportation improvements pass to minimize adverse impacts.
- Design transportation improvements to preserve air and water quality, minimize noise impacts, and encourage energy conservation.

Economic:

- Implement transportation improvements to foster economic development and business vitality.

Livability:

- Design and locate transportation facilities to be sensitive to protecting the livability of the community.

Safety:

- Design and construct the transportation system to enhance travel safety for all modes.

TRANSPORTATION POLICIES

6.9.1 TRANSPORTATION AND LAND USE

4. Developments at the edge of the urban area shall be designed to provide connectivity to existing and future development adjacent to the urban area.

8. The City shall explore incentives for re-development of existing commercial strips in order to help reduce the need to expand the Urban Growth Boundary.

9. As areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized, the city, property owners, developers and all applicable service districts shall work cooperatively to develop appropriate plans for extensions and connections of the transportation system, including but not limited to; roads, sidewalks, trails and/or public transportation. The objective of this planning effort will be to ensure that the new areas promote and facilitate the development of urban land use densities and systems that will fulfill the goals and objectives of the Transportation System Plan – see also: 6.9.4, Policy 22.

6.9.2 TRANSPORTATION SYSTEM MANAGEMENT

2. The City shall ensure that land use actions support the access management policies of the Oregon Department of Transportation along the state highways located in the urban area.

6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS

1. The City, County, State, Forest Service, Park District and public agencies shall work together to acquire, develop and maintain a series of trails along the Deschutes River, Tumalo Creek, and the canal system so that these features can be retained as a community asset. Connections between the Bend Urban Area Bicycle and Trails System should be made to the USFS trail system.

4. The City shall develop safe and convenient bicycle and pedestrian circulation to major activity centers, including the downtown, schools, shopping areas and parks. East-west access to the downtown area needs particular emphasis across major obstacles, such as 3rd Street, the Bend Parkway and the railroad.

9. The City's top priorities for pedestrian improvements are:

   a) Sidewalks and trail system in-fill and school walking routes,

   b) Retro fitting existing sidewalks along select collectors and arterials into property tight sidewalks and

   c) The construction of pedestrian-oriented improvements (other than regular sidewalks, e.g., curb extensions) and elimination of pedestrian barriers.

   These projects will be identified and prioritized in the CIP.

22. As land areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized and as it relates specifically to the Bend Primary Trail System, external destinations (beyond the UGB) and specific connection points (within the existing UGB) have been delineated on the Bend Urban Area Bicycle and Pedestrian System Plan [Map A] – see also: 6.9.1, Policy 9.6

6.9.5 PUBLIC TRANSPORTATION SYSTEM

2. The City shall develop a public transportation system that accommodates the needs of Bend residents and visitors in order to reduce reliance on the automobile.

6. The City shall work with other governmental agencies to develop a 20-year transit master plan. The plan shall include but is not limited to routing maps, the type and location of required infrastructure, marketing/public education plan, development/redevelopment requirements for transit, and funding mechanisms. Ordinances shall be adopted that implement the Master Plan.

6.9.6 STREET SYSTEM

1. Streets shall be located, designed and constructed to meet their planned function and provide space for adequate planting strips, sidewalks, motor vehicle travel and bike lanes (where appropriate). Specific effort should be made to improve and enhance east-west circulation patterns for all modes of travel throughout the community.

14. A grid-like pattern of residential local streets shall be developed whenever practical in order to increase street connectivity within a neighborhood. A system of local streets shall be developed within a framework that is defined by the Bend Urban Area - Bicycle and Pedestrian System Plan (TSP: Map Exhibit B), as much as practical.

21. The City shall evaluate the effect of transportation demand management (TDM) and transportation system management (TSM) measures that would successfully eliminate or delay the need for minor arterial street widening beyond the existing travel lanes within the twenty-year design life of a proposed roadway project. Transportation system computer modeling is one acceptable evaluation method that can be used to assist in the assessment of forecast travel demand and the associated vehicle travel lane needs.

27. The state highway system (i.e., Highways 97 and 20, Century Drive and the Parkway) shall be designated as the through truck route system. Trucks shall be permitted on the City and County arterial street system for local trip activity, unless otherwise restricted.

7.5 TRANSPORTATION FUNDING AND PRIORITIZATION POLICIES

7. The Financing Program projections show that sufficient funding will be available to build the twenty-year needs of the transportation system that are included in the TSP and further defined as the near- and mid-term priorities. However, if existing and future funding levels do not fully cover increased demand on the system, the City Council may accept additional congestion on the roadway system to allow transportation projects to be postponed beyond the planning period.

Chapter 8 Public Facilities & Services

Goals

Adequate public facilities are the key to efficient and stable urban development. The goals below provide general guidance for maintaining and improving the level and quality of urban services as growth occurs in Bend. The citizens and elected officials strive:

- To have public and private utility systems provide adequate levels of service to the public at reasonable cost;
- For the city, county, and special districts to coordinate the provision of adequate urban services in an efficient and timely manner to support urban development;
- For new development to pay its fair share of the cost of major facilities needed to support development;
- To ensure that public services will not negatively impact the environment or the community; and
- To locate and operate public buildings and other public facilities to best serve the needs of the residents.

Policies

Sewer Collection Facilities (amended by Ordinance No. 2231 on December 17, 2014)

1. All new development within the Urban Growth Boundary should be connected to City sewer.

2. The city is the primary provider of sewage collection and treatment services for the City's service area under Statewide Planning Goal 11.

3. To reduce the reliance on individual sewage disposal systems within the Urban Growth Boundary the city will work with unsewered neighborhoods to find solutions for sewer service.

4. The city shall collect a sufficient amount of revenue to allow the creation of capital project reserves and to replace aging infrastructure in addition to operational needs of the utility.

5. Staff shall report to Council on an annual basis regarding the status of the Collection System Master Plan, Capital Improvement Projects and capacity issues within the collection system.

6. The City will annually update its financial model as part of the review of sewer rates and report to Council on any changes in the 20-year financial outlook and subsequent rate impacts.

7. The master plan shall be updated at least every 5 years with official review and adoption by Council.

8. The preference of the City is to serve development through gravity conveyance and use of the Water Reclamation Facility.

9. If lift stations are required to serve new development, regional pump stations shall be relied upon to the extent practicable versus individual or smaller lift stations.

10. These policies will be implemented through the City of Bend Public Improvement Construction Procedure Standards & Specifications.

11. The City should look for reasonable opportunities to decommission energy- and maintenance-intensive lift stations as part of new development or other City infrastructure projects.

12. The City will consider the conservation and water reuse measures in the Water Management and Conservation Plan in infrastructure planning to reduce overall impacts to the sewer collection and treatment system.

Water Facilities and Systems (amended by Ordinance No. 2194 on April 3, 2013)

13. The City of Bend is the provider of water service for the City's service area under Statewide Planning Goal 11.

14. Avion Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Avion adopted under Ordinance NS 1514, as amended.

15. Roats Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Roats adopted under Ordinance NS 1747.

16. Within the urban planning area, public and private water systems shall be consistent with City Standards and Specifications for construction and service capabilities.

17. The City shall continue to coordinate with private providers and irrigation districts in matters of water concerns within the Urban Growth Boundary.

18. The City shall continue to implement a water conservation program that emphasizes education, enforcement, metering, and other methods to use water efficiently.

Storm Drainage Facilities and Systems (amended by Ordinance No. 2230 on December 17, 2014)

19. The City of Bend is the stormwater utility for the city limits and urban growth boundary. As the utility, the City shall review its Stormwater Master Plan and Integrated Stormwater Management Plan as needed for compliance with changes in state or federal requirements and at least every five years.

20. The City will initiate funding options (e.g., SDCs, grants, low-income loans) for stormwater capital projects in accordance with applicable laws.

21. Due to the lack of a defined drainage pattern for most of the urban area, development shall, to the extent practicable, contain and treat storm drainage onsite. In instances where containing storm drainage on-site would not be safe or practicable, the developer shall enter into a formal and recorded arrangement with the City or a private party to adequately address the storm drainage off site such as a regional control.

22. The use of stormwater disposal systems shall be coordinated with the Oregon Department of Environmental Quality and Water Resources Department to protect ground water and surface water.

23. The City shall work to minimize the discharge of untreated stormwater run-off from streets directly into the Deschutes River and Tumalo Creek.

24. All public and private stormwater facilities shall be designed and operated in accordance with the City's Stormwater Master Plan and shall meet appropriate drainage quantity and quality requirements, including, but not limited to, the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Stormwater Permit, Integrated Stormwater Management Plan, WPCF UIC Permit and any applicable Total Maximum Daily Load requirements (TDML) requirements. Underground injection and surface discharges to the Deschutes River or Tumalo Creek shall only be approved when other alternatives, such as retention basins or bioinfiltration swales, are not reasonably available. Low impact site designs shall be a required part of all new development and redevelopment projects.

25. The ability to provide stormwater facilities for developments proposed for annexation into the City shall be a consideration for annexation approval.

26. The City shall reduce the quantity of runoff and discharge of pollutants to the maximum extent practicable by integrating stormwater runoff controls into new development and redevelopment land use decisions. Controls may be required to minimize illicit discharges or pollutants of concern.

27. The City shall implement and enforce requirements for an erosion and sediment control program for public and private construction and post-construction activities.

28. All developments shall evaluate the potential of a land parcel to detain excess stormwater runoff and require incorporation of appropriate controls, for example through the use of detention facilities to address quantity, flow, and quality concerns.

29. The City shall seek efficiencies and consistency by working with other municipalities and stakeholders within Central Oregon on land use issues to address flood control, watershed health and stormwater pollution prevention.

30. Hazard and resource areas with the following characteristics shall be considered unsuitable for urban development:

- flood zones;
- water supply watersheds; and
- riparian corridors and natural drainageways.

31. Development on slopes in excess of 10 percent shall require special consideration to prevent construction-related and post-construction erosion.

32. The City shall regulate development near water courses to reduce erosion and pollution and to provide open, natural areas.

33. Land uses that pose a major threat to water quality, including commercial and industrial uses such as automobile dismantlers, waste transfer disposal facilities, light industries, and other uses that have a

significant potential for pollution, shall not be located within the vicinity of stream, percolation facilities, reservoirs, drill holes or where pollutants could easily come in contact with flood waters, high groundwater, flowing rivers, or reservoirs. Such uses shall be required to reduce any threat of pollution to an insignificant level as a condition of approval.

