Swalley
IRRIGATION DISTRICT

To: Brian Rankin, Principal Planner, City of Bend

From: Suzanne Butterfield, Manager, Swalley Irrigation District SB

Date: June 16, 2015

Subject: Swalley Irrigation District comments to Boundary and Growth Scenarios Technical Advisory Committee Meeting #9, June 9, 2015 for submittal to UGB Steering Committee

The Swalley Irrigation District (SID) Board of Directors wishes the UGB Steering Committee to have the written version of the oral presentation SID's attorney gave the UGB Boundary TAC at the June 9 meeting.

SID appreciates this opportunity to provide the Boundary TAC with additional information on the potential impacts that the three proposed scenarios could have on irrigation districts—especially SID—and the rural character of the lands surrounding Bend.

We are engaged in the challenging effort of looking to the future while honoring the legal and cultural obligations we have to our historic roots. I'd like to start off with a quote from the history section of the City's website:

> "There was no thought of an eventual town or a city at the present Bend locale in those pioneer days. But on a spring day in 1900, there arrived on the present site the covered wagon of Alexander M. Drake, a Midwest capitalist, who heard of irrigation possibilities in the upper Deschutes country."

In fact, the Swalley family had arrived a year earlier and had started the Deschutes Reclamation and Irrigation Company (SID's predecessor) in 1899. This early economic driver is still very much part of the Central Oregon culture and economy today, in the form of many thousands of irrigated acres and a rural lifestyle. A large portion of those acres are served by the four Irrigation Districts adjacent to the Bend UGB. Of those four, SID is most directly in the path of likely future development.

SID Overview (please see attached maps)

- SID's boundary encompasses approximately 12,000 acres extending northward from its Deschutes River diversion facility at Butler Market Road and Highway 97, located well within the existing City limits.
- SID provides irrigation water to 4,323 of the 12,000 acres, including small rural homesites, parks, schools, and more traditional agricultural lands designated as EFU resource lands .
- The SID conveyance system is "hub and spoke", with 28 miles of main canals, lateral canals, and smaller private distribution systems branching off that. Many SID facilities have significant easements associated with them—up to 120 feet in some cases.

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- SID holds the oldest water right on this section of the Deschutes, dating back to 1899, yet it has been one of the most progressive districts, piping about half its system and returning about 39 cubic feet per second—or 25 million gallons a day to the river, and working closely with the City of Bend on mutual water supply issues.
- In addition, SID has an in- canal hydropower plant that generates green energy for 300 homes when water is running through the system.

Three Overarching Points

- **Coordination.** SID is an Oregon special district and a municipal governmental entity like Bend, with statutory and fiduciary obligations to deliver irrigation and livestock water to the landowners inside its boundaries.
    - SID has been involved in the UGB process because it wants to work with the City to accommodate future growth in a way that allows both governments to continue serving their constituents, preserve the special urban/rural balance in Central Oregon, and focus development in places where it makes the best sense from an economic and social perspective.
- **SID Impacts.** At the highest level SID is concerned about the impacts that urbanization will have on the District's infrastructure, its assessment base, and its ability to deliver irrigation water to rural and agricultural resource lands
- **Why You Should Care.** We respectfully suggest that this body should be concerned about issues associated with intergovernmental coordination, impacts to resource lands, and the potentially high costs of development associated with expansion into the SID boundaries.

Specific Impacts

- Operational
    - Because of the hub and spoke distribution system, these impacts will not only affect the lands brought into the UGB, but potentially all SID lands—including EFU lands on the northern end of the District.
    - Infrastructure conflicts and easements drive up the costs to operate the District and the cost to developers
        - Easements
        - Piping
        - Utility conflicts
        - Buyouts
    - In addition, every account pulled from SID reduces SID's ability to flexibly manage its water supply and work with the City on its own water supply and coordination goals in the future.
- Financial
    - SID's annual operating budget is based entirely on revenue from assessments paid by each landowner.
        - Annual assessment revenue is approximately $528,000.
        - The assessment structure includes a significant base fee for each irrigated parcel
        - When SID loses customers to urbanization, its assessment base shrinks.

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- Due to the structure of SID's assessments, the loss of a single account has a significant financial impact--therefore urbanization of small rural parcels has a disproportionately large impact on SID revenue. SID's costs to operate are fixed costs and do not reduce as accounts leave SID and go to the City.
- Over the last 50 years, as the result of urbanization within the SID boundary, SID has lost approximately 250 acres of irrigated lands from its assessment base.
- SID has debt service obligations related to its commitment to develop green power and return water to the river. Those obligations are secured by its assessment base.

Evaluation of UGB Scenarios

- Scenario 1
  - Impacts 16 tax lots served by SID
  - Impacts 78.71 irrigated acres
  - 1% of SID assessment base ($5,590 annually)
- Scenario 2
  - Impacts 39 tax lots served by SID
  - Impacts 128.32 irrigated acres
  - 3.5% of SID assessment base ($18,452 annually)
- Scenario 3
  - Impacts 97 tax lots served by SID
  - Impacts 208 irrigated acres
  - 8.6% of SID assessment base ($45,605 annually)

Recommendations

- To that end, we would prefer a boundary scenario that takes even less acreage than those shown; certainly a final scenario that minimizes the overlap with SID's boundary would be best.
- To the extent that future development will occur within SID boundaries, it is SID's desire that the development consist of large-parcel commercial and industrial development. Larger-scale developers tend to be better able to manage the infrastructure conflicts with irrigation districts and they are also generally better able to afford to manage such conflicts.
- A large portion of the proposed lands to the north are already carved into many small lots.
  - This means more impact on SID' assessment base
  - This means more difficulty and expense in redeveloping those lands
  - This means development will impact an existing rural residential lifestyle in these areas
- We are also concerned about land uses that will encourage future incompatible growth farther into the SID boundaries.
  - We request that you don't locate a school in the northern area
  - We request that you don't put other residential attractors there
  - There are many examples of home development located on the SID Main Pipeline easement, where individual homeowners do not understand the nature of the easement and frequently ask the District to be able to place structures and incompatible uses in the easement area.

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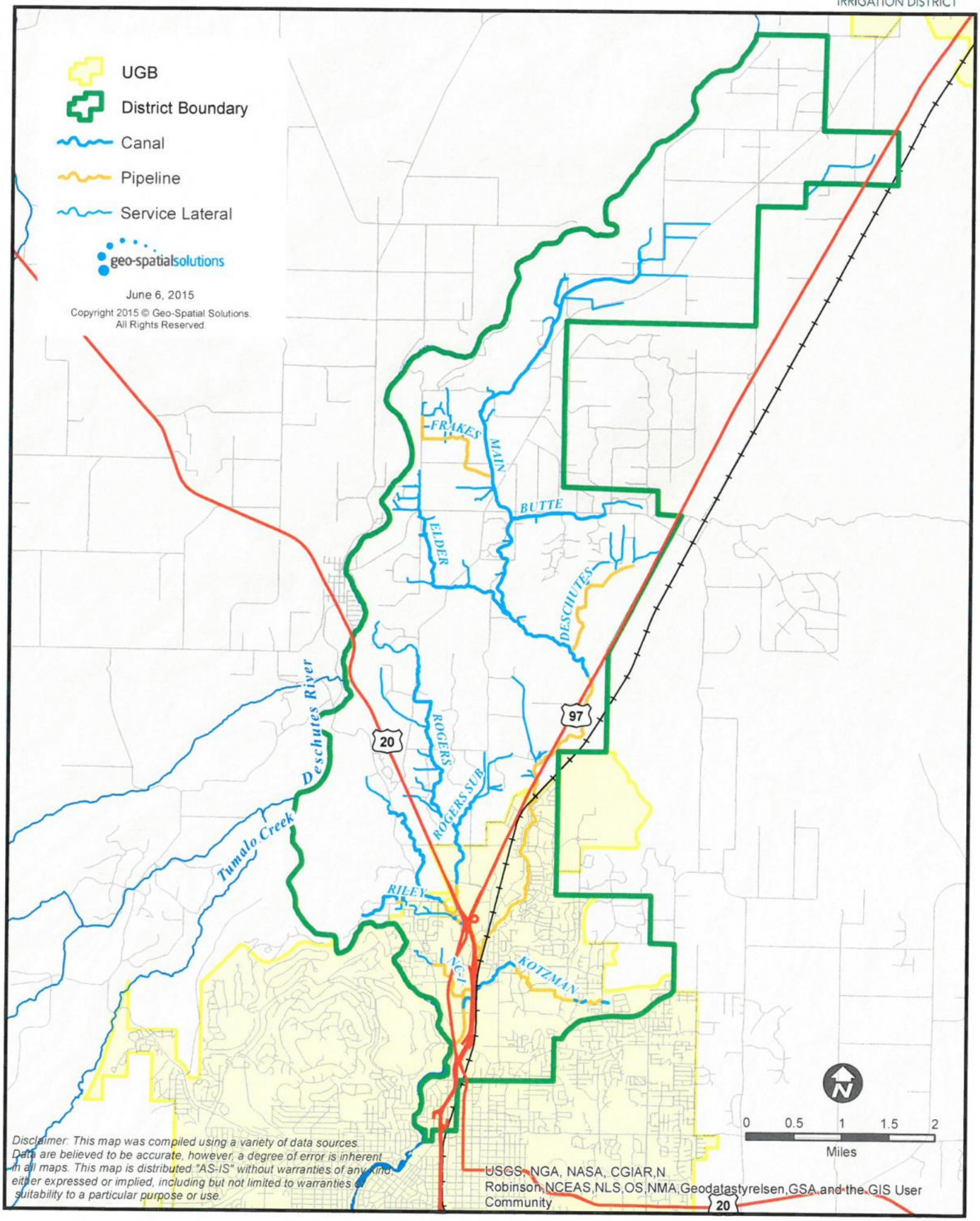
General Overview Map

Swalley IRRIGATION DISTRICT



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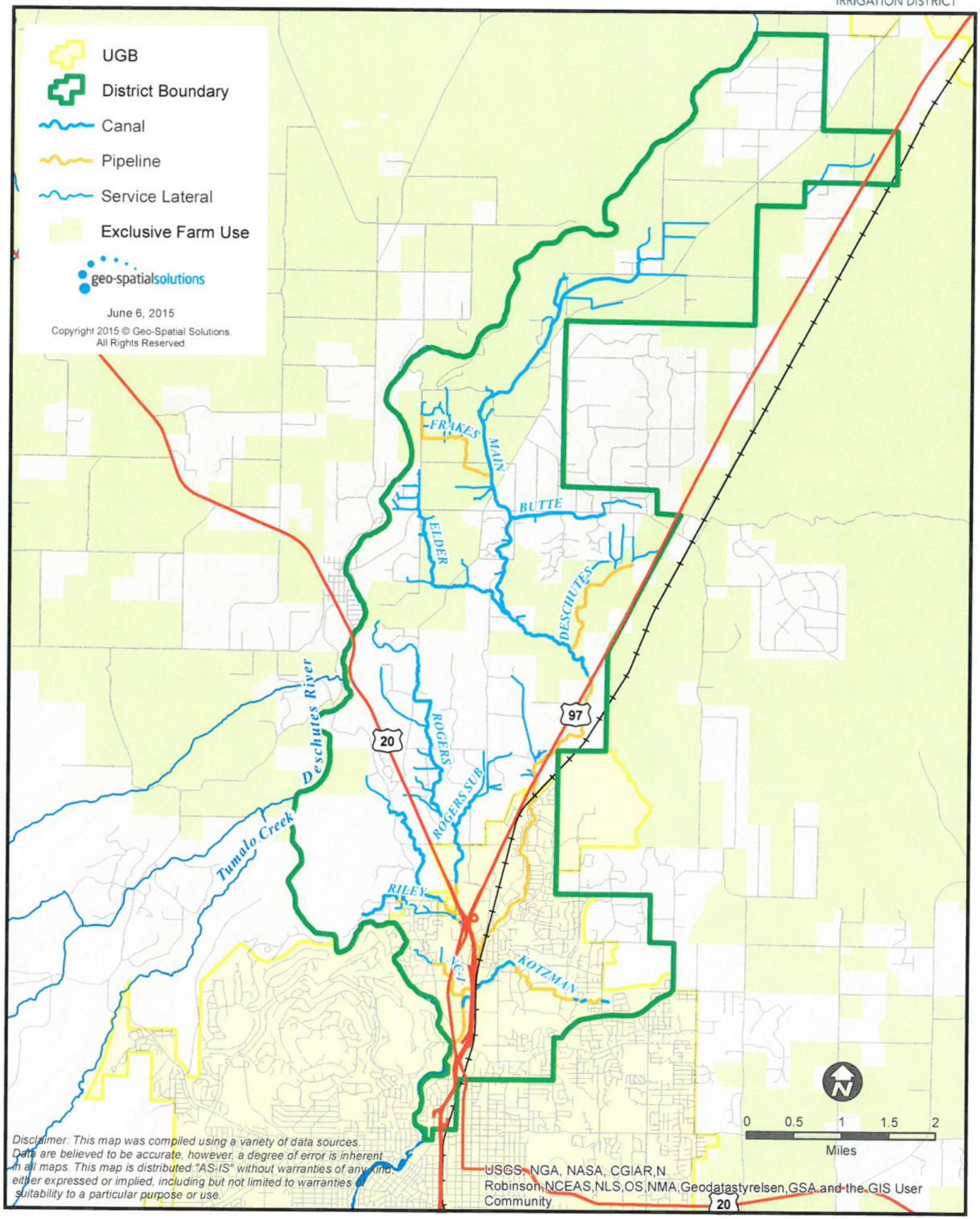
General Overview Map with EFU Lands

Swalley IRRIGATION DISTRICT



General Overview Map with EFU Lands

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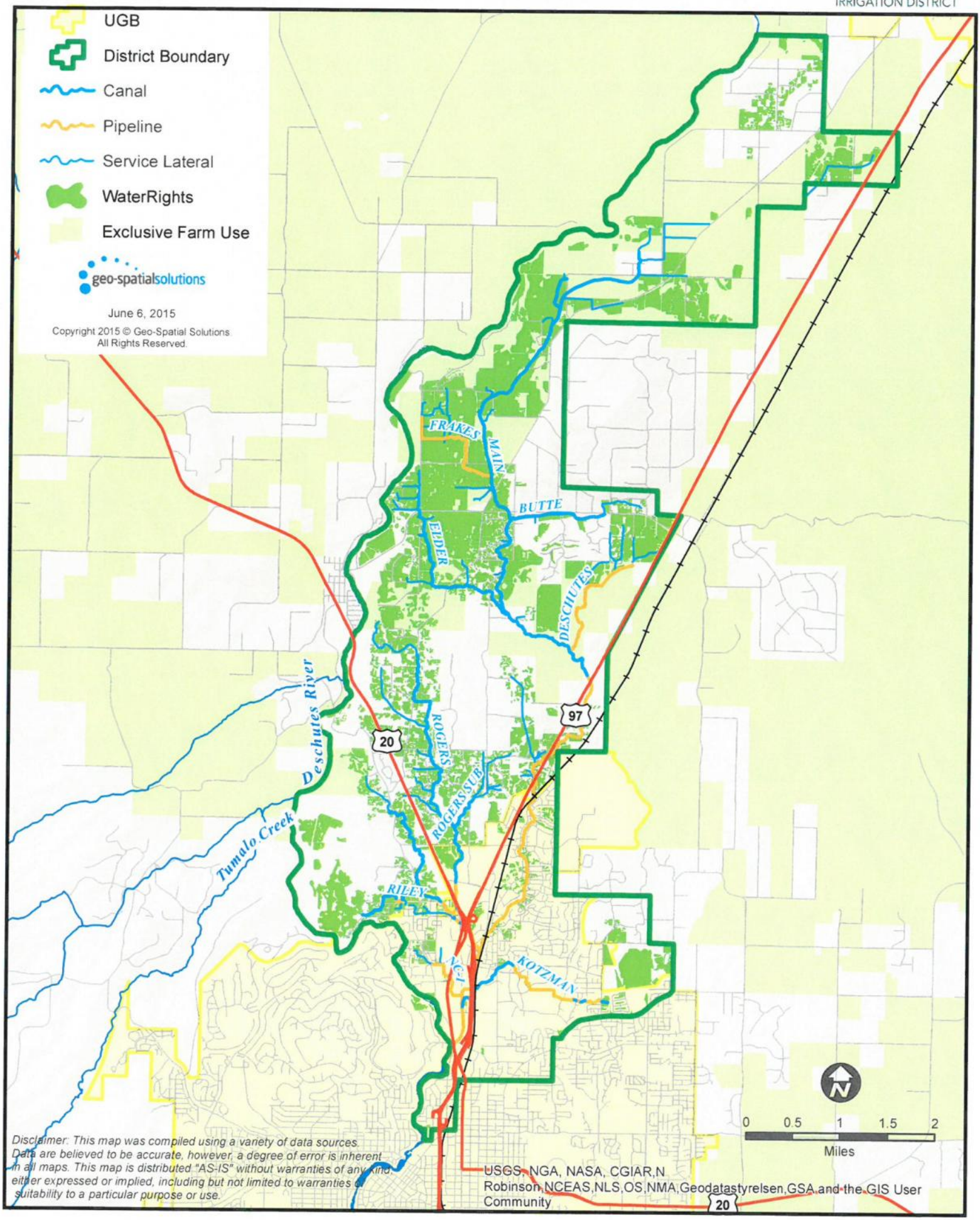

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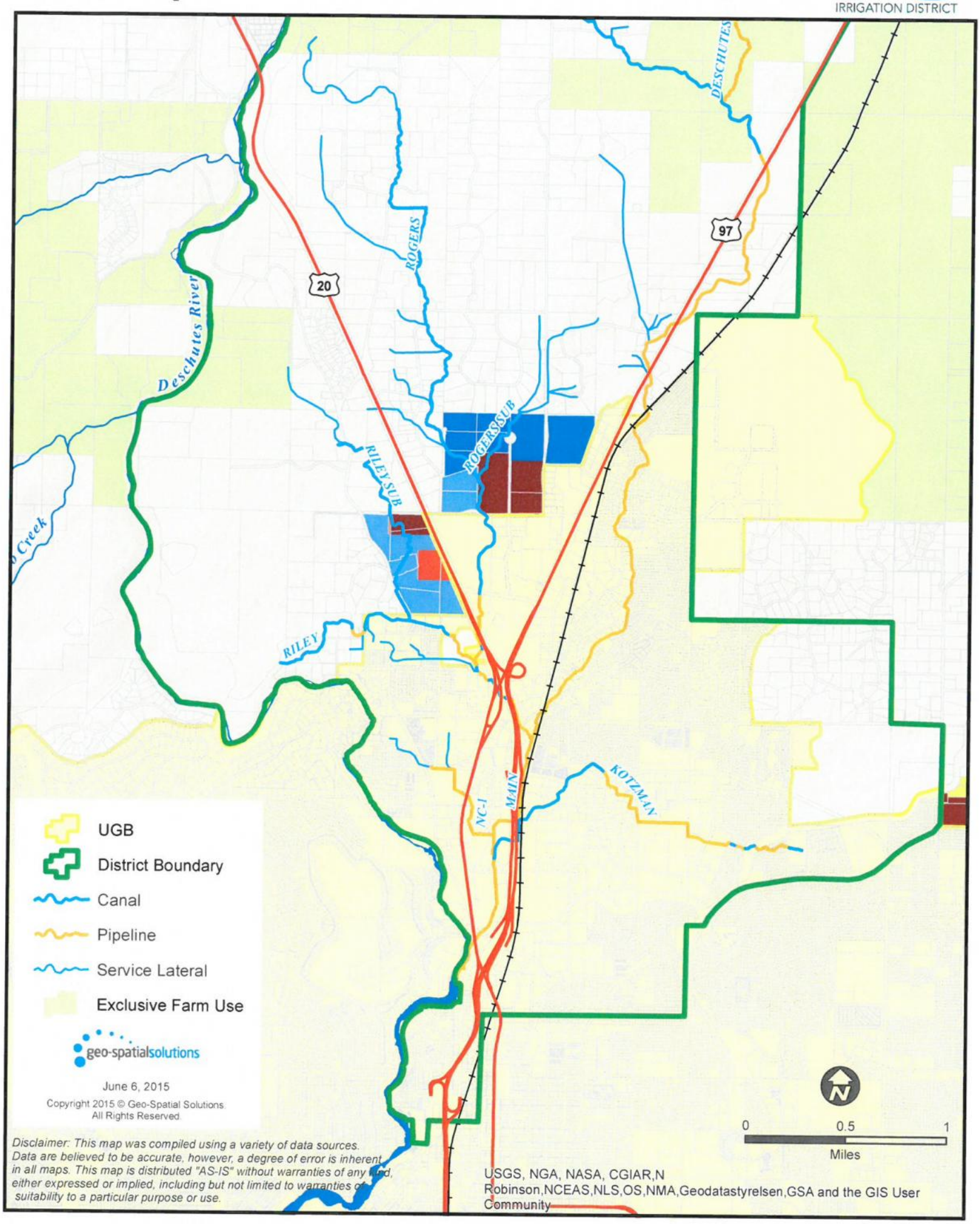
Basemap with TAC Scenario 1

Swalley IRRIGATION DISTRICT



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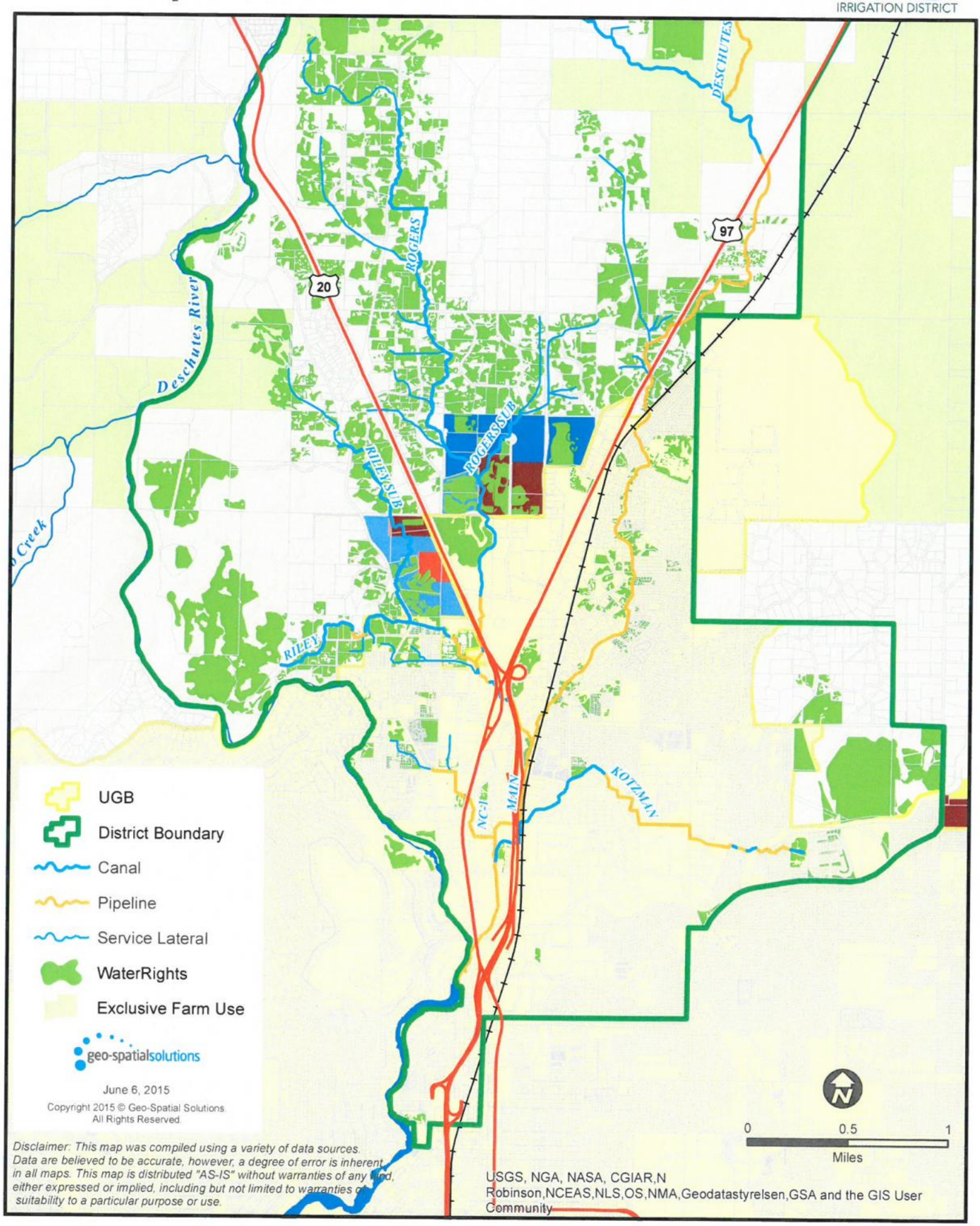
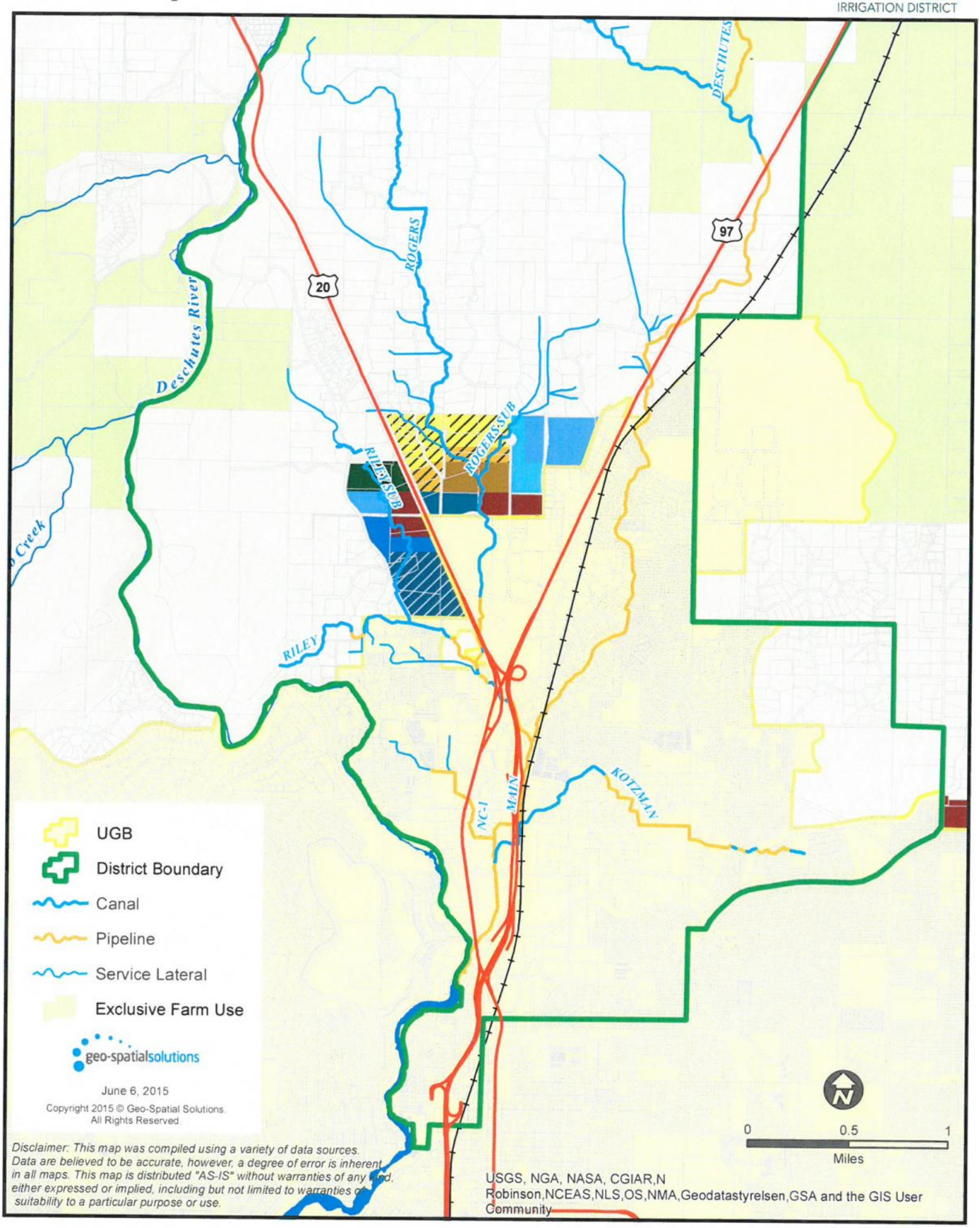
Basemap with TAC Scenario 1