34. As part of site approval, or as a condition on tentative maps, as necessary, the City shall require permanent stormwater pollution control site design or treatment measures or systems and an ongoing method of maintenance over the life of the project.

35. The City shall minimize particulate matter pollution through controls over new and redevelopment (including erosion and sediment controls on grading, quarrying, vegetation removal, construction, and demolition), industrial processes, parking lots and other activities that pose a threat to water quality.

36. The City shall require the following stormwater protection measures for all new development and redevelopment proposals during the planning, project review, and permitting processes:

- Submit geotechnical site assessments when dry wells or other infiltration or injection systems are proposed.
- Avoid conversion of areas particularly susceptible to erosion and sediment loss (e.g., steep slopes) or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- Retain natural drainage channels in their natural state to prevent undue erosion of banks or beds, and preserve or restore areas that provide water quality or quantity benefits and/or are necessary to maintain riparian and aquatic biota.
- Promote site development that limits impacts on, and protects the natural integrity of topography, drainage systems, and water bodies.
- Promote integration of stormwater quality protection into construction and post-construction activities at all development and redevelopment sites.

37. The City shall work to reduce transportation-related sources of water pollution, particularly in stormwater pollution. Any means and actions that result in a reduction in vehicle-miles-traveled would benefit congestion and reduce both air and water pollution.

38. The City shall recognize and publicize the relationship between air pollution and water pollution in the deposition of airborne contaminants, including metals and fine particulate matter onto streets and other surfaces.

39. To minimize illicit discharge to stormwater and groundwater from septic systems, the City shall require lots with onsite sewage disposal to connect to the city sanitary sewer whenever state rules governing connection are met.

Appendix C:
DKS Memo

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER

DKS MEMO – TRANSPORTATION FACILITY INDICATORS AND STAGE 2 MAPS

- **Physical Barriers to Connectivity**
- **2040 Reliance on Congested Corridors**
- **Connectivity to Complete Roadway**

MEMORANDUM

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

DATE: January 20, 2015

TO: Mary Dorman, APG

FROM: Chris Maciejewski, P.E., PTOE
Julie Sosnovske, P.E.
Garth Appanaitis, P.E.

SUBJECT: Bend UGB Remand Project
Transportation Facility Indicators and Stage 2 Maps P#14073-000

The purpose of this memorandum is to summarize the indicators developed for transportation in the Stage 2 base mapping stage for the Bend UGB analysis. As discussed at the November Boundary TAC meeting, in the Stage 2 base mapping, the project team proposes to use a few key indicators of the Goal 14 factors to help identify the best land to include in boundary scenarios. This stage of analysis will help to narrow the scope of the study area to focus on the areas that rank higher and inform the development of better scenarios. The following sections describe the tools and context that will be used to aid the Stage 2 mapping for transportation. In the Scenario Evaluation (Stage 4), we will use more robust and comprehensive models to evaluate alternative scenarios. This will include the Envision Tomorrow tool, sewer & water optimization and transportation modeling.

BACKGROUND

As described in the December 10th, 2014 Draft Methodology for Consideration of Orderly & Economic Public Facilities memorandum, the transportation related UGB Project goals include a "Balanced Transportation System" and a "Cost Effective Infrastructure". These goals were considered in developing four principles for planning and evaluating the study area in the Stage 2 base mapping, and each principle is consistent with current City plans and past project work (e.g., the NE Bend Transportation Study). In general, there is some overlap in how the principles meet the overarching goals, as improving the balance of the transportation system can help improve the cost effectiveness. For example, if the balance of system flows is improved to utilize corridors that are below capacity, the cost for improving the system can be reduced by avoiding improvements to major congested corridors with constrained right of way.

To expand on the four principles and develop a series of key indicators that can be utilized in the base mapping for Stage 2, the project team considered what existing plan and data resources are available and relevant. These indicators and a description of the tools utilized to evaluate them include:

- **Barriers** – This indicator considers how existing topographic and infrastructure features could limit the ability to provide adequate transportation facilities into and through exception lands. GIS files of steep slopes, rivers, and railroads indicate generally where the construction of new transportation facilities may be infeasible or high-cost.

- **System Connectivity** – The connectivity indicator considers how well exception lands can be connected into an existing (or planned) City network of arterials and collectors, within the UGB, as well as how feasible an arterial/collector grid would be in the exception lands. The City's Transportation System Plan functional classification system provides the data for facility locations. An evaluation of adjacency of exception lands to a desired grid (i.e., 1-mile arterial spacing and ½-mile collector spacing) indicates generally where expansion areas can readily provide route choices and adequate system hierarchy, resulting in balanced flows and travel choices for all modes.
- **Bottlenecks** – This indicator informs the cost component of future transportation infrastructure by considering how development in exception lands would rely upon (and would add traffic volume to) congested facilities that would be costly to mitigate (i.e., no solutions have been identified to-date that are feasible and/or reasonably likely to fund). The Bend MPO, which includes the City, ODOT, and Deschutes County, recently completed an update to the Bend MPO Metropolitan Transportation Plan (MTP) that established anticipated revenue streams through the year 2040, how those revenues would be expended to address transportation issues based on existing and future demands, and how the system would perform under those growth and investment conditions. Through this work, a key finding was that the transportation system (including reasonably likely to be funded improvements) could adequately handle anticipated growth levels through 2040 except for three corridors on the state highway system within Bend (see Bend MPO MTP Chapter 6 for additional information[1]). The Bend MPO regional travel demand model, which forecasts the flow of traffic based on where people live, work, shop, and recreate, was utilized to identify which portion of traffic into and out of the exception lands is likely to travel through these three bottlenecks.

STAGE 2 MAP ANALYSIS

Three transportation related maps were developed to highlight key opportunities and constraints relative to the indicators described above for prioritizing exception lands outside of the current Bend UGB. The maps produced are as follows:

- Physical Barriers to Connectivity (see Appendix E of packet)
- 2040 Reliance on Congested Corridors (see Appendix E of packet)
- Connectivity to Complete Roadway Grid (see Appendix E of packet)

Each of the maps categorizes exception lands (good, fair, poor) relative to the three indicators bulleted above.

[1] Bend Metropolitan Transportation Plan (MTP), Chapter 6: Motor Vehicles, BMPO Resolution 2014-06, September 2014, http://www.bend.or.us/modules/showdocument.aspx?documentid=18122

Physical Barriers to Connectivity

Physical barriers to connectivity can include new river crossings, railroad crossings, significant topographic constraints (e.g. canyons, steep slopes, etc.). The Physical Barriers to Connectivity figure shows streams and rivers, railroads, and slopes greater than 25 percent. Exception land connectivity potential was evaluated relative to these barriers. Barriers for subareas of exception land were determined to be minimal, moderate or significant.

The Physical Barriers to Connectivity and the level to which these barriers restrict connectivity for exception lands are shown in the figure. Barriers to various exception land areas are summarized below:

- **North area (between US 97 and railroad tracks):** This area has significant physical barriers to connectivity due to the railroad track to the east and limited access to US 97.
- **North area (between US 97 and US 20):** This area has moderate physical barriers to connectivity due to the limited access available to US 97. Access to and across US 20 is available. There are no significant streams or rivers or slope issues to address.
- **Northwest of US 20 and east of Deschutes River:** Physical barriers between existing facilities and exception lands in this area are minimal. The Deschutes River creates a barrier to the west and south of this area. However, most of this area has good access to O.B. Riley Road, providing access to Bend. Access to and across US 20 is available in several locations.
- **North and west of Shevlin Park Road and Mt Washington Road:** These areas were determined to have significant barriers to connectivity due to both stream/river crossing issues as well as significant slopes to address. The areas north and west of Tumalo Creek have the most significant barriers to connectivity.
- **West Bend and Southwest Areas (south of Shevlin Park Road):** Streams/Rivers to the northwest (Tumalo Creek) and south (Deschutes River) create barriers, however, other barriers are limited and relatively good access is provided into the current UGB. Physical barriers in the area are considered to be moderate.
- **Southwest area (between Deschutes River and US 97):** The Deschutes River creates a barrier to the west and the railroad and US 97 (limited access) creates barriers to the east, however, Brookswood Boulevard provides access into Central Bend. Physical barriers in this area are considered to be moderate.
- **Southeast of Bend and east of Bend (south of Butler Market Road and east of US 97):** These areas were considered to have minimal barriers. While there are railroad tracks in the southeast quadrant of Bend, existing crossings exist and there are no stream/river crossings required or significant slopes to address.
- **Northeast area (north of Butler Market Road and east of US 97):** Physical barriers in this area are moderate. The railroad creates a barrier to the west. There are no significant streams/rivers in this area.

Overall, the most significant physical barriers are the Deschutes River, significant slopes (typically near the Deschutes River and Tumalo Creek) and the railroad. Most areas have minimal or moderate barriers, while the area north and west of Tumalo Creek has significant barriers.

2040 Reliance on Congested Corridors

Using the Bend 2040 travel demand model, three key congested highway corridors were identified based on the recently completed Bend MPO MTP. These corridors include the following:

- US 97 between Robal Road and US 20
- US 97 between Empire Avenue and Colorado Avenue
- US 20 between NE 3rd Street and NE 15th Street

These corridors were flagged in the model and the origins and destinations of trips using any of these corridors were tracked by Transportation Analysis Zone (TAZ). The percentage of trips traveling to or from each TAZ that used at least one of these corridors was then calculated. The exception lands within each TAZ were assumed to have the same percentage of trips using these congested corridors as the TAZ they are associated with. The reliance (percentage of trips) for exception lands is summarized in 2040 Reliance on Congested Corridors.

The map indicates that exception lands in the vicinity of US 97 north of town have a relatively high reliance (greater than 50 percent of trips) on a congested corridor. Exception lands in the vicinity of US 97 south of town have a more moderate reliance (30-40 percent of their trips) on a congested corridor. Some exception lands to the east and west have a moderate reliance on a congested corridor, but for the most part have a relatively low reliance on a congested corridor (less than 30 percent).

Connectivity to Complete Roadway Grid

System connectivity was considered in terms of access to an existing network of arterials and collector roadways within the UGB. This process involved identifying where gaps in the existing arterial/collector system exist, based on approximately one-mile spacing of arterials and one-half mile spacing of collectors. In addition, the feasibility of completing a grid system within each exception land area was also considered (i.e., if the existing roadway grid and development patterns would hinder the construction of complete arterial/collector corridors).

An overall score for connectivity was developed based on these three components as described in Table 1. Each component was weighted equally with a maximum overall score of 6 for each exception lands area. These scores were used to determine a connectivity performance/potential based on the following thresholds:

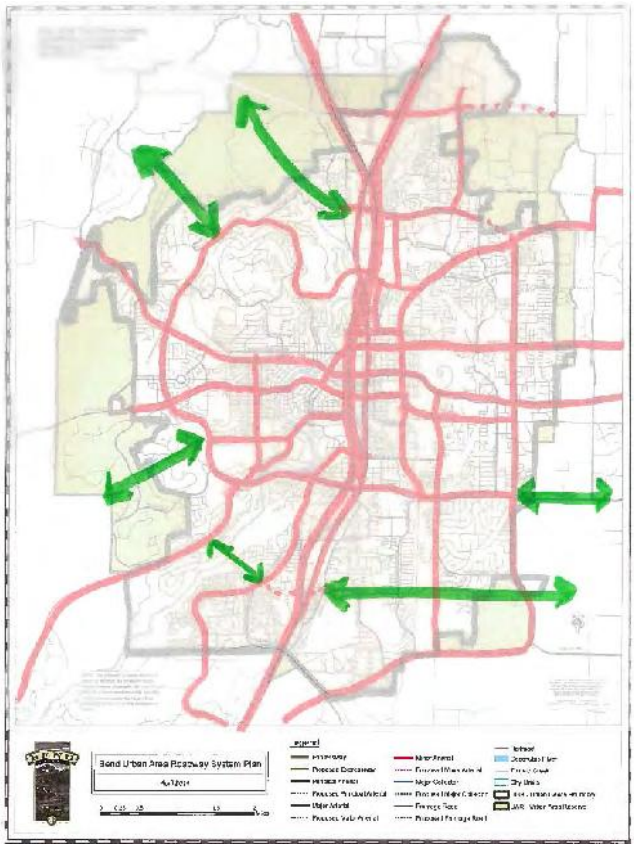
- 0 to 1 – Poor
- 2 to 3 – Fair
- 4 to 6 – Good

Table 1: Summary of Connectivity Scoring

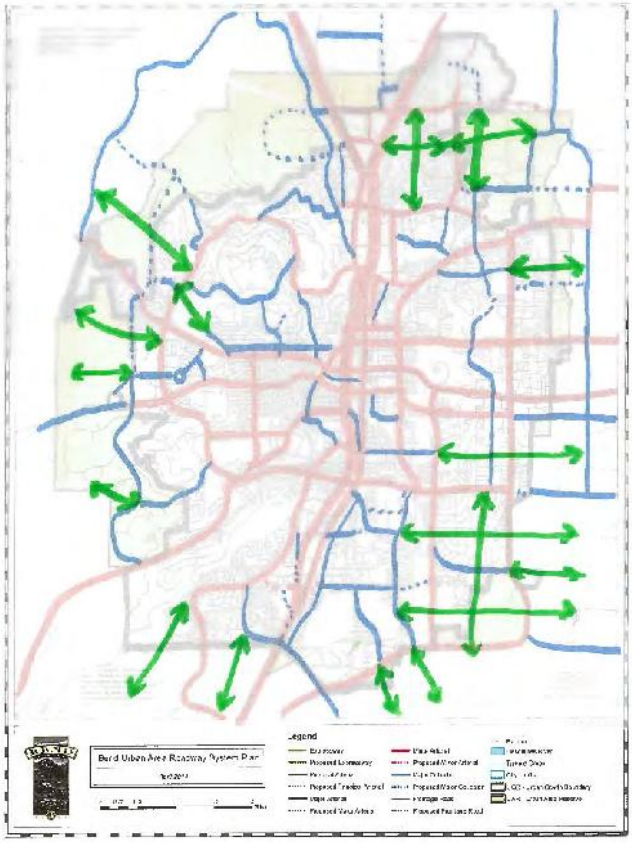
Category/ Scoring	Arterial System (1-mile grid)	Collector System (1/2-mile grid)	Grid in Exception Lands
2 points	Meets grid standard with existing facilities	Meets grid standard with existing facilities	Existing roadway grid meets arterial/collector spacing targets
1 point	Gaps can be filled with "feasible" improvements	Gaps can be filled with "feasible" improvements	An arterial/collector grid would be "feasible"
0 points	Gaps would be difficult or infeasible to fill	Gaps would be difficult or infeasible to fill	An arterial/collector grid would be difficult or infeasible (e.g., existing development would be a barrier)

The sketches below illustrate the process of identifying arterial and collector spacing and gaps for the areas adjacent to the exception lands. Each sketch began with the existing roadway functional class and conceptually expanded the street system to achieve a one-mile arterial spacing and half-mile collector spacing. Green arrows indicate the potential expansion of the arterial/collector grid to achieve the desired spacing.

Arterial System and Gaps



Collector System and Gaps



The Connectivity to Complete Roadway Grid figure shows the connectivity scoring. Opportunities for connectivity to a complete roadway grid for various exception areas are summarized below:

- **North area (between US 97 and US 20) [GOOD]:** This area has a fairly good network of arterials and collectors, or the ability to extend the existing network into potential new areas.
- **North/Northwest area (between US 20 and Deschutes River) [FAIR]:** This area would be difficult to connect to the existing arterial grid, but would have potential for collector connections and the ability to expand the grid.
- **Northwest/West area (west of Deschutes River to Shelvin Park) [POOR**]: This area would be difficult to connect to the existing arterial/collector system within the UGB and would also present challenges to constructing a grid system outside the UGB.
- **West area (west of Deschutes River, Shevlin Park south to Skyliners Road) [GOOD]:** This area currently provides arterial connections, has potential for collector connections, and has potential for filling the grid within the area.
- **Southwest area (south of Skyliners Road to Deschutes River) [FAIR]:** This area would be infeasible for arterial connections due to the existing development west of Simpson Avenue (Broken Top Golf Club), but there is potential for collector connections and the completion of the grid system within the area.
- **Southwest/South area (southeast of Deschutes River, west of US 97) [FAIR]:** This area has existing connectivity to the arterial system via Brookswood Boulevard. However there is no feasible connectivity to the collector system or ability to expand the grid within the area due to existing development patterns.
- **South area (east of US 97, south of China Hat Road) [FAIR]:** This area has potential for connectivity to both the collector and arterial system within the UGB and completion for the grid within the area.
- **Southeast/South area (east of China Hat Road, west of Tekampe Road) [POOR]:** This area has potential for arterial connections, but development along Knott Road and throughout the area limit collector connections and completion of the grid system within the area.
- **Southeast area (east of Tekampe Road, south of Reed Market Road) [FAIR]:** In general, this area offers potential for connectivity to the arterial and collector system and completion of the grid within the area.
- **East/Southeast area (south of US 20, north of Reed Market) [POOR]:** Existing development in this area would prevent collector connection to Wilson Road and completion of the grid system.
- **East (north of US 20, south of Neff Road) [GOOD]:** This area provides existing connectivity with the arterial system, has potential for connections to the collector system, and has potential for completion of the grid within the area.
- **East/Northeast (between Neff Road and Butler Market Road) [FAIR]:** This area already provides connections to the arterial system and has potential for connections to the collector system. However existing development would challenge the completion of the grid system within the area.

- **Northeast/North area (north of Butler Market Road, east of US 97) [FAIR]:** This area provides potential for the planned arterial connections, potential for collector connections, and potential for completion of the grid system within the area.

Appendix D:
MSA Memo

MSA MEMO – WATER & WASTEWATER REVIEW AND STAGE 2 MAPS

- **Water Analysis**
- **Preliminary Analysis of Potential UGB Expansion Basins**

TECHNICAL MEMORANDUM
WATER DISTRIBUTION SYSTEM
AND WASTEWATER COLLECTON SYSTEM REVIEW
URBAN GROWTH BOUNDARY REMAND PROJECT
BEND, OREGON

DATE: 01-16-2015

PROJECT: Urban Growth Boundary Remand Project

TO: City of Bend, Oregon

FROM: Shad Roundy, PE
David Stangel, PE
Murray, Smith & Associates, Inc.

RE: Preliminary Review of Key Indicators for Water Distribution and Wastewater Collection Systems to help inform Urban Growth Boundary Scenarios

Background

The City of Bend, Oregon (City) has approved both a Collection System Master Plan (CSMP, December 2014) and a Water System Master Plan (WSMP, February 2011). Both master plan documents outline capital improvement programs (CIP) that identify projects or upgrades that are required to accommodate potential growth and development within the City's existing Urban Growth Boundary (UGB).

The City is now studying the possibility of UGB expansion as part of the Remand. Areas under consideration are designated exception lands within a two mile buffer around the existing UGB. An overview of the existing UGB, and two mile buffer are shown in Figure 1.

One of the factors to be considered for UGB expansion will be the impact of specific growth areas on existing and planned utility infrastructure (Factor 2 of Goal 14). The review presented in this technical memorandum summarizes the following:

- For water, anticipated exception areas within the two mile buffer that can be served by existing pressure zones based on reservoir water surface elevation by the City that are outside of the Avion, Agate, and Roats service area boundaries.

- For wastewater, anticipated impacts to the collection system for exception lands and sub-basins within the two mile buffer.

Refinement of the UGB expansion areas will be an iterative and multi-step process. In the Stage 2 base mapping stage, the project team proposes to use a few key indicators of the

Goal 14 factors to help identify the best exception land to include in the UGB scenarios. This stage of the analysis will help to narrow the scope of the study area to focus on the exception areas that rank higher and inform the development of better scenarios. In the scenario evaluation stage, more robust and comprehensive models will be used to evaluate alternative UGB scenarios. This will include sewer and water optimization, hydraulic modeling analysis, and engineering cost estimates.

Water System

Much of the potential UGB expansion areas north, south, and east of the UGB are located within the Avion, Roats, or Agate water distribution service boundaries and have not been considered in the analysis to date. UGB expansion areas which can potentially be served by the City through the Outback water facility and expansion of existing pressure zones are located west and northwest of the UGB. To determine the extent of possible pressure zone expansion, a ¾ full tank at the Outback facility was used as a system boundary which establishes a water surface elevation (WSE) of approximately 4,002.5 feet. Areas located below an elevation of 3,900 feet can be served by pressures greater than 40 pounds-per-square-inch (psi) as shown in Figure 2. Service areas above an elevation of 3,900 feet would need to be boosted and may require higher elevation storage facilities to establish new pressure zones.