Swalley IRRIGATION DISTRICT



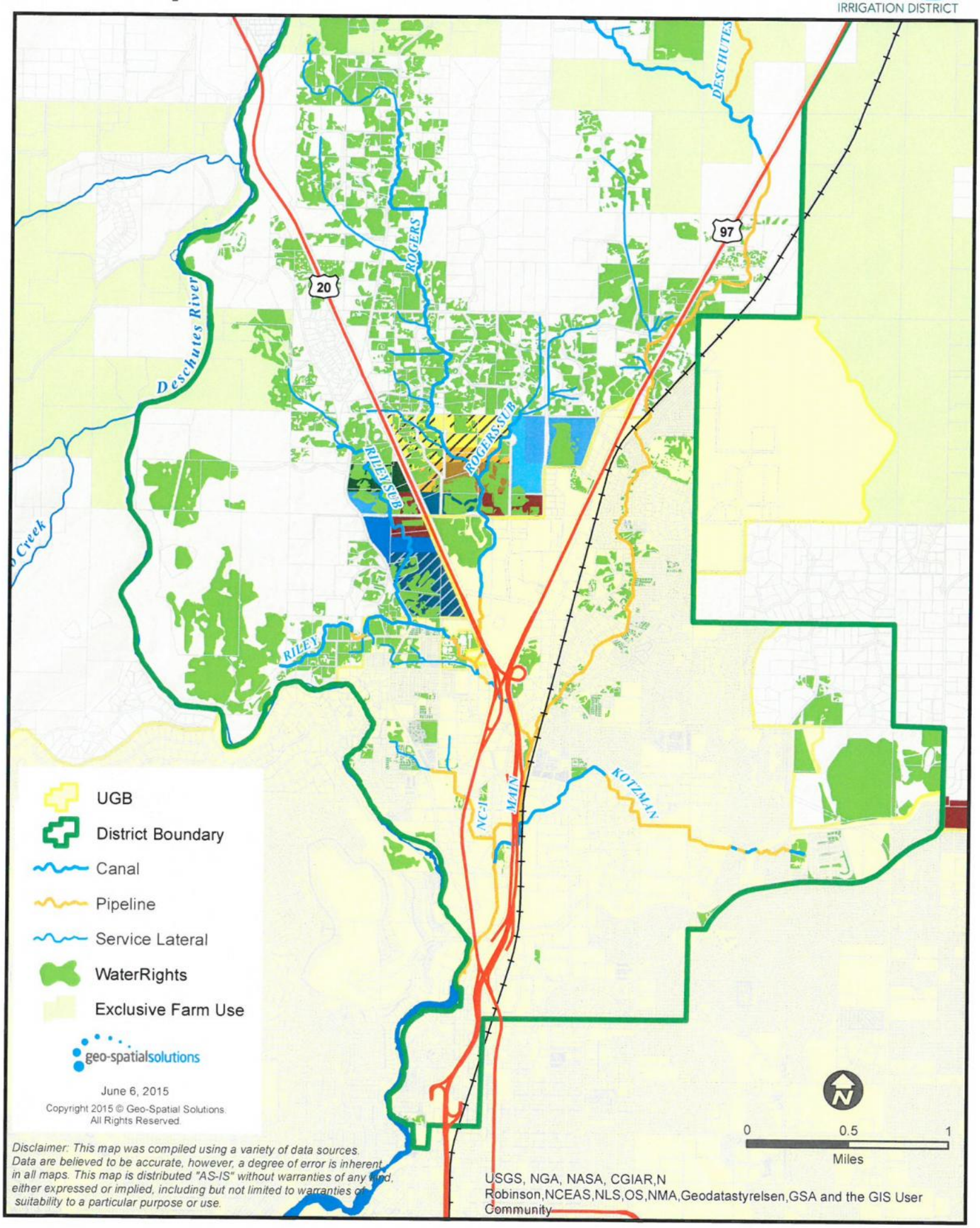
Basemap with TAC Scenario 2

Swalley IRRIGATION DISTRICT



Basemap with TAC Scenario 2

Swalley IRRIGATION DISTRICT



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Basemap with TAC Scenario 3

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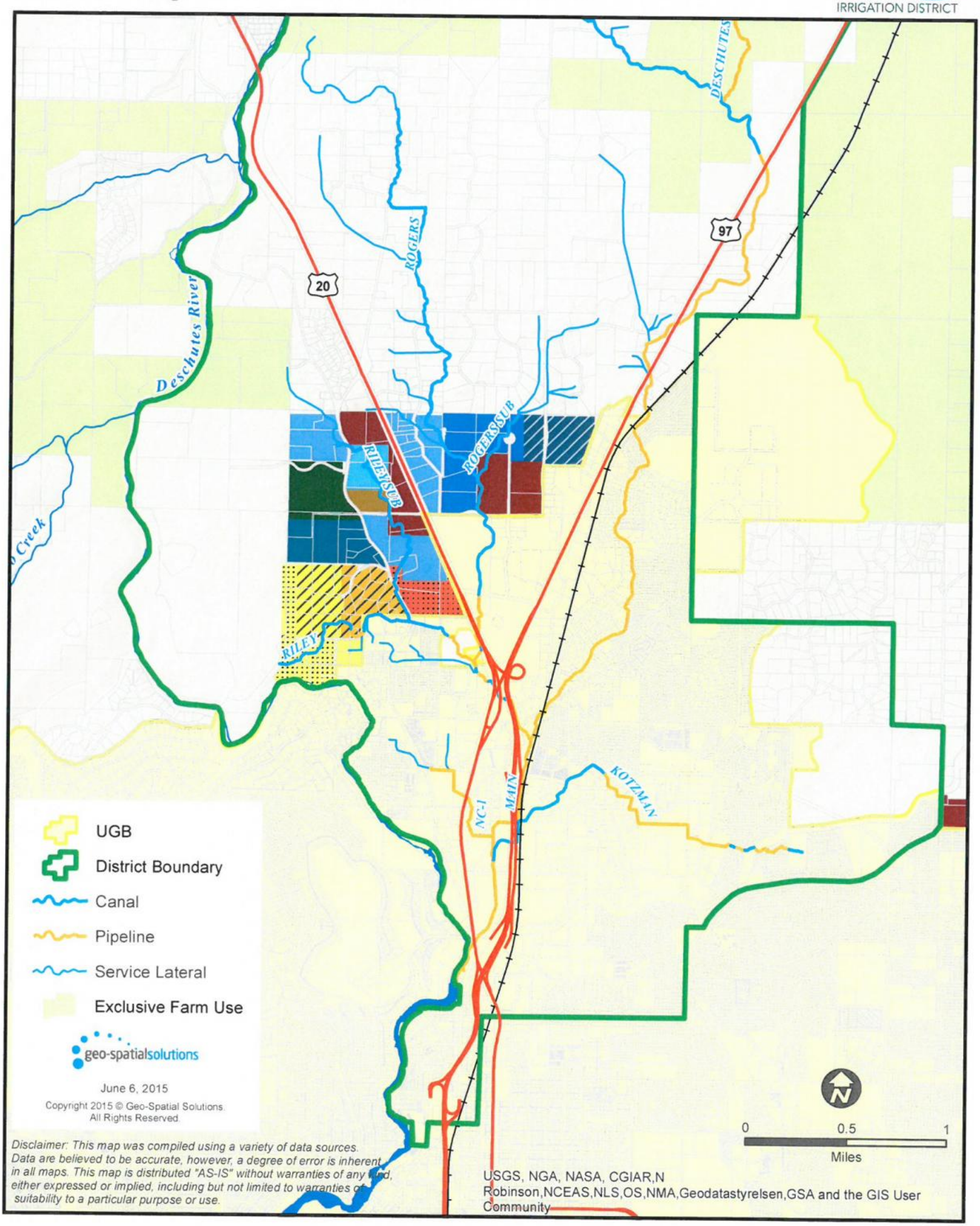

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Basemap with TAC Scenario 3

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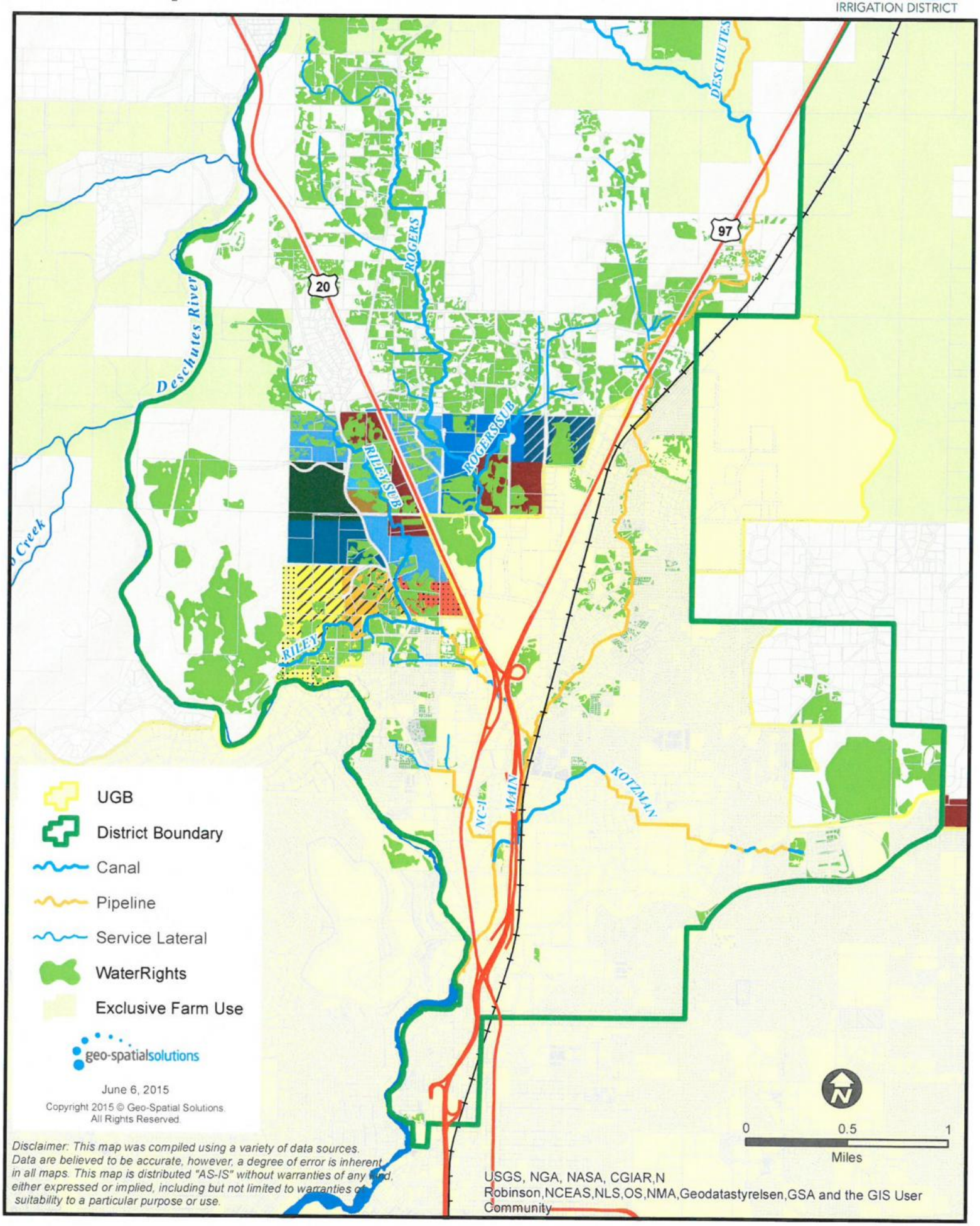

Bend Metropolitan Planning Organization

PUBLIC TRANSIT PLAN AND TRANSIT CORRIDOR LAND USE ASSESSMENT

Public Transit Plan

BMPO Bend Metropolitan Planning Organization

DKS Associates TRANSPORTATION SOLUTIONS

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March 2013

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The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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1 INTRODUCTION AND PROJECT BACKGROUND

In November 2011, the Bend Metropolitan Planning Organization (BMPO) initiated this project to update the long-range Public Transit Plan (PTP) for the Bend area, to address existing and future public transportation needs, provide an assessment of land use conditions along current and potential future transit corridors, and recommend strategies to coordinate future transit investments with transit-supportive land uses.