This analysis assumes that additional water infrastructure built to serve the expanded pressure zones would follow best practice design and installation procedures to limit frictional losses in the distribution system and ensure that distribution system criteria are satisfied at service locations (40 psi pressure during maximum day demand and 20 psi during maximum day demand plus fire flow). A storage analysis will be required to identify water volume requirements for the Outback water facility and other applicable storage facilities when considering UGB expansion scenarios in Stage 4.

Wastewater Collection System

As part of the CSMP, a growth sensitivity analysis was performed to evaluate collection system performance under additional stress. Ten growth node locations were selected where additional loading may enter the system. The loading at each growth node was based on a projected population growth rate of 1.5% between 2033 and 2048, or 25% increase from a population of 125,000 that is projected by 2033 (the end of the CSMP planning period). This growth sensitivity analysis indicated that the optimized capital improvements (i.e. Northeast Interceptor, Southeast Interceptor, Colorado Pump Station, storage, pump station decommissioning, etc.) identified within the CSMP provide an improvement concept that should enable the City to serve additional loading beyond what is currently identified in the existing UGB, with incremental additional infrastructure. The growth sensitivity analysis also indicated that the sizing of storage in the southeast and the sizing of the Northeast Interceptor would likely vary based on the extent and location of additional growth. The master plan did not consider specific growth concepts outside of the UGB or alternative improvements for service to UGB expansion areas.

Subsequent to the CSMP adoption, the planned system (all capital improvements implemented) was reviewed for potential excess capacity after build-out of the existing UGB using the City's calibrated hydraulic model. Excess capacity during dry weather conditions was calculated as the 80-percent depth capacity minus the peak dry weather build-out flow in each pipeline. Additionally, wet weather loading was iteratively applied to the ten growth node locations to identify the most critical system bottlenecks while maintaining 2 feet of freeboard (difference between water surface and ground surface in manhole). The iterative loading for the excess capacity analysis exceeded the 25% population increase from the CSMP growth sensitivity analysis. The results of the excess capacity analysis identify the locations of most probable deficiency in the system for UGB expansion.

In addition to the excess capacity analysis, the two-mile buffer around the UGB was subdivided into sub-basin boundaries. The optimized CSMP alternatives and historic analysis of potential UGB expansion areas were reviewed to identify the most likely impacts and potential improvements to the collection system for each of the delineated sub-basins. A relative rating was applied to each sub-basin based on the significance of these impacts and improvements as described below.

- Good – Fewest additional improvements. New gravity infrastructure to existing system or planned infrastructure.

- Fair – Some additional improvements. Upsize pump station infrastructure to existing system or planned infrastructure. New gravity infrastructure and new gravity interceptors.

- Poor – Significant additional improvements. New pump station infrastructure to planned or unplanned infrastructure. Combination of new gravity interceptors and regional pump station.

System impact descriptions and relative impact ratings for each sub-basin are also presented in Figure 3.

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January 2015

12-1354

Legend

- Existing UGB
- Potential UGB Expansion Area
- Exception Lands
- Parcel

0 5,000 Feet

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Figure 1
Potential UGB Expansion Area

Murray, Smith & Associates, Inc.

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January 2015 12-1354

Legend

- HGL- 4,002.5 ft
- Parcel
- UGB
- Water Feature
- Potential Water Service Area

Water Service Areas - Existing

- Agate
- Avion
- City of Bend
- Roats

Exception Lands

- Agate
- Avion
- City of Bend
- Roats
- Potential

HGL: 4,002.5 ft
40 psi (static) is available at locations with elevations equal to or lower than 3,900 ft, (indicated by highlighted contour line).

Outback Facility
¾ full tank establishes HGL= 4,002.5 ft

0 5,000 Feet

Murray, Smith & Associates, Inc.

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Figure 2
UGB Expansion-
Water System

N W E S

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January 2015 12-1354

Legend

- Gravity Trunk Lines at UGB Build-out (From CSMP 2014)
- Gravity Pipeline
- Force Main
- Parcel
- UGB
- Contour (100 ft)
- Sewer Service Basin in 2 mile Buffer

Service Rating (exception lands)

- GOOD
- FAIR
- POOR

Service Rating (non-exception lands)

- GOOD
- FAIR
- POOR

GOOD - Gravity to Existing or Planned Infrastructure. Minimal Additional Improvements.

FAIR - Pump to Existing or Planned Infrastructure or Gravity to New Infrastructure. Additional Gravity Improvements.

POOR - Pump to New Infrastructure. Significant Additional Gravity and/or Pumping Improvements.

- Pump to Northeast Interceptor
- Upsize Northeast Interceptor
- Upsize Parallel Plant Interceptor

- Northeast Interceptor Extension
- Upsize Northeast Interceptor
- Upsize Parallel Plant Interceptor

WRF

- Gravity Infrastructure (NW Interceptor)
- Regional Pump Station (across River)
- Northeast Interceptor Extension
- Upsize Northeast Interceptor
- Upsize Parallel Plant Interceptor

- New Gravity Interceptor
- Alternative Parallel Plant Interceptor

- Upsize Existing Pump Station
- Upsize Plant Interceptor
- Upsize Existing Gravity Infrastructure

- Gravity to Southeast Interceptor or Plant Interceptor
- Plant Interceptor Upsize or Alternative Parallel Plant Interceptor

- Upsize Plant Interceptor
- Upsize Existing Gravity Infrastructure

- Pump or Gravity to Southeast Interceptor
- Plant Interceptor Upsize or Alternative Parallel Plant Interceptor

- Pump or Gravity to Existing System
- Upsize Plant Interceptor
- Upsize Existing Gravity Infrastructure

- Gravity to Existing System
- Upsize Existing Gravity Infrastructure
- Upsize Southeast Interceptor/Storage (Southern Segments Only)
- Plant Interceptor Upsize or Alternative Parallel Plant Interceptor

- Gravity to Southeast Interceptor
- Plant Interceptor Upsize or Alternative Parallel Plant Interceptor

0 5,000 Feet

Murray, Smith & Associates, Inc.

DRAFT

City of Bend
Collection System Master Plan

WORK IN PROGRESS - SUBJECT TO CHANGE

Figure 3
Preliminary Analysis of Potential UGB Expansion Basins

N W E S

BEND OREGON

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Appendix E:
Factor 2 Maps

STAGE 2 MAPS FOR FACTOR 2 OF GOAL 14: ORDERLY & ECONOMIC PROVISION OF PUBLIC FACILITIES AND SERVICES

Transportation Maps

- Physical Barriers to Connectivity
- 2040 Reliance on Congested Corridors
- Connectivity to Complete Roadway Grid

Water Map

- Water Analysis (City of Bend Service Area)

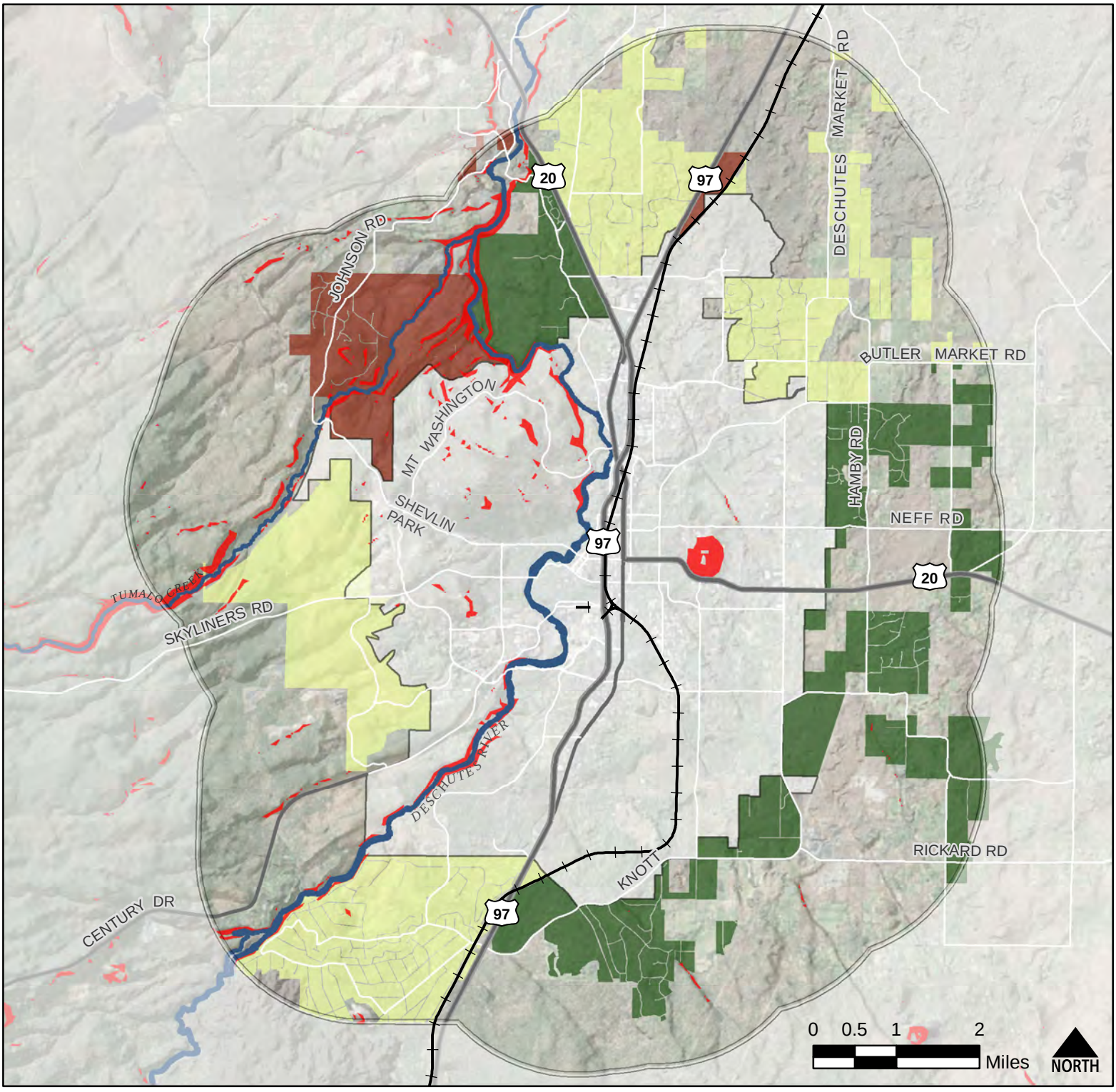
Wastewater Map

- Preliminary Analysis of Potential UGB Expansion Basins

Stormwater Maps

- Surficial Geology
- Drinking Water Protection Areas (GIS Base Map)
- Proximity to Drinking Water Protection Areas

Physical Barriers to Connectivity

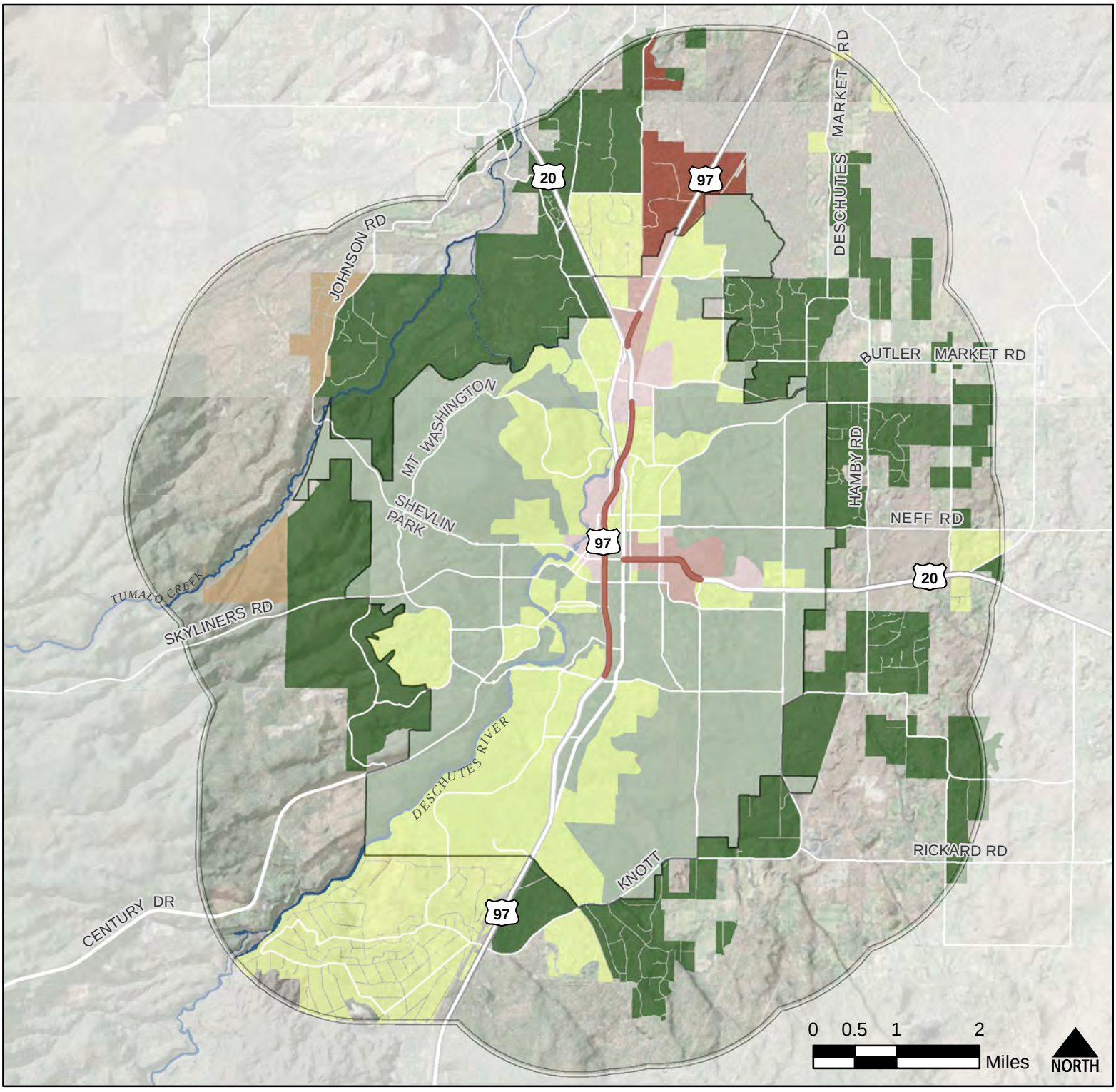


URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: DKS, Deschutes County GIS (2014)

Prepared 1/16/2015

2040 Exception Land Reliance on Congested Corridors



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: DKS, Deschutes County GIS (2014)

Prepared 1/21/2015

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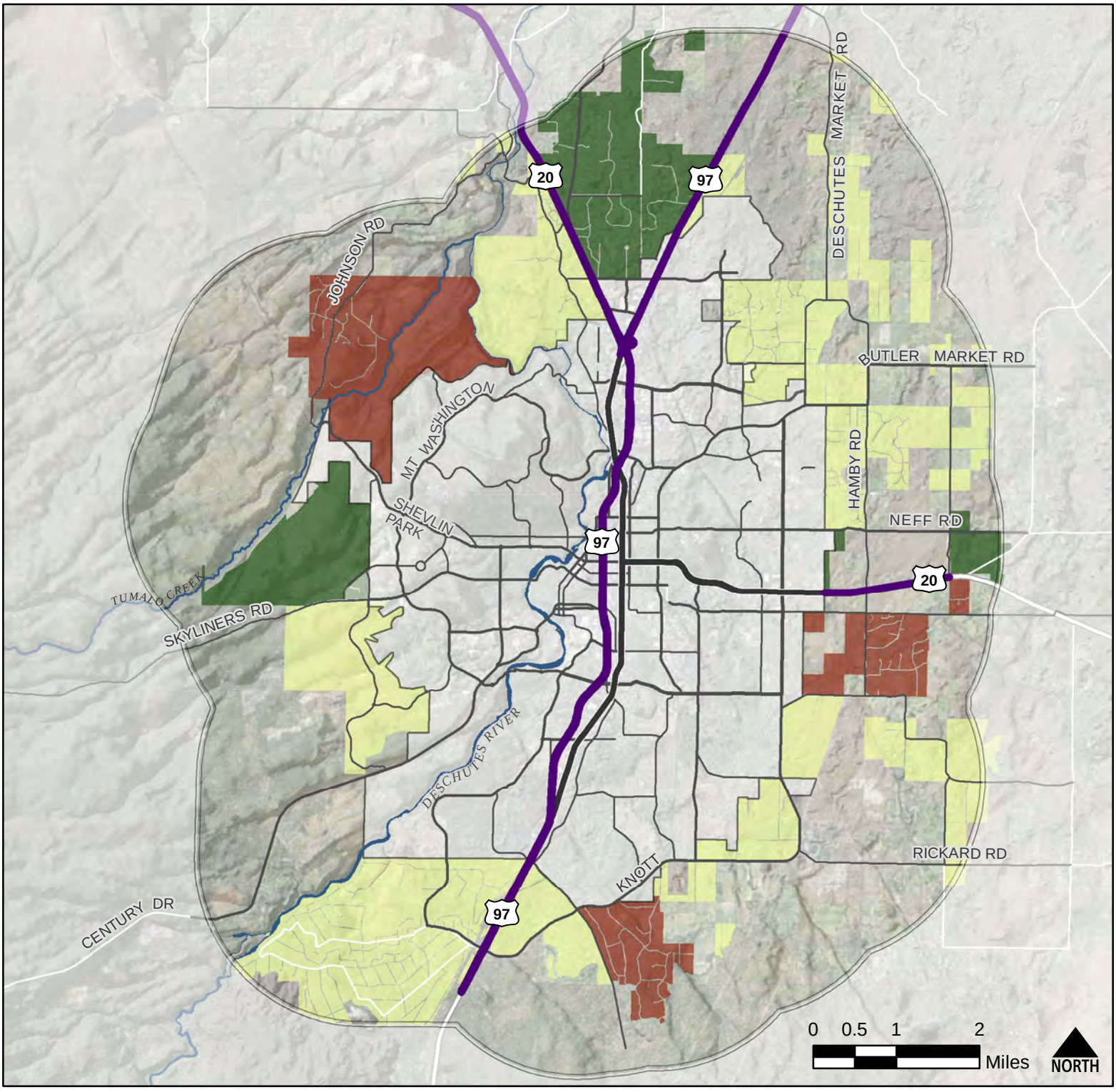
Connectivity to Complete Roadway Grid



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: DKS, Deschutes County GIS (2014)