Over the past decade, Bend has been one of the fastest growing communities in Oregon. With a current population of 76,639 residents, the Bend area is projected to grow to over 109,000 residents by 2025. Population growth is running about 5% behind estimated projections, which were developed prior to the economic downturn.[1] The area's historically rapid population growth and rates of development dictate the need to think strategically about how BMPO, the City of Bend (City), and Cascades East Transit (CET) plan for and accommodate public transit and transit supportive land uses.

The City of Bend launched its fixed-route transit system service in 2007 as Bend Area Transit (BAT). Utilization of the system has grown significantly and the local system is integrated with a regional transit network, both now operated by CET. As Bend continues to grow and demand on the transit system increases, the presence and quality of transit will become increasingly important criteria for land use development and, at the same time, land use will be a key criterion for determining the level of transit service required.

This interdependence raises the following questions that motivated this project:

- How can the MPO and City of Bend encourage denser, transit-supportive development in areas where transit service investment is needed?
- What are the areas that are most appropriate to focus transit supportive land uses?
- How can transit and transit-oriented development be a catalyst for achieving other goals in Bend, such as economic development, social justice, and preservation of the environment?

This plan aims to address this "chicken-and-egg" issue by identifying:

[1] Current population from 2010 U.S. Census. Projections from Deschutes County, Coordinated Population Forecast, 2004.

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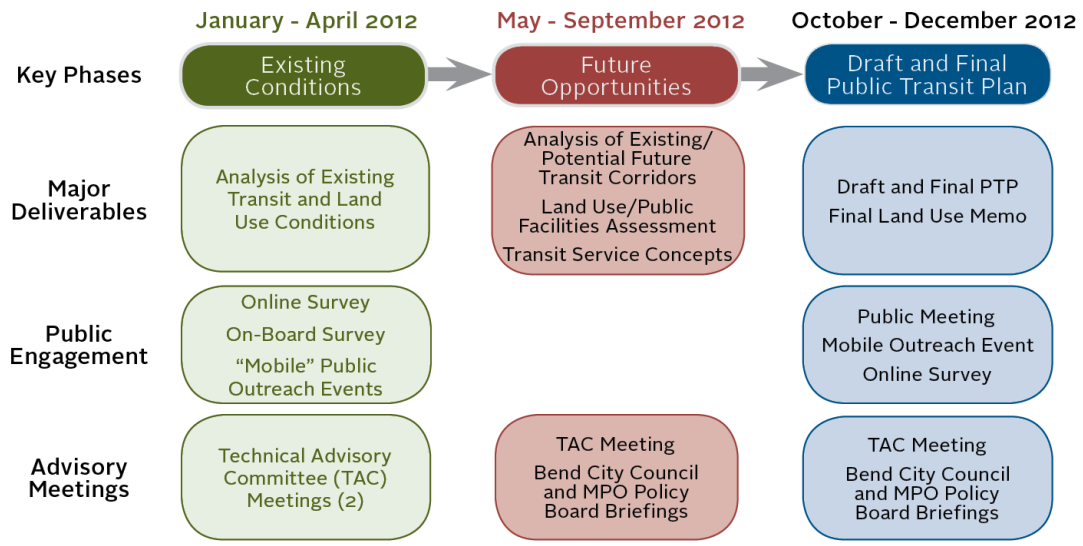
- A set of future service improvements that can be implemented in response to future population/employment growth and funding availability.
- A network of corridors where the highest-quality service is planned and where transit-intensive land uses are located in close proximity to the best transit service.
- Land use policies that help ensure development and street design along those corridors take a transit-oriented form.

PLANNING PROCESS

The project involved three major phases: (1) analysis of existing conditions, (2) assessment of future land use opportunities and development of transit service concepts, and (3) development of the long-range transit public transit plan (PTP). Figure 1-1 illustrates these phases in relation to key deliverables, public outreach opportunities, and meetings with the Technical Advisory Committee (TAC) for the project as well as briefings to provide updates to and receive input from the MPO Policy Board and Bend City Council. The next section describes the role of the TAC and Chapter 4 summarizes the input received from the public.

Figure 1-1 Planning Process



PROJECT OVERSIGHT

This section describes the role of the project management team and TAC in providing direction and input at key stages of the project.

Project Management Team

The project management team included representatives from BMPO, the City of Bend, the Oregon Department of Transportation (ODOT), the Oregon Department of Land Conservation and Development (DLCD), and CET. Core project management team members met regularly throughout the project. City of Bend staff provided BMPO and the consultant team with specific input and direction at key stages of the project, particularly related to land use and transportation, and CET planning and operations staff helped develop and validate transit service concepts.

Technical Advisory Committee (TAC)

The Technical Advisory Committee, working with MPO and CET staff and the consultant team, played an important role in guiding the public transit plan. The full TAC met four times, providing valuable input and discussion. TAC members reviewed and provided comments on plan deliverables throughout the project.

In addition to Project Management Team members, the TAC included representatives from human services and non-profit service providers, Deschutes County, Bicycle and Pedestrian Advisory Committee (Deschutes County), Central Oregon Community College (COCC), St. Charles Medical Center, Downtown Bend (Chamber), and Bend Park & Recreation District.

PROJECT DELIVERABLES

The project includes the following two major deliverables, in addition to an Existing Conditions Memo that helped inform both deliverables:

- **Public Transit Plan (PTP)**. The PTP is contained in this document and identifies short- and long-term transit improvements and strategies for the Bend area. The PTP will serve as a component of the overall land use and transportation planning process in Bend and can be adopted as an element of (or otherwise incorporated into) the BMPO Metropolitan Transportation Plan (MTP) and the City of Bend Transportation System Plan (TSP).

- **Future Opportunities Memo**. This companion document provides an assessment of opportunities for land use changes that can support public transit within BMPO boundaries and identifies additional strategies for coordinating transit with land use. This document will inform future land use planning in Bend, in particular as it relates to the City of Bend's proposed Urban Growth Boundary (UGB) expansion and the State of Oregon Land Conservation and Development Commission's (LCDC) partial acknowledgement/remand of this proposal in 2010.

PLAN OUTLINE

The PTP is structured into the following chapters:

- **Chapter 1: Introduction and Project Background.** Provides an overview of the project and describes the planning process and oversight structure.
- **Chapter 2: Community Profile and Demographics.** Presents demographic and land use trends that impact transit demand.
- **Chapter 3: Existing Land Use, Transit Services, and Public Facilities.** Provides an overview of existing land use, transit services, and public facilities in Bend.
- **Chapter 4: Community Input.** Summarizes results of public outreach efforts, including a survey conducted on-board CET local buses in Bend, an online community survey, and project outreach events.
- **Chapter 5: Key Findings and Transit Needs Assessment.** Summarizes key findings from the demographic analysis, review of existing conditions, and community input.
- **Chapter 6: Goals and Objectives.** Recommends updates to the transit goals and objectives for the City and MPO. The following two chapters describe elements of a "Complete Transit System" that function together to achieve the desired local outcomes for transit in Bend.
- **Chapter 7: Service and Land Use Element**. Describes service quality and land use, and provides a flexible service plan for the short-, mid-, and long-term time frames.
- **Chapter 8: Non-Service Element.** Describes facilities, access, transportation demand management, and marketing/branding.
- **Chapter 9: Implementation.** Describes operating/capital costs and actions for implementing the recommended improvements.

The PTP provides references to more detailed information provided in the following appendices, or the related documents outlined on the previous page.

- **Appendix A: Land Use Transit Demand.** Summarizes research into the relationship between density and transit ridership.
- **Appendix B: Future Service Concepts.** Provides additional detail related to topics discussed in Chapters 7, 8, and 9.
- **Appendix C: Funding Options.** Summarizes transit funding options.
- **Appendix D: Updated Bend Urbanized Area Map.** Provides a map of the revised 2010 Census Boundary for the Bend Urbanized Area.

The Existing Conditions memo provides additional detail on the topics in this chapter.

2 COMMUNITY PROFILE AND DEMOGRAPHICS

COMMUNITY PROFILE

The city of Bend is the fifth-largest metropolitan area in Oregon and the largest city east of the Cascades, with a population of 76,639 in 2010. Bend comprises nearly 50% of the total population of Deschutes County. Bend grew rapidly in the 1990s and early-to-mid 2000s, however the housing downturn significantly affected housing values and employment, particularly construction jobs. Employment is not projected to return to a level near its 2007 peak until 2020.[2]

Bend is home to Central Oregon Community College (COCC). COCC enrollment has grown significantly in recent years. Full-time equivalent enrollment increased from 3,463 in 2007 to 5,479 in 2011 at the Bend campus—an increase of 58%. Total Bend campus enrollment was 14,632 in 2011. The Oregon State University (OSU) Cascades Campus is co-located with COCC and offers four-year and master's degrees. It has also grown significantly and has 678 students as of the Fall 2011 term. OSU is actively planning a new facility along Colorado Avenue in southwest Bend, with enrollment of 5,000 students projected within the next several years, of which about 8% are expected to live on-campus.

Located on the eastern edge of the Cascade Range along the Deschutes River, Bend is a hub for recreation with a relatively dry, high desert climate year-round. Tourism (including the Mt. Bachelor Ski Resort), manufacturing, high tech, and health care, are major economic sectors. Emerging or niche market products and services include semiconductors, software, medical instruments, and recreational equipment.

[2] Carolyn Eagan (OED Economist for Region 10), Personal Communication, January 2012.

DEMOGRAPHICS

This section reviews demographic information for Bend, focusing on segments of the population that typically have the greatest need for public transit services. Figure 2-1 lists these demographic categories and their share of the population in Bend compared to the state of Oregon overall. [3]

Figure 2-1 Demographic Summary

Demographic Category	City of Bend	Oregon
Total population	76,639	3,831,074
% Youth (persons aged 10-17) [a]	12.4%	13.9%
% Seniors (persons aged 65+) [a]	10.1%	10.2%
% Minority	12.7%	21.5%
% Low-Income Households [b]	10.4%	14.0%
% Persons with a Disability [c]	12.0%	13.4%
% Households without a Vehicle [b]	5.4%	7.6%
% Population Speaking English Less than "Well" [b]	1.8%	3.6%

Notes: Minority includes non-white persons of one race and persons of two or more races. Low-income households are those earning below the federal poverty level. Disability is for the civilian non-institutionalized population aged 5 years or older. Population speaking English less than "well" is based on persons aged 5 years or older.

Sources: (a) U.S. Census Bureau, 2010 U.S. Census, Summary File 1: P1, P9, P12. (b) U.S. Census Bureau, American Community Survey, 2006-2010 5-Year Averages: B16004, B25044, C17002. (c) U.S. Census Bureau, American Community Survey, 2008-2010 3-Year Averages: S1810. Due to the change in disability questions in 2008, only a 3-year average is available.

The density of population, jobs, and services in a city are major determinants of transit demand. Figure 2-2 illustrates the general population density in Bend, based on 2010 Census data, in relation to existing transit service. Additional maps (Figure 2-3 through Figure 2-8) illustrate how specific population segments are distributed in the city, based either on U.S. Census data (by block) or American Community Survey (ACS) data (by block group, which includes multiple Census blocks). The population segments analyzed, and their general relationship to transit demand, are as follows:

- **Seniors.** Older adults often exhibit higher demand for transit as they become less capable or willing to drive themselves, or can no longer afford to own a car on a fixed income. They tend to use public transportation during the middle of the day for shopping and medical appointments. Seniors aged 65 or older account for just over 10% of the Bend population.

[3] Each of these categories is based on a single characteristic, thus some individuals will be included in one or more demographic group.