Prepared 1/21/2015

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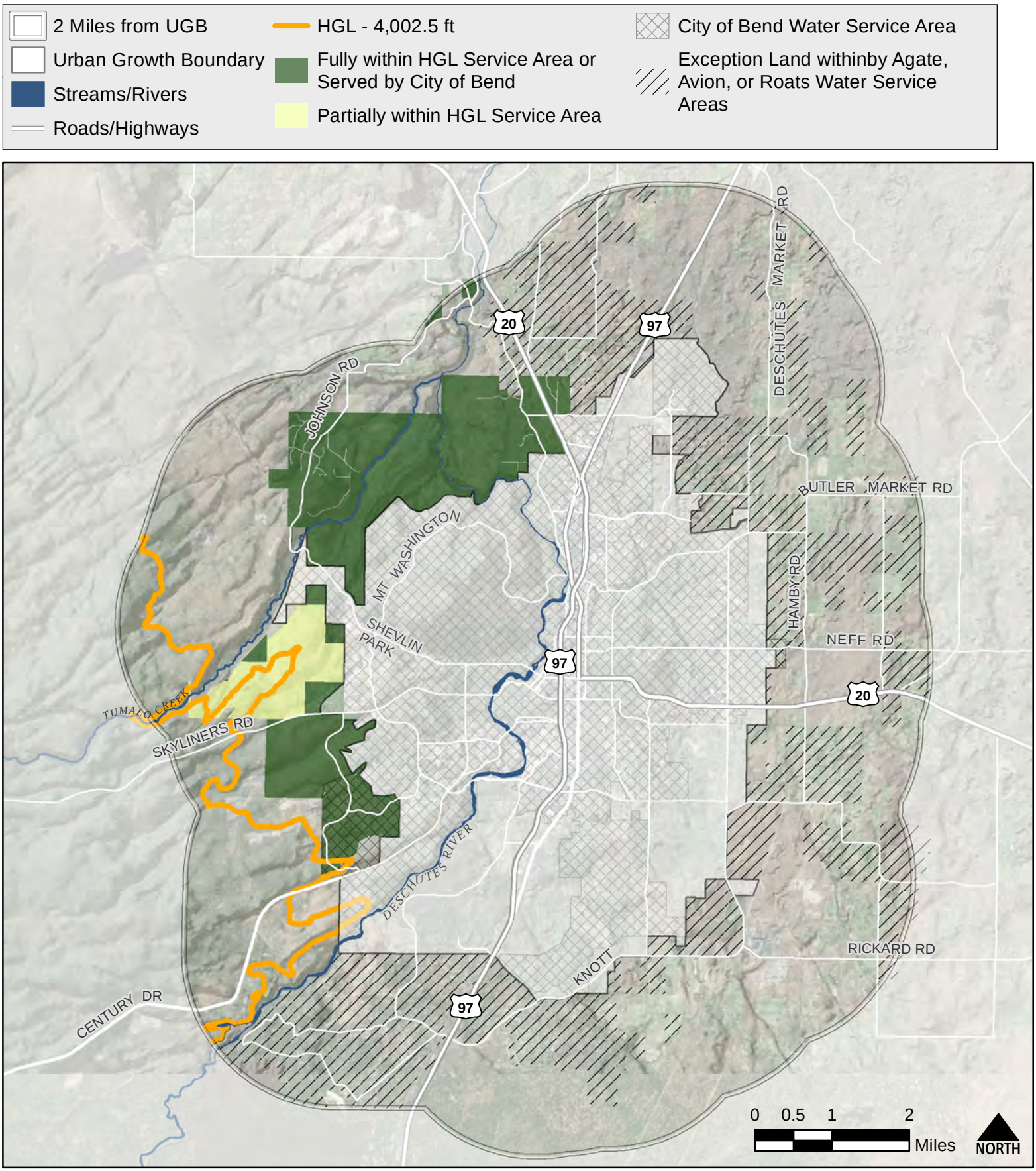
Water Analysis



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: MSA (2014), NRCS, Deschutes County GIS (2014)

Prepared 1/21/2015

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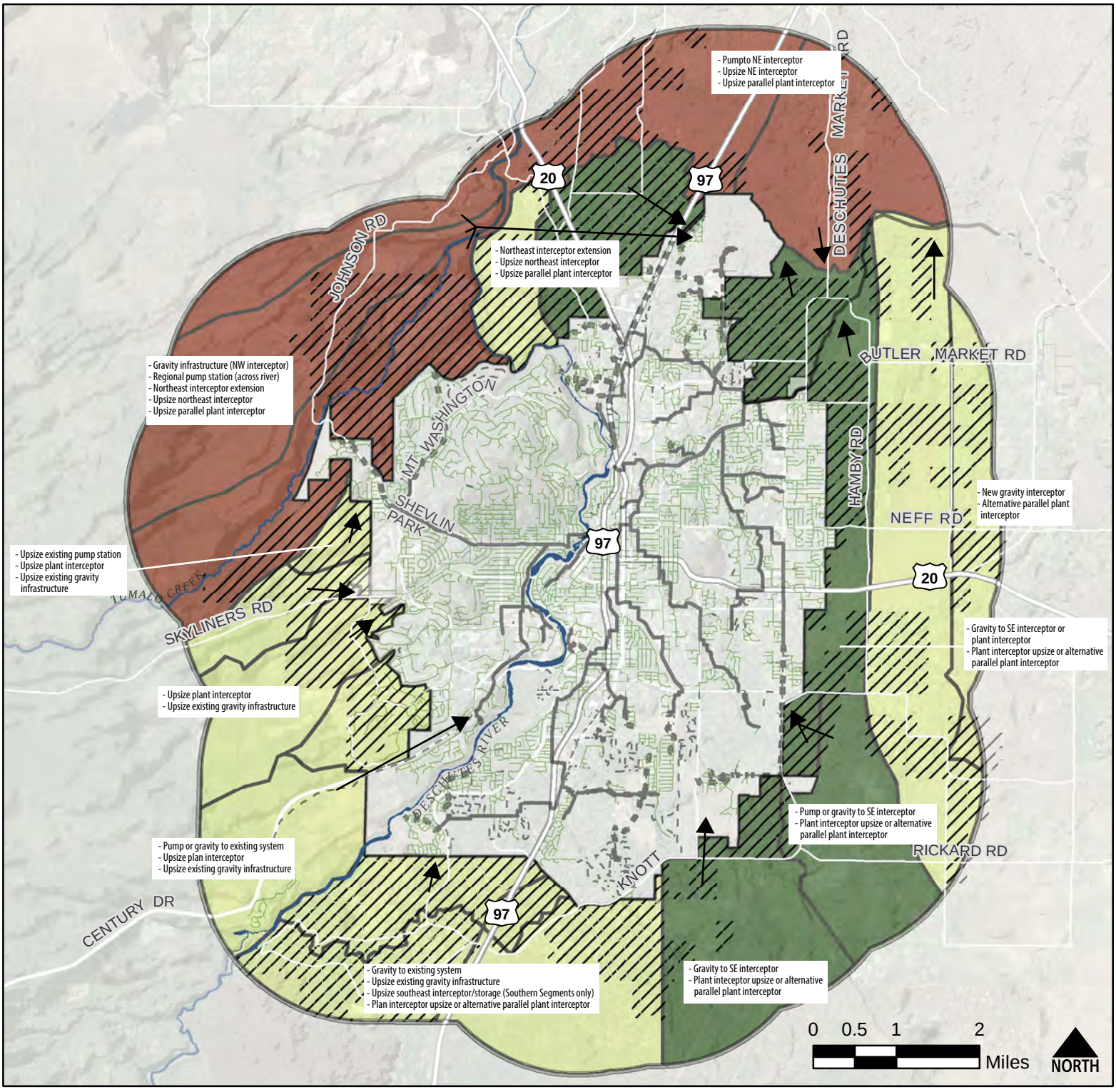
Preliminary Analysis of Potential UGB Expansion Wastewater Basins



URBAN GROWTH BOUNDARY REMAND

Good - Gravity to existing or planned infrastructure. Minimal additional improvements.
Fair - Pump to existing or planned infrastructure or gravity to new infrastructure. Additional gravity improvements.
Poor - Pump to new infrastructure. Significant additional gravity and/or pumping improvements.

Service Layer Credits: MSA Maps & Memo (2015), Deschutes County GIS (2014)

Prepared 1/21/2015

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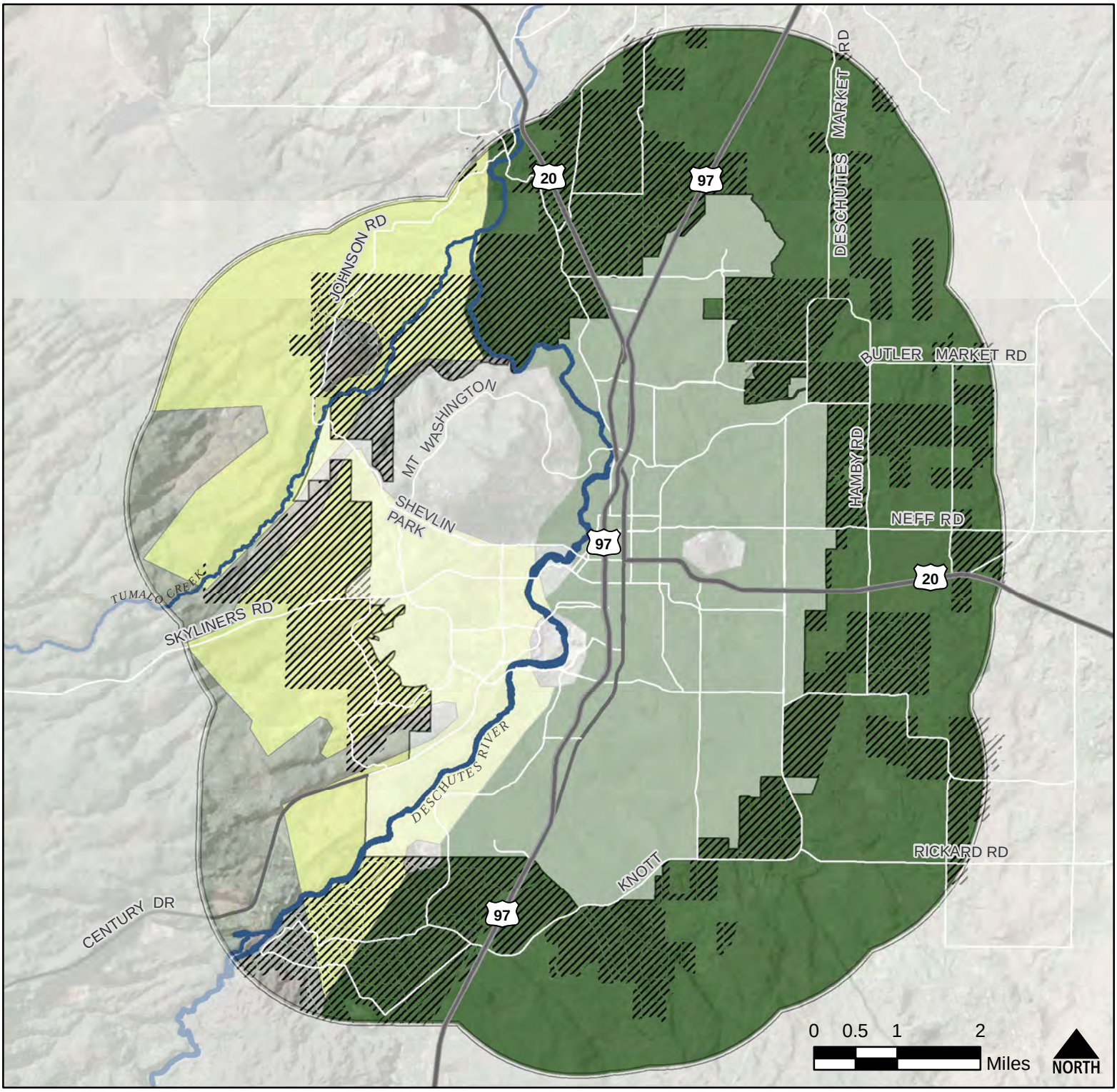
Surficial Geology