As shown in Figure 2-3, some of the highest densities of seniors aged 65 or older reside in east Bend between Greenwood Avenue and Neff Road.

- **Youth.** Young people without driver's licenses or those unable to drive need transit service for school and after-school activities, part-time jobs, and access to recreation and entertainment particularly during the summer months. National trends show that a lower proportion of younger adults feel they need to own their own vehicle than earlier generations. Figure 2-4 shows youth density in relation to transit routes.
- **Persons with disabilities.** Persons with disabilities often are heavily dependent on public transit service. In the city of Bend, 12% of the overall population has one or more disabilities, on average between 2008 and 2010, including 9.5% of the population aged 18 to 64 and nearly 36% of the population aged 65 or older.[4]
- **Low-income households.** Over 10% of households in Bend are considered low-income, defined as earning at or below the federal poverty level, which is based on household size. An additional 19% of the population in the city of Bend earns between 100% and 200% of the federal poverty level. Figure 2-5 shows the density of low-income households in relation to transit routes.
- **Households without access to a vehicle.** One of the most influential indicators of transit demand is access to a motor vehicle, whether due to lack of economic means, inability to drive, or by choice. Over 5% of households in Bend do not have access to a vehicle. Figure 2-6 shows that the distribution of these households is roughly aligned with the distribution of low-income households and/or seniors.
- **Minority households.** "Minority" is defined for the purposes of this analysis as non-white persons of one race and persons of two or more races. The proportion of the minority population in Bend is 12.7%. Figure 2-7 illustrates the density of minority households in Bend.
- **Persons with limited English speaking skills**. Limited English speaking skills is an indicator of the ability for upward economic mobility and correlates closely to income. This can be another indicator of a household's relative dependency on transit. Roughly 2% of city of Bend residents speak English "less than well." Figure 2-8 identifies parts of Bend with the highest densities of population speaking English "less than well."

[4] Due to a change in disability questions starting in 2008, only a 3-year average is available for disability data. Data from the 3-year average is not available at the block group level and is not mapped.

Figure 2-2 Population Density, 2010

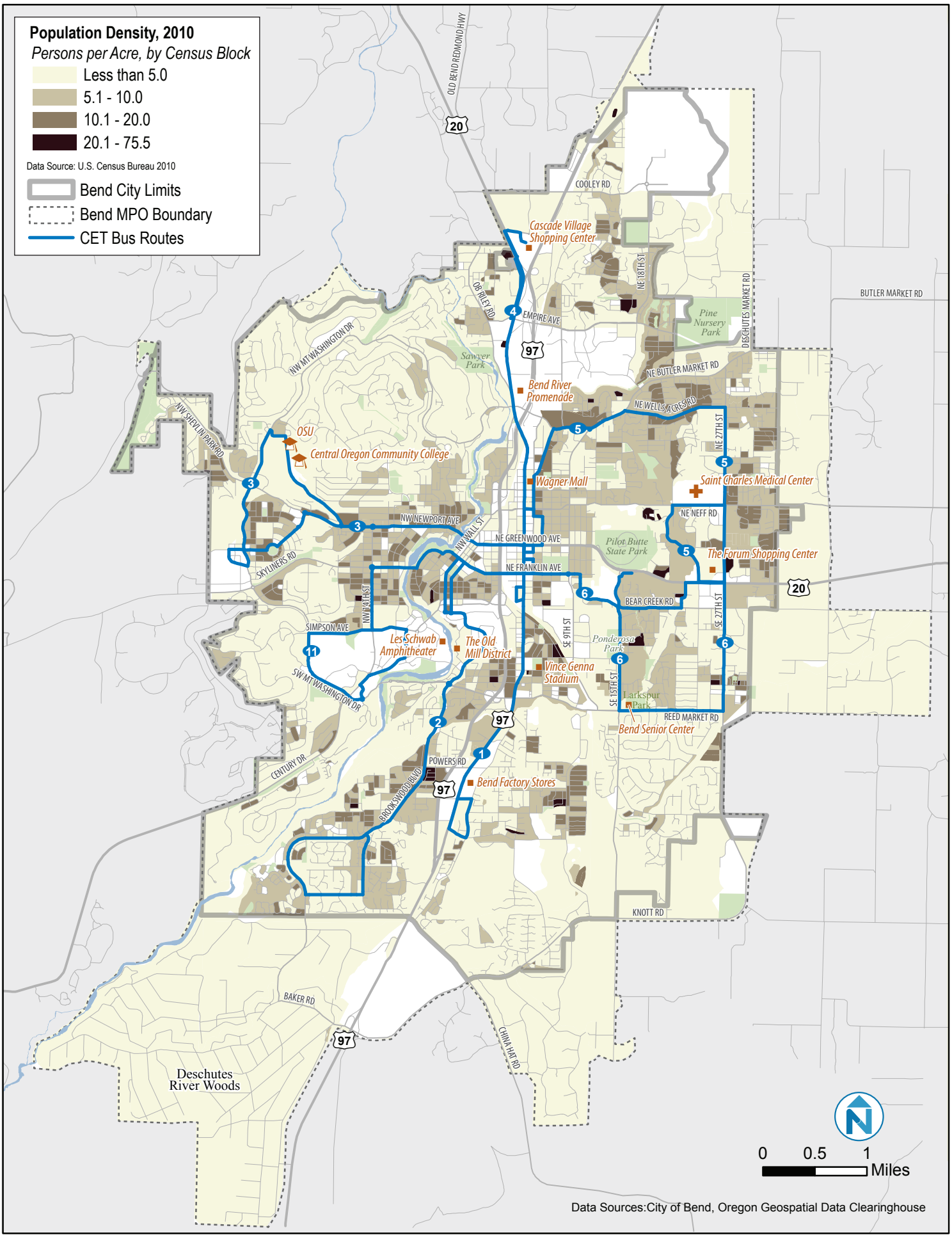


Figure 2-3 Senior (Aged 65 or Older) Population Density, 2010

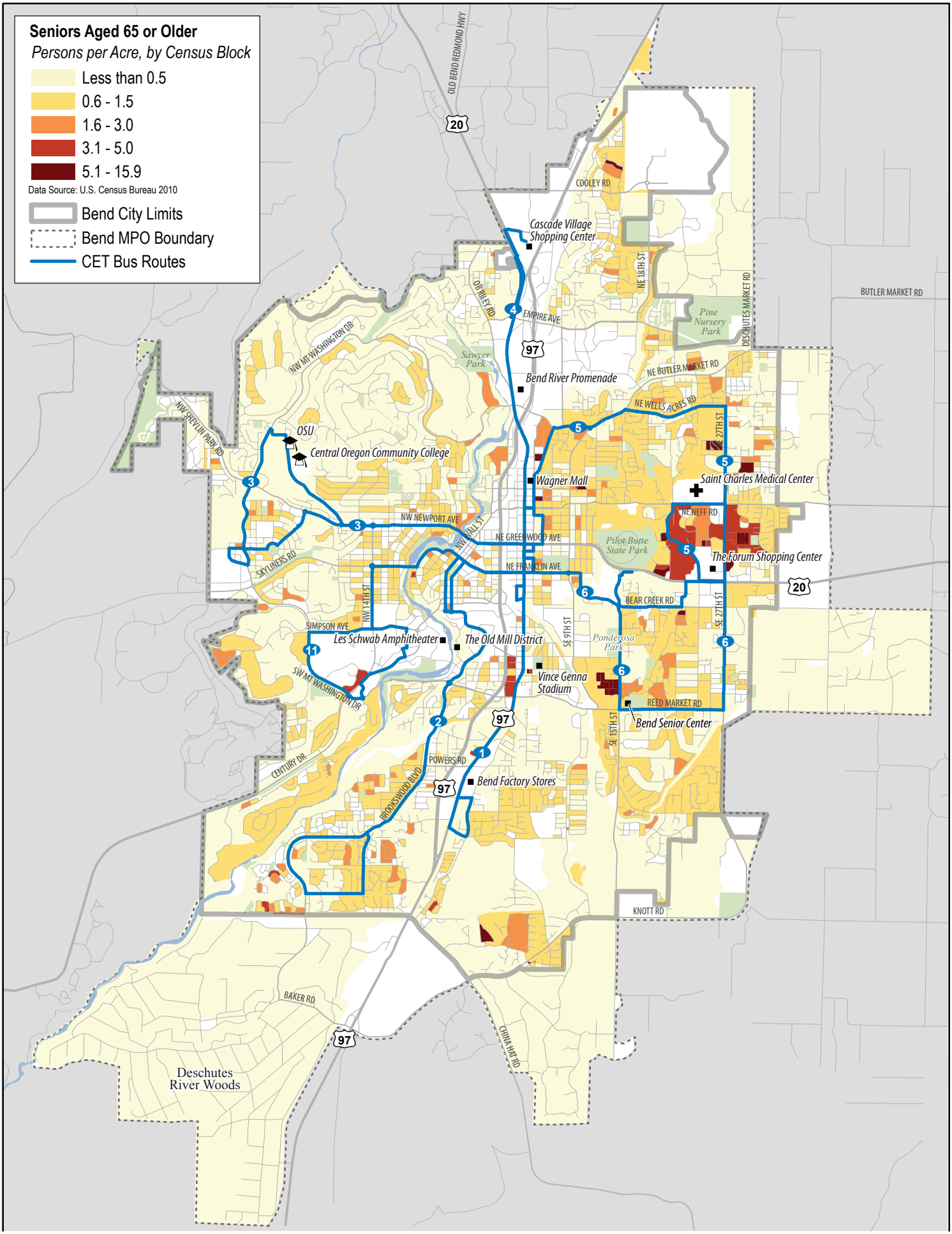


Figure 2-4 Youth (Aged 10 to 17) Population Density, 2010

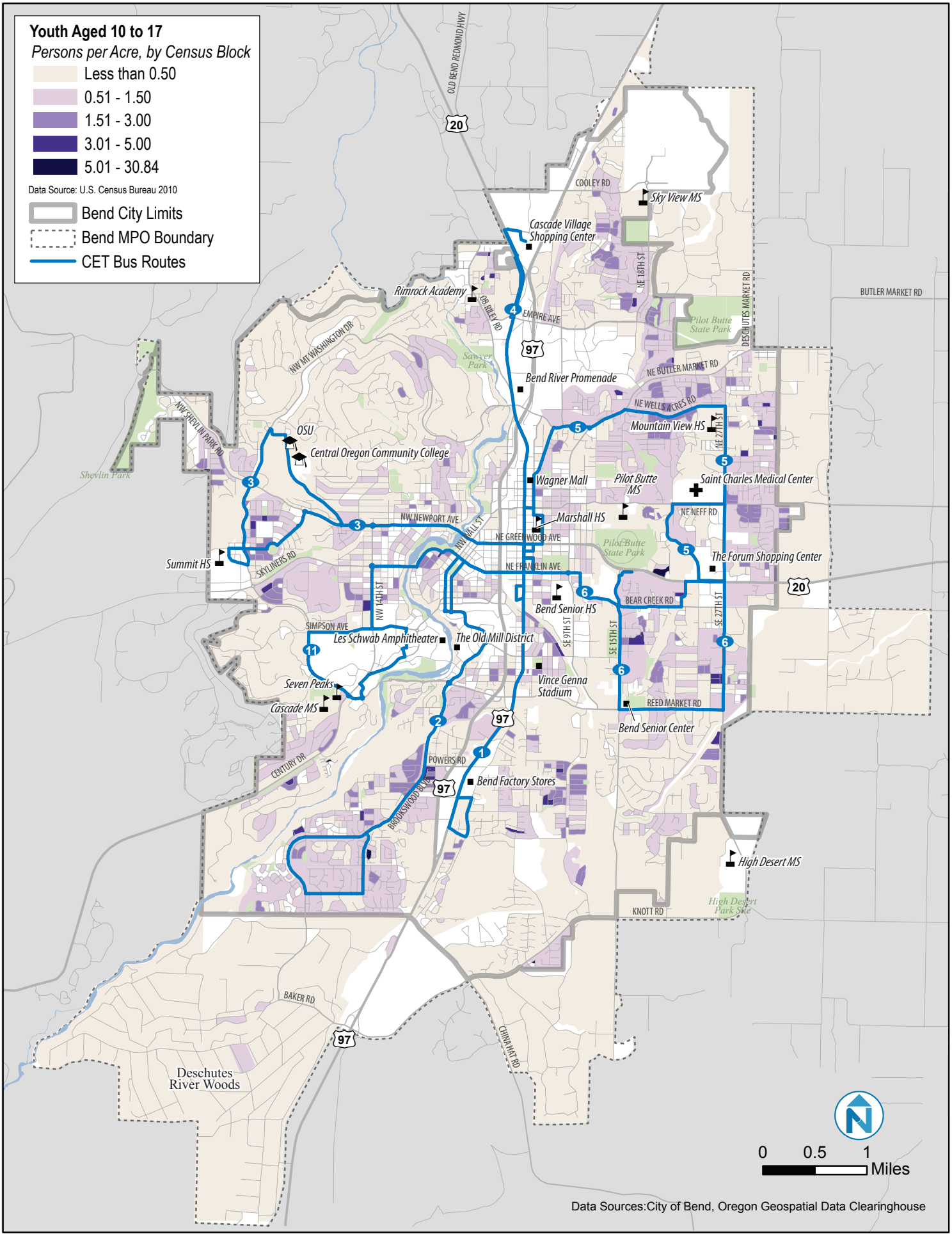


Figure 2-5 Low-Income Household Density, 2005-2009 5-Year Average

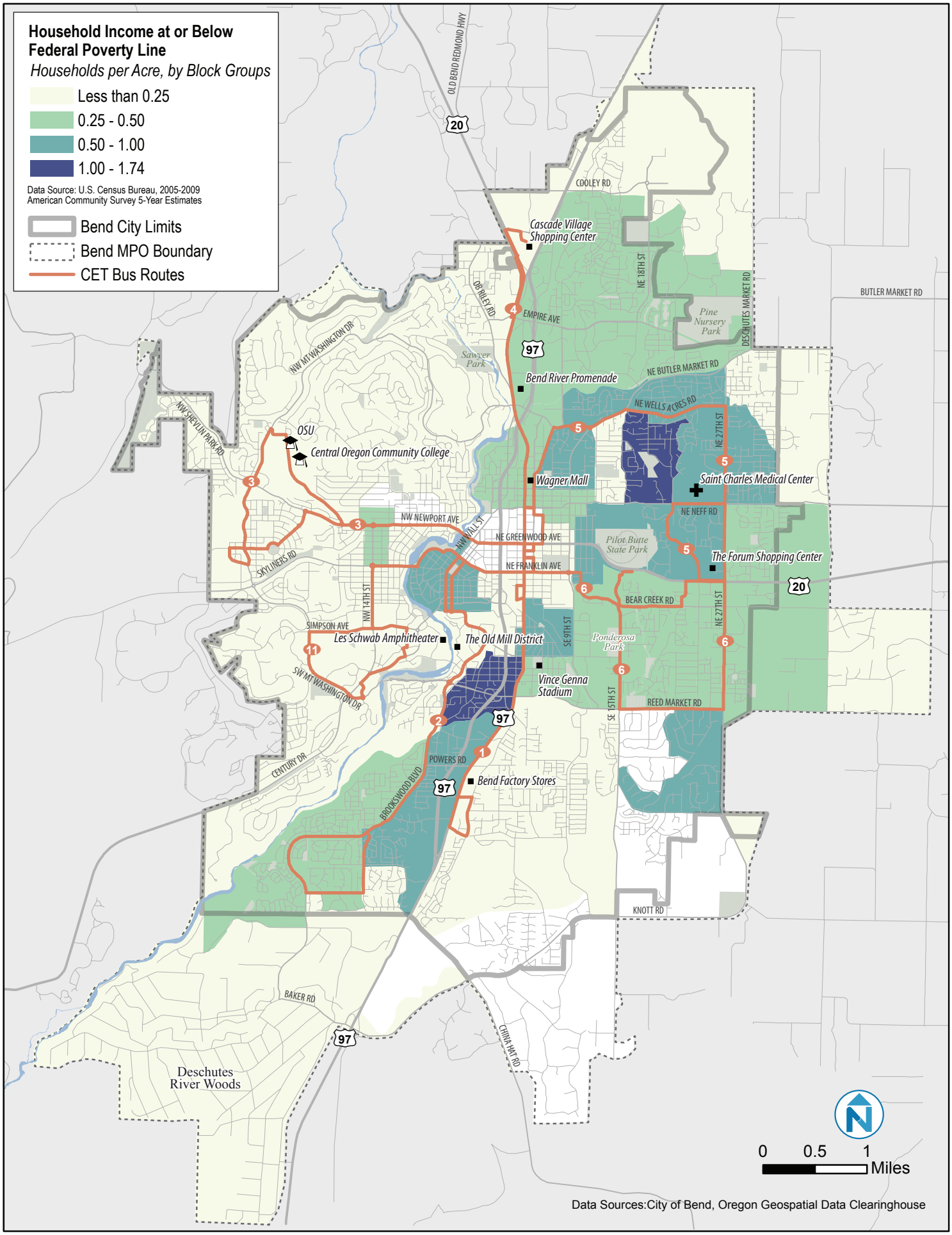


Figure 2-6 Density of No-Vehicle Households, 2005-2009 5-Year Average

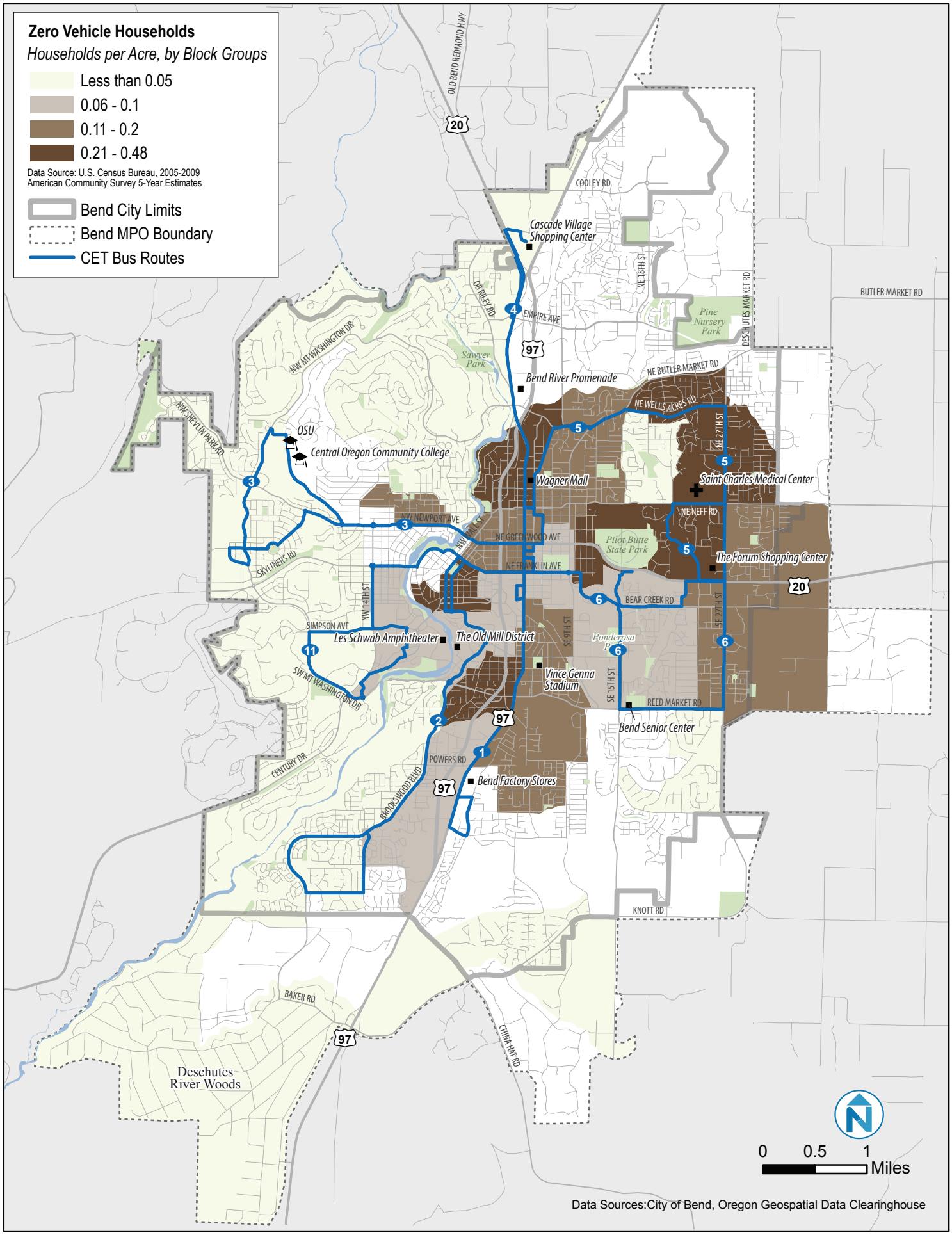


Figure 2-7 Minority Population Density, 2010

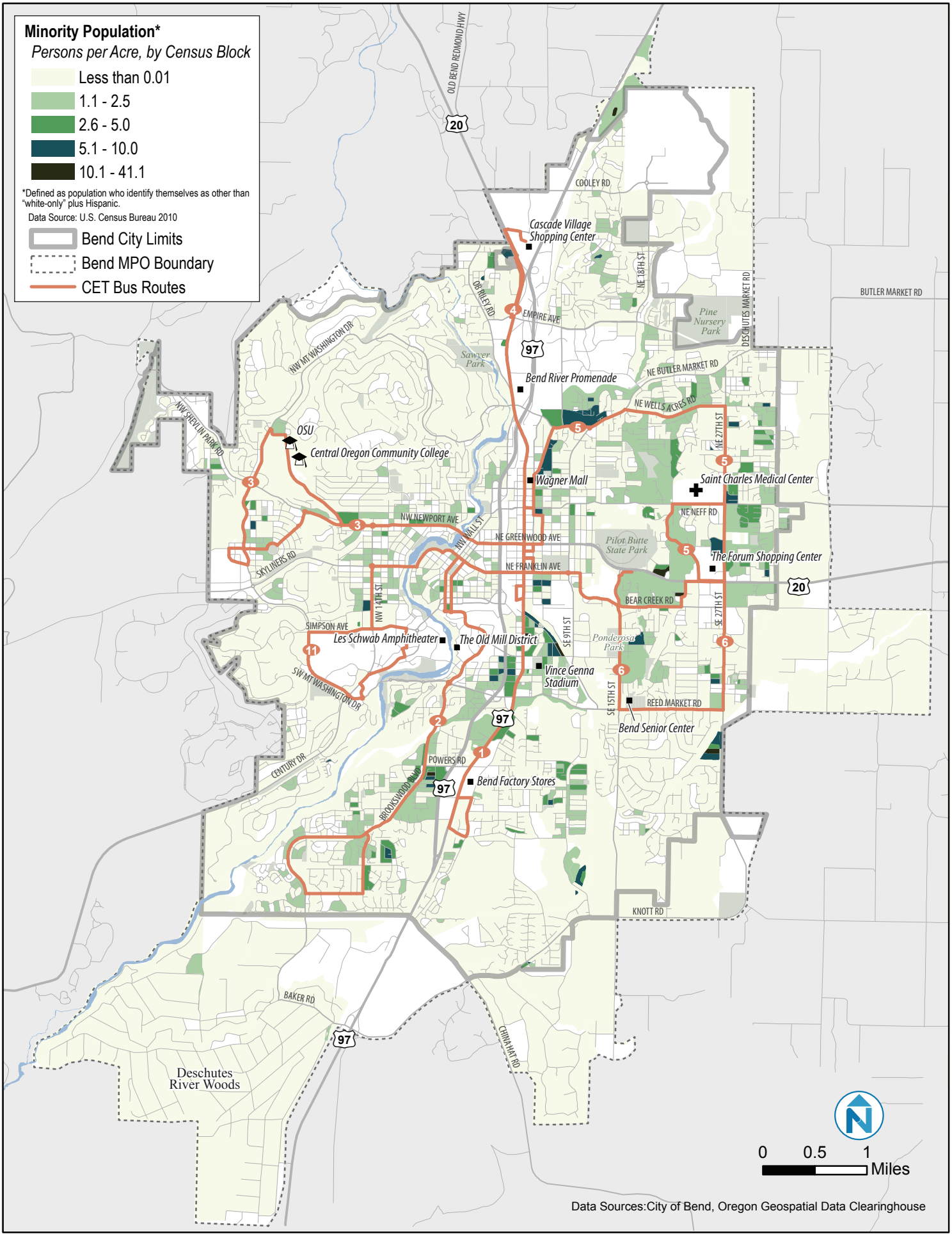


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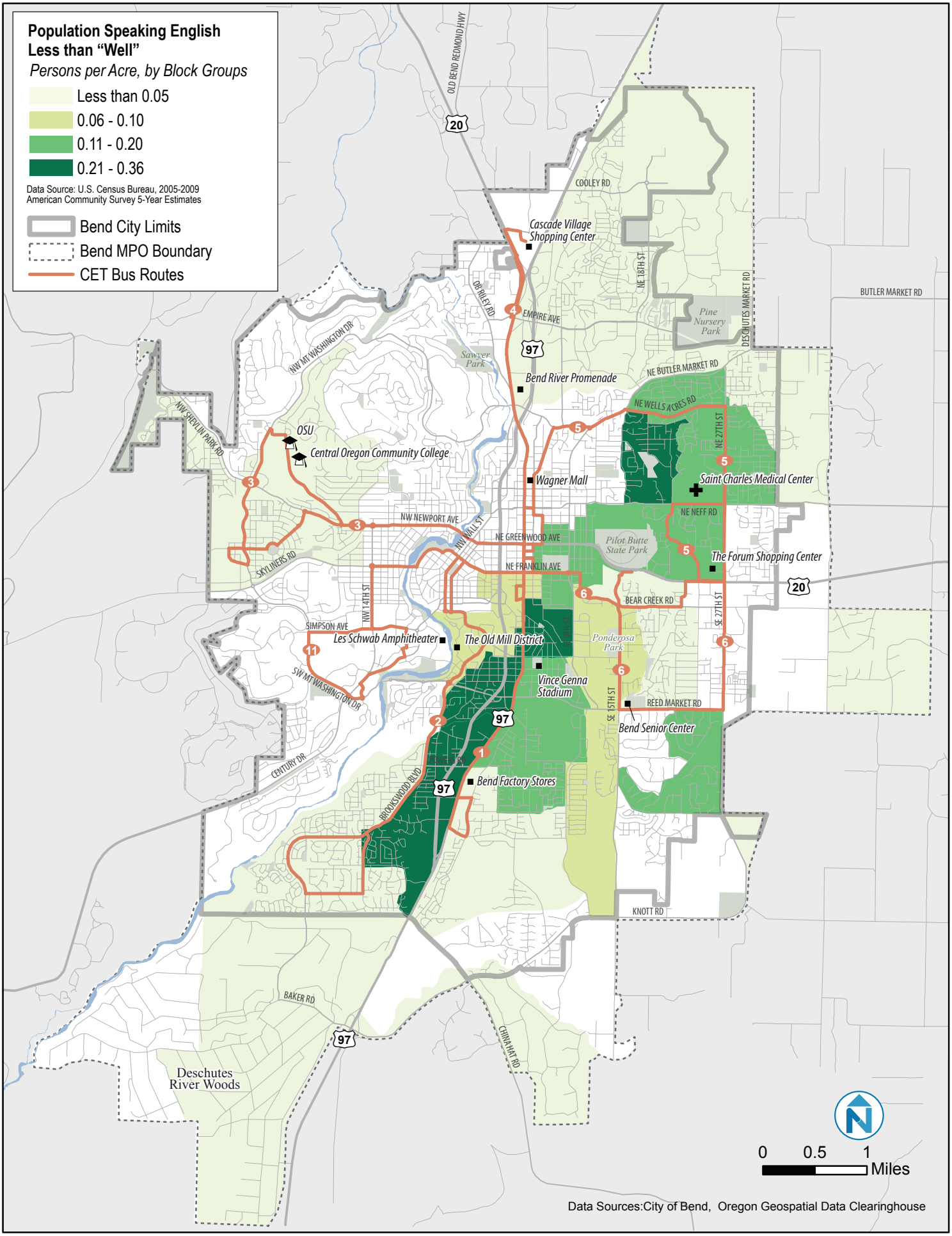
Figure 2-8 Density of Population Speaking English Less than "Well", 2005-2009 5-Year Average



POPULATION AND EMPLOYMENT PROJECTIONS

Figure 2-9 lists the most recent population projections (2004) for Bend (Urban Growth Boundary) and Deschutes County. These projections forecast over 100% growth for both Bend and Deschutes County between 2000 and 2025—an average increase of slightly more than 4% annually.

However, actual 2010 population estimates from the Portland State University Population Research Center (PRC) were approximately 5% lower than the earlier 2010 forecast: 76,740 for Bend and 157,905 for Deschutes County as of July 1, 2010.

Figure 2-9 Population Growth Projections, Bend UGB and Deschutes County

Geography	2000 (Actual)	2010 (Projected)	2010 (Actual)	2025 (Projected)	% Change, 2000-2025
Bend UGB	52,800	81,242	76,740	109,389	107.2%
Deschutes County	116,600	166,572	157,905	240,811	106.5%

Source: Deschutes County Coordinated Population Forecast, 2000-2025, August 25, 2004. Actual population for 2010 is from the 2010 U.S. Census.

About 65% of jobs in Deschutes County are located within the Bend Urban Growth Boundary (UGB). The largest employers in the city of Bend include St. Charles Medical Center, Central Oregon Community College (COCC), Bend Memorial Clinic, and the City of Bend (see Figure 2-10). As a result of the economic downturn, the level of employment in the region is not expected to reach peak 2007 levels until 2020.[5]

Figure 2-10 Top Employers in Bend (over 400 employees), 2011

Employer Name	Avg. # of Employees	Source/Notes
St. Charles Medical Center	2,978	1, Includes Redmond center
Sunriver Resort	900	2, Seasonal high, 2012
Les Schwab Tire Center	870	1. Regional
Mt. Bachelor	760	1, Seasonal high
Walmart	591	1, Regional
Bend Memorial Clinic	558	1
Safeway	500	1
Fred Meyer	472	1, Regional
Opportunity Foundation	420	1

Note: Does not include public sector employers, e.g., COCC.

Sources: (1) Bend Chamber of Commerce, 2011. (2) Economic Development for Central Oregon (EDCO), 2012.

[5] Carolyn Eagan (OED Economist for Region 10), Personal Communication, January 2012. Peak employment in the Tri-County Region 10 area, of which Deschutes County comprises about 85% of jobs, was 84,870.

Figure 2-11 Population Density, 2010 U.S. Census

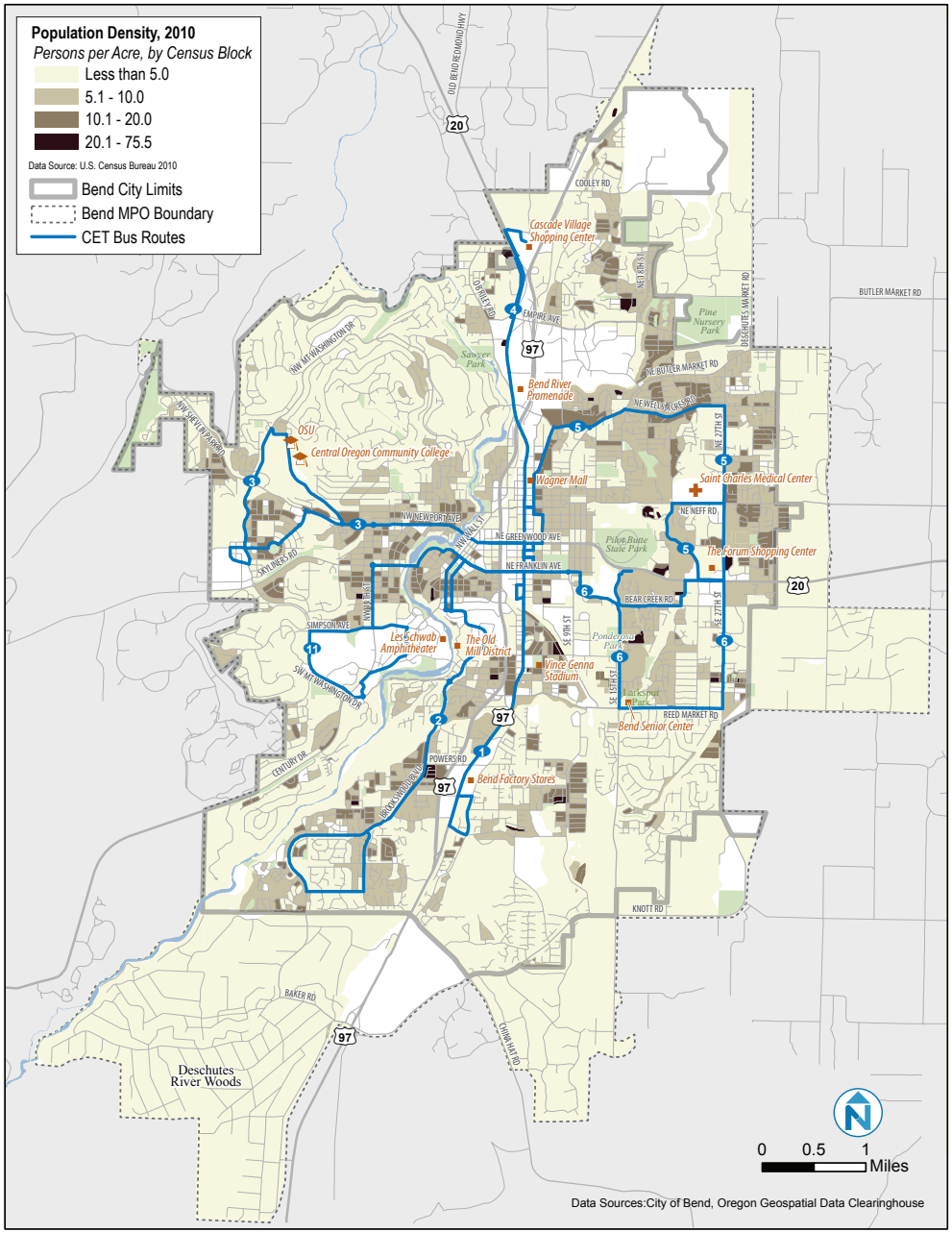


Figure 2-12 Projected Population Density, 2030

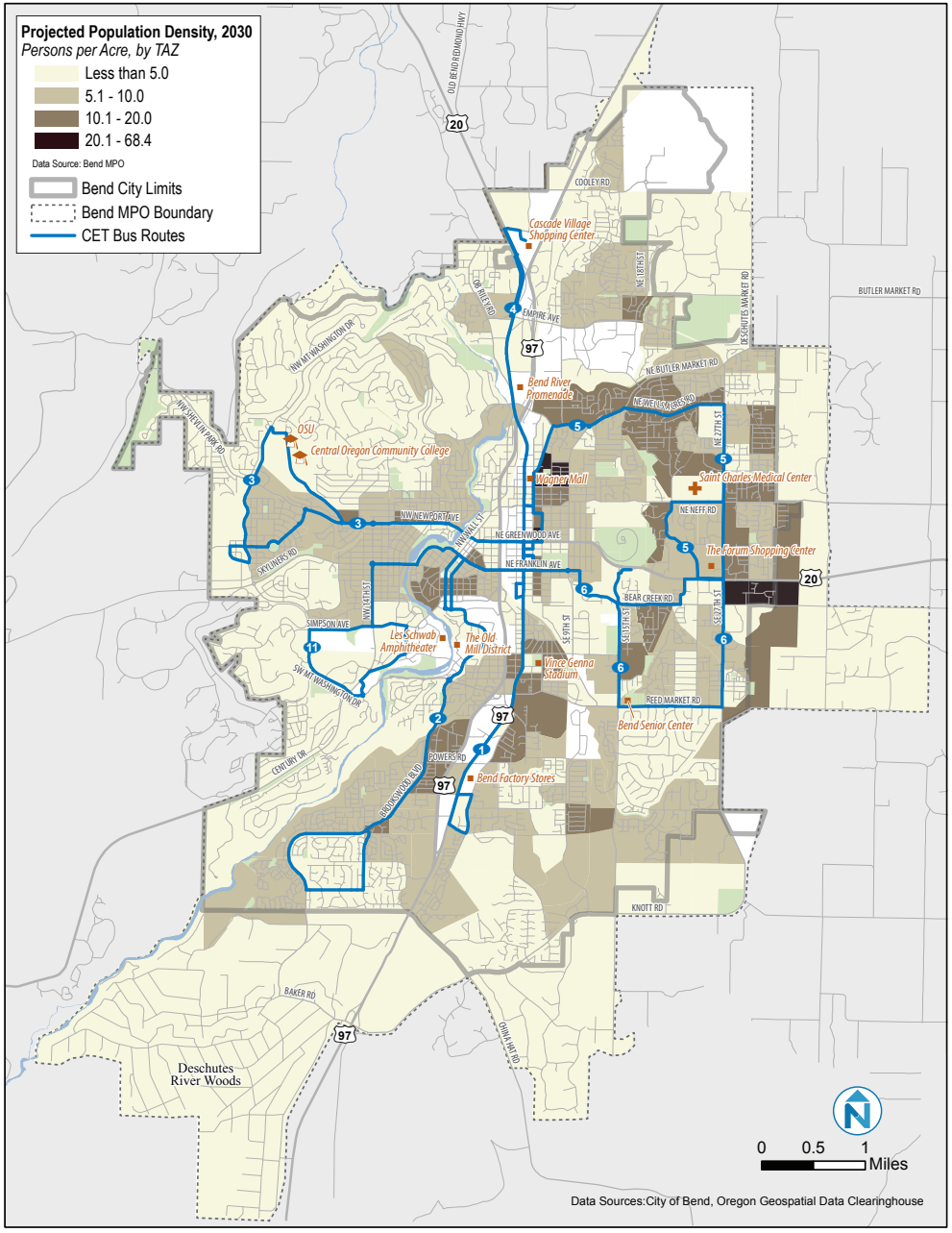


Figure 2-13 Employment Density, 2010

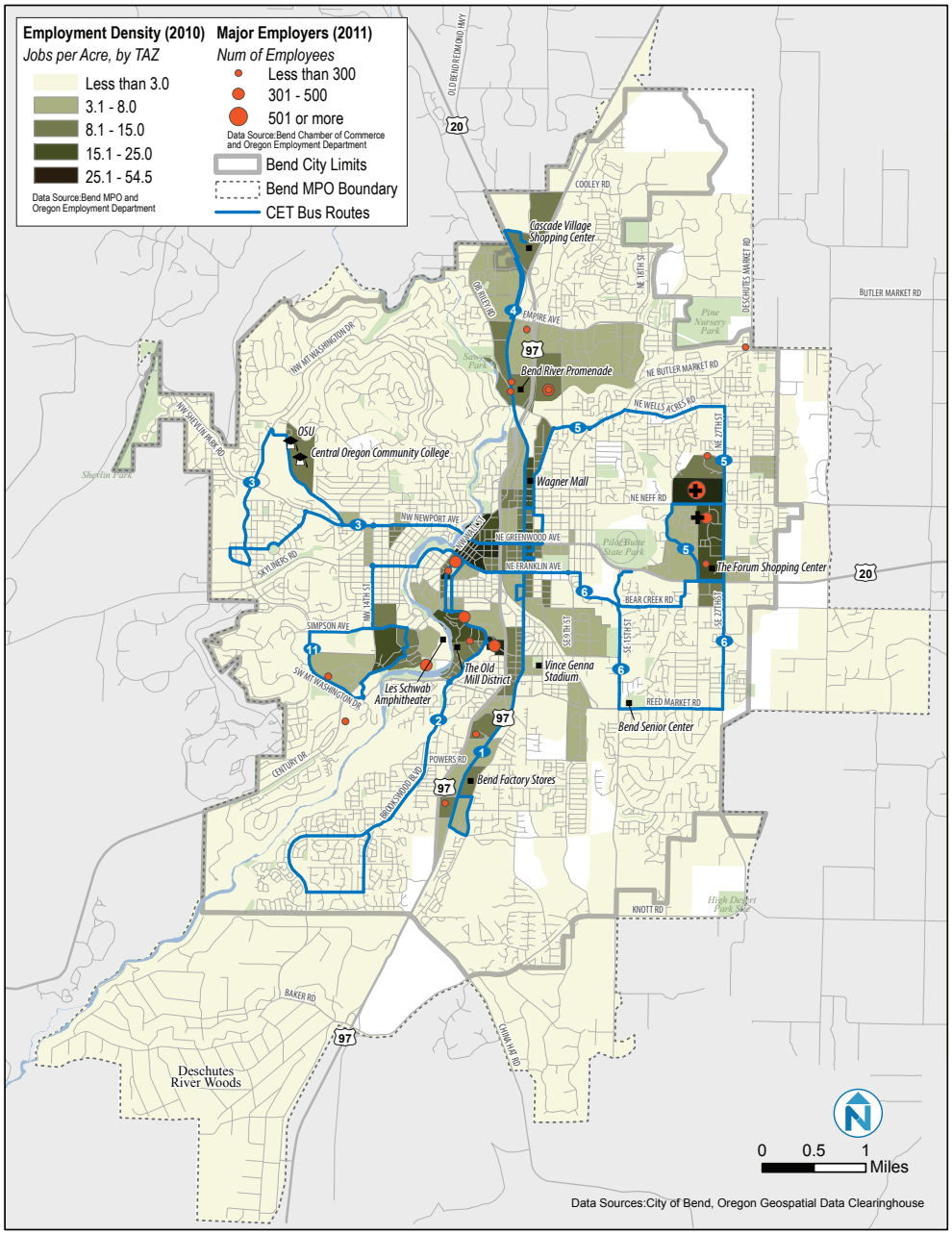
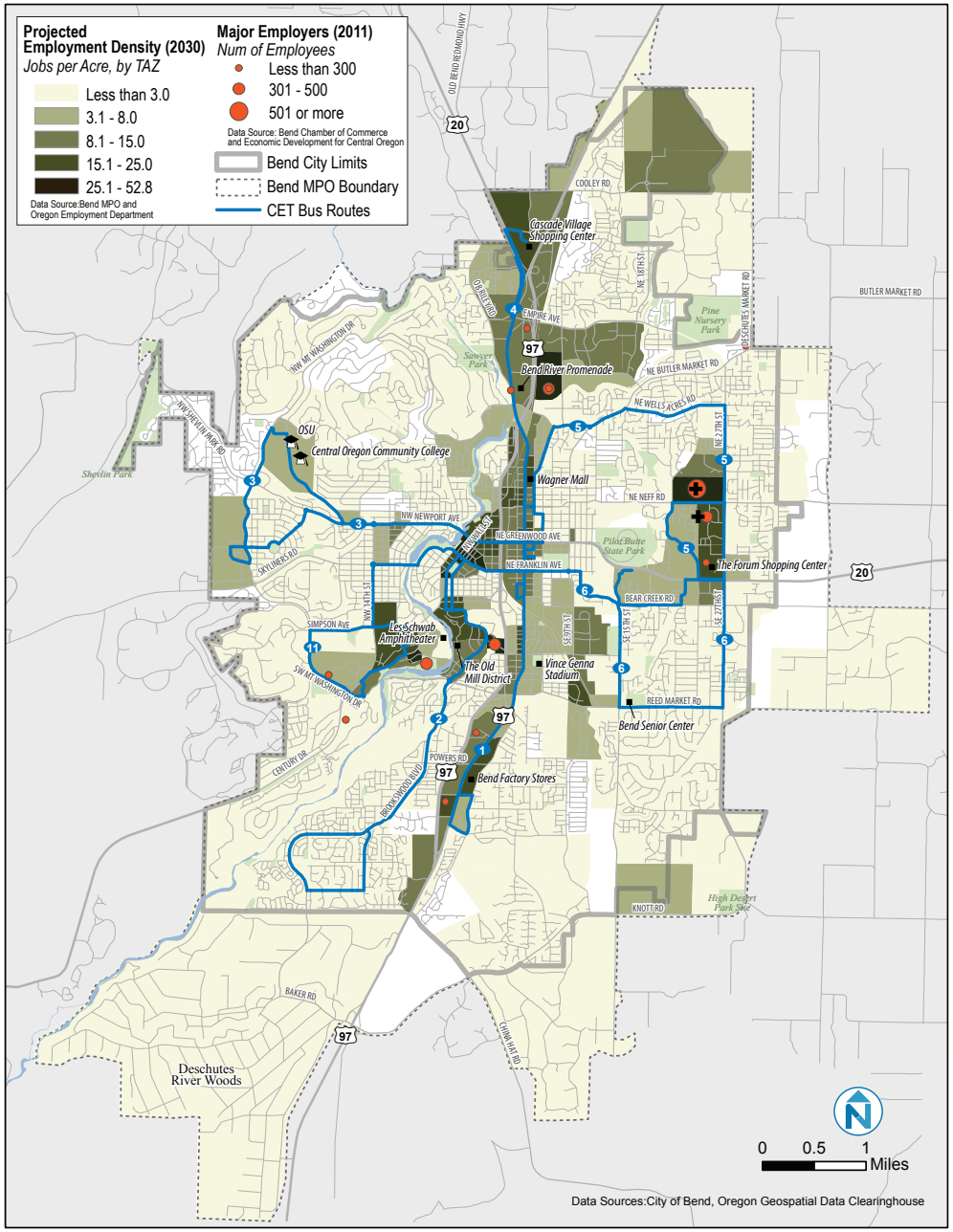


Figure 2-14 Projected Employment Density, 2030

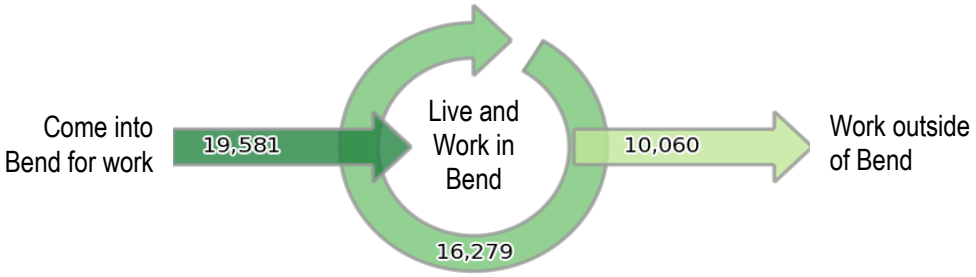


TRAVEL PATTERNS

Work Commute Patterns

Based on U.S. Census Bureau LEHD (Longitudinal Employer-Household Dynamics) data for 2009, of the over 38,000 total jobs in the city of Bend, nearly 21,000 (about 55%) are held by workers who live outside of Bend. About 16,000 Bend workers both live and work in Bend.[6] In addition, about 10,000 Bend residents work outside of the city; this represents about 38% of residents who are working. The maps in Figure 2-16 and Figure 2-17 illustrate the work locations of Bend area residents and the home locations of Bend area workers.

Figure 2-15 Commute Flows to, from, and within Bend (Primary Jobs), 2009



Source: U.S. Census Bureau, LEHD, 2009

Figure 2-16 (left panel) shows the work locations of Bend area residents in 2009, in relation to bus routes in Bend. These locations generally correspond to where existing bus service runs, with the exception of clusters of jobs in NE and SE Bend (see inset map). Outside of city limits, there is a moderate concentration of jobs in the vicinity of Bend Municipal Airport. Outside of the Bend area, there are moderate concentrations of residents employed in Redmond, Prineville, and Sun River.

Figure 2-17 (right panel) illustrates the home locations of Bend area workers. While the most significant concentrations of home locations within city limits have transit service, the exceptions are in the southeast quadrant of the city and in the northern portion of the city, east and west of Highway 97 (see inset). Outside of city limits, there is no fixed-route transit service to Deschutes River Woods, in the southwest corner of the Bend MPO boundary.[7] Outside of the Bend area, the highest concentrations of home locations are in Redmond, Prineville, Tumalo area, and Sun River/La Pine area.

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[6] Limited to primary jobs, defined as the one job for each worker that provides the most earnings.

[7] As of 11/26/2012, a stop for the Bend-La Pine Community Connector was implemented at the Riverwoods Baptist Church in Deschutes River Woods (on Cinder Butte Road near the intersection with Baker Road). A future stop at the Riverwoods Country Store may be feasible in the future, but would involve additional capital costs.

Figure 2-16 Work Locations of Bend Residents, 2009

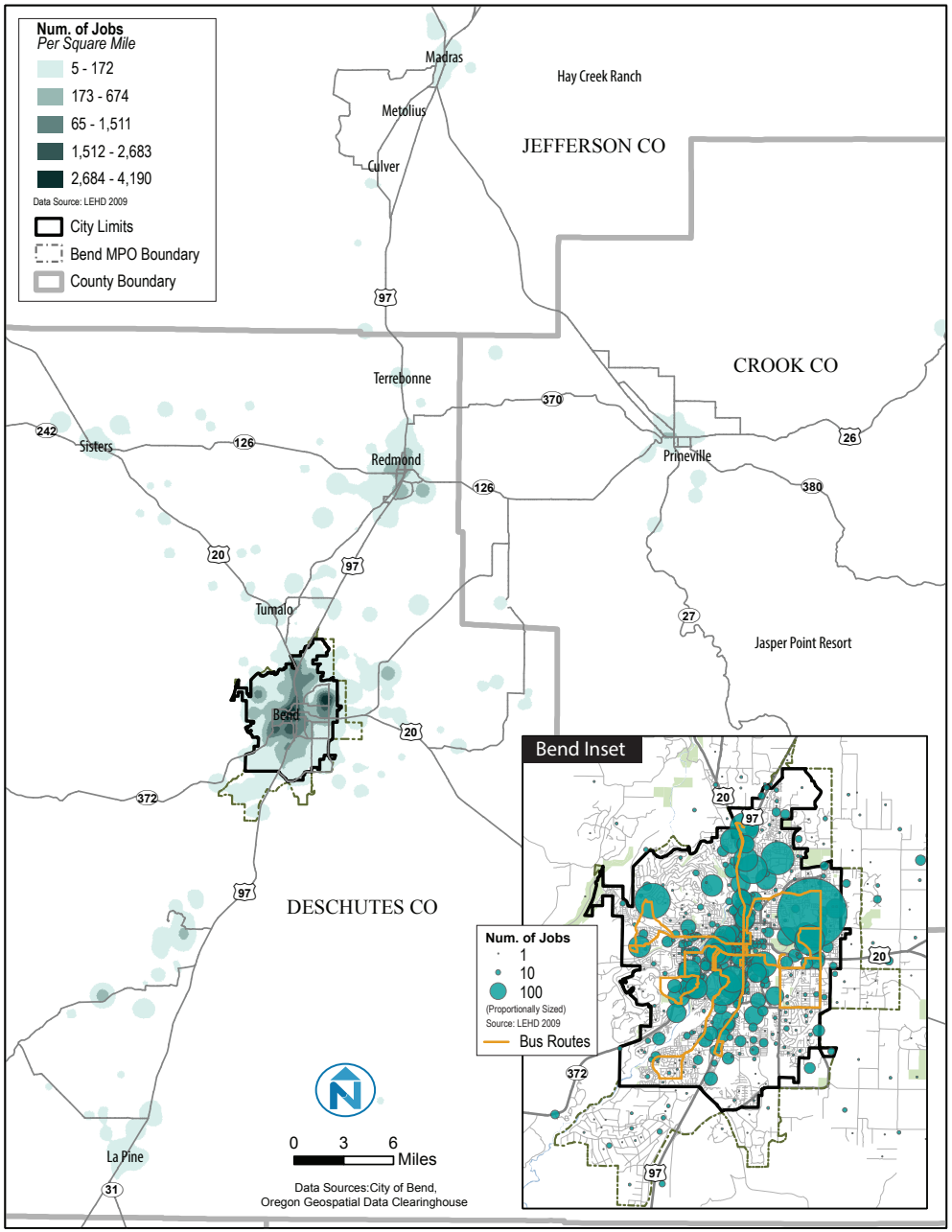