2 Miles from UGB
Urban Growth Boundary
Roads/Highways
Streams/Rivers
Exception Land
Surficial Geology
QTst
Qb



URBAN GROWTH BOUNDARY REMAND
BEND

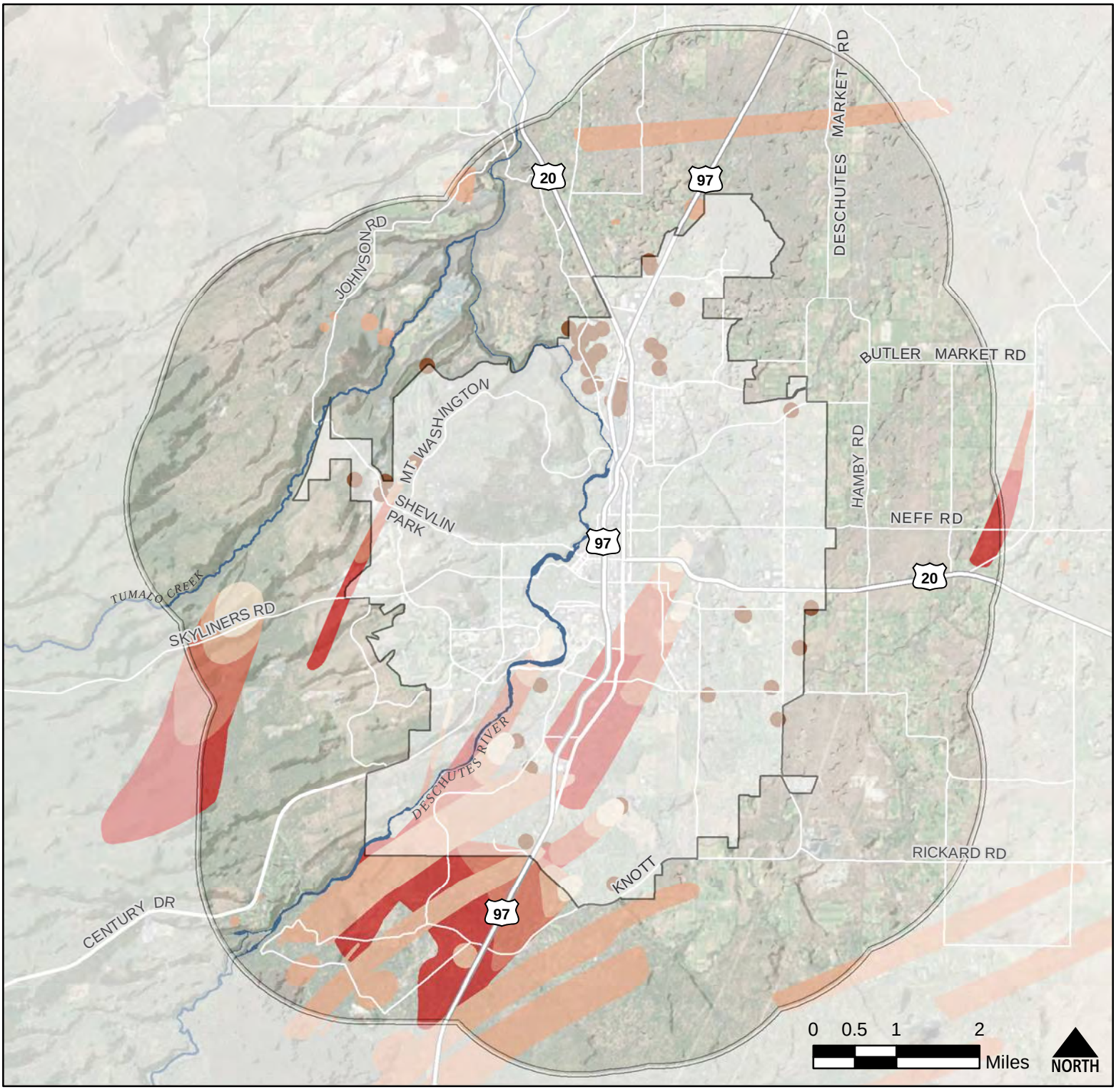
Service Layer Credits: Deschutes County GIS (2011), USGS (2005)

QTst - Tuffaceious Sedimentary Rocks and Tuffs (Lower? Pleistocene and Andestic Ejecta)
Qb - Basalt and Basaltic Andesite (Holocene and Pleistocene)

Note: The locations of geologic features shown are approximate.

Prepared 1/19/2015
03250

Drinking Water Protection Areas (DWPA)

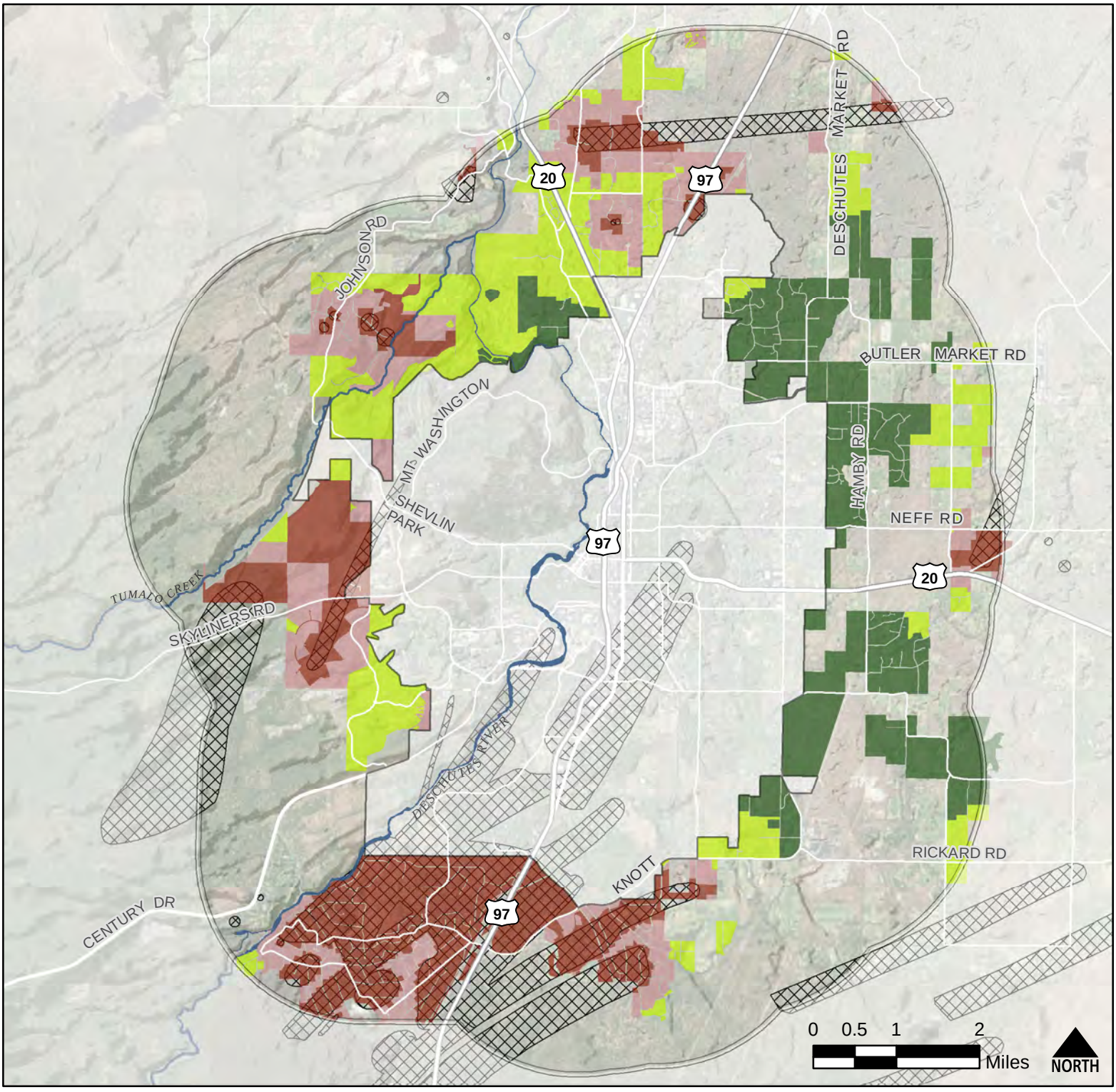


URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014), City of Bend (2011)

Prepared 1/21/2015

Exception Land Distance from Drinking Water Protection Areas (DWPA)



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014), City of Bend (2011)

Prepared 1/20/2015

03252

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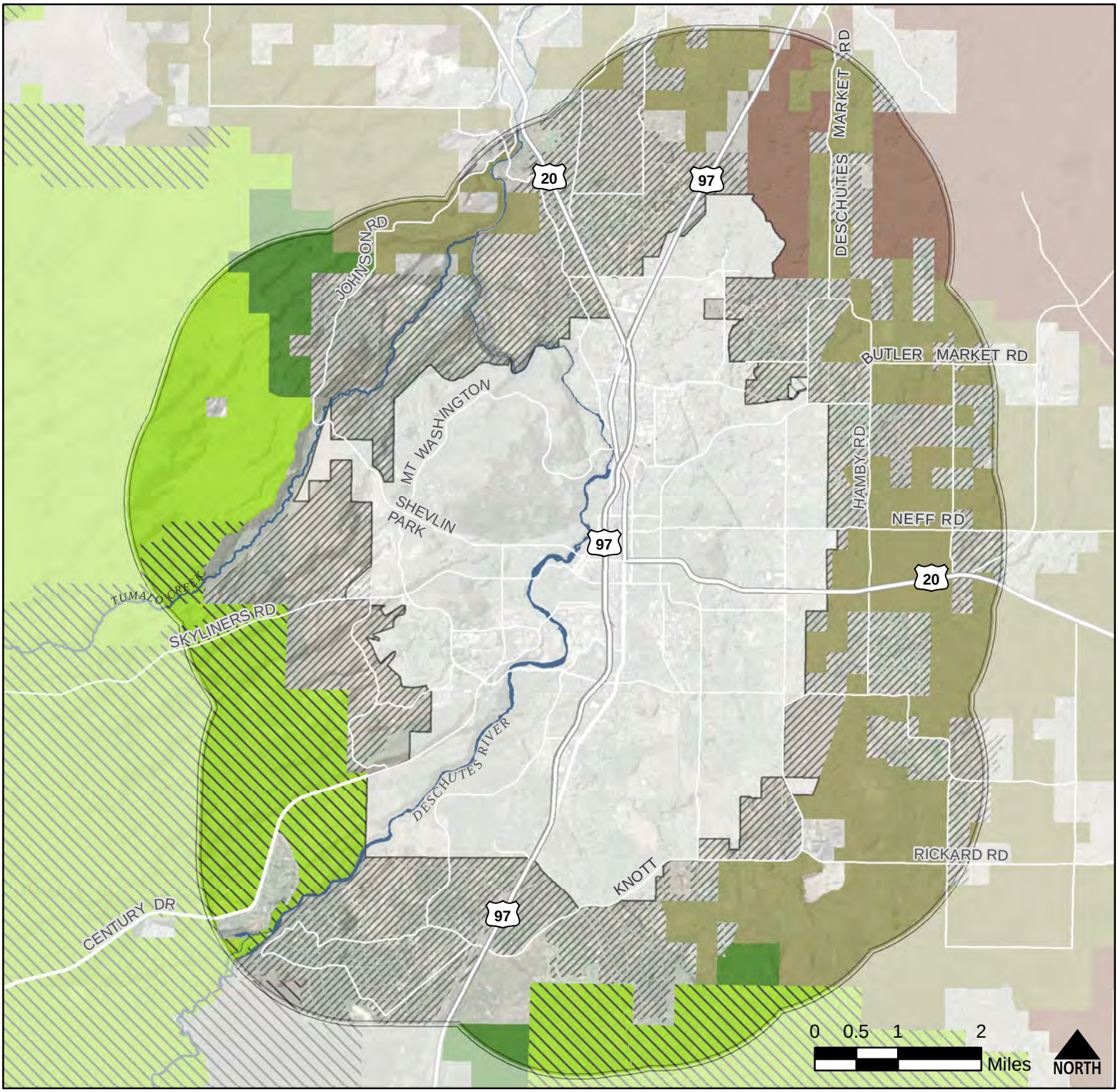
Appendix F:
Factor 4 Maps

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER

STAGE 2 MAPS FOR FACTOR 4 OF GOAL 14: COMPATABILITY WITH FARM/FOREST ACTIVITIES ON NEARBY FARM AND FOREST LAND

- **Farm/Forest Zoning in Study Area**
- **Proximity of Exception Parcels to zoned Forest Land**
- **Proximity of Exception Parcels to High Value zoned EFU Land**

EFU and Forest Use Zones

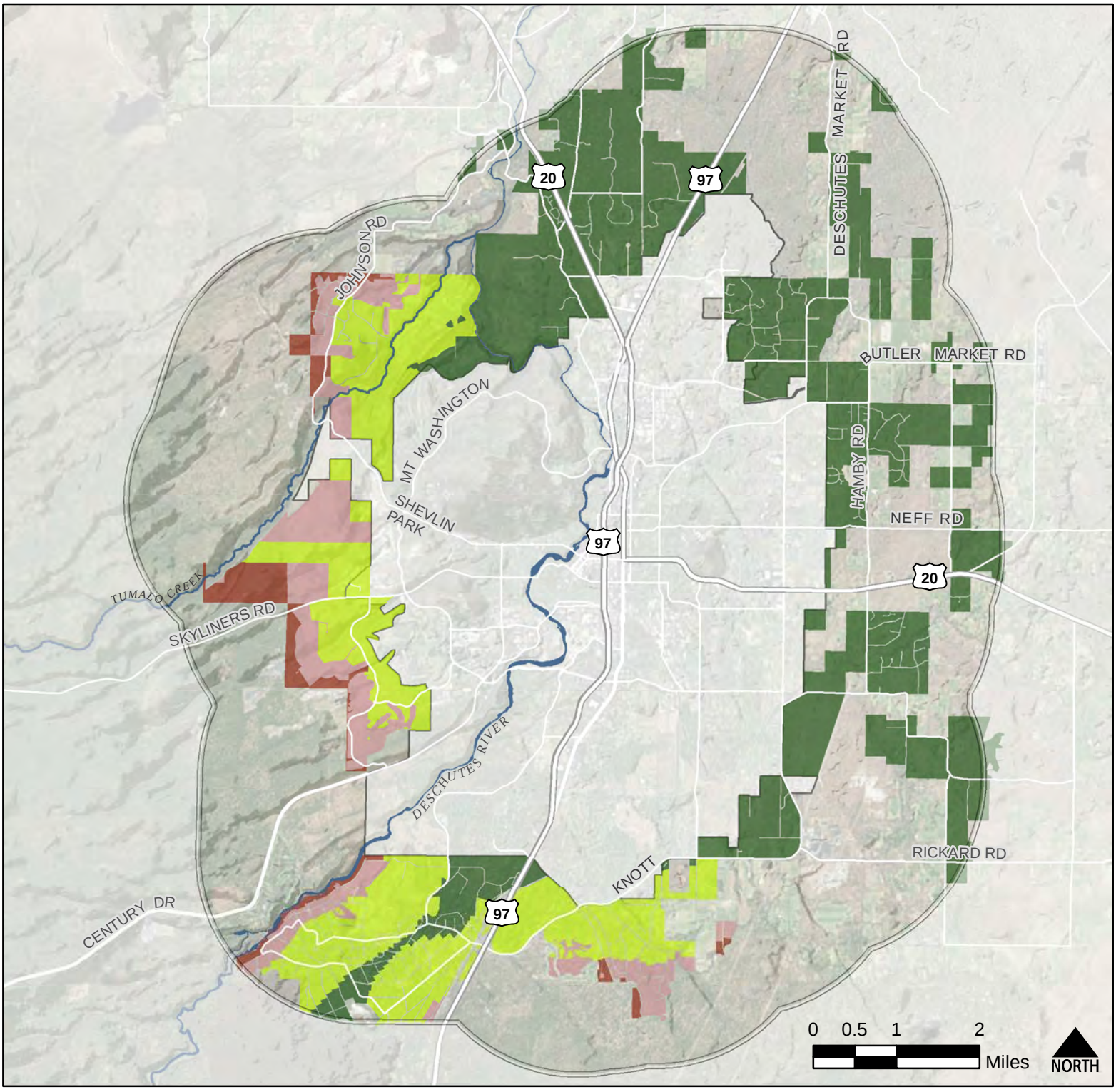


URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/14/2015

Exception Land Distance from Forest Use Zoned Parcels



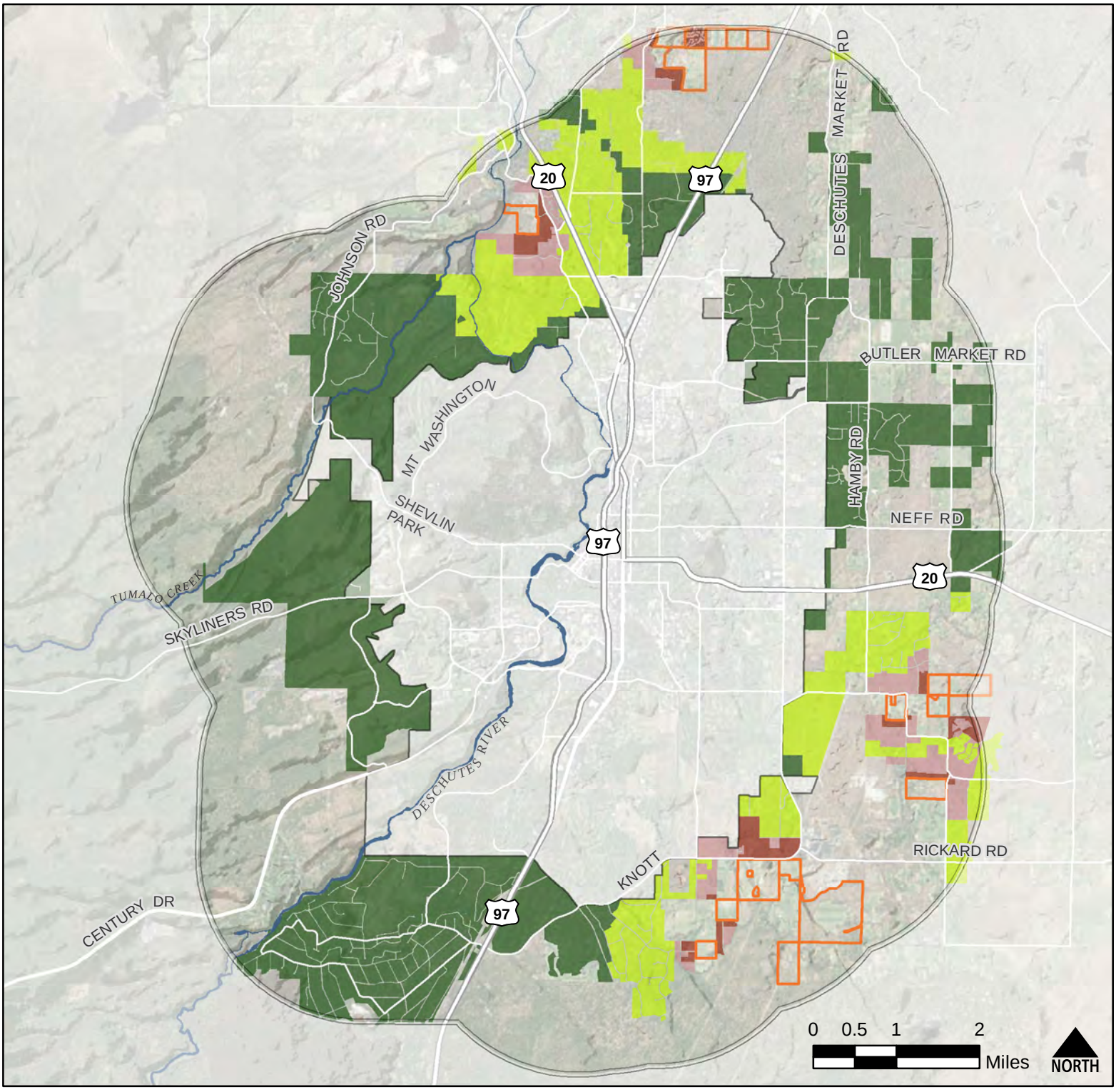
URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/14/2015

03256

Exception Land Distance from High Value EFU Zoned Parcels



URBAN GROWTH BOUNDARY REMAND

Service Layer Credits: Deschutes County GIS (2014)

Prepared 1/20/2015

03257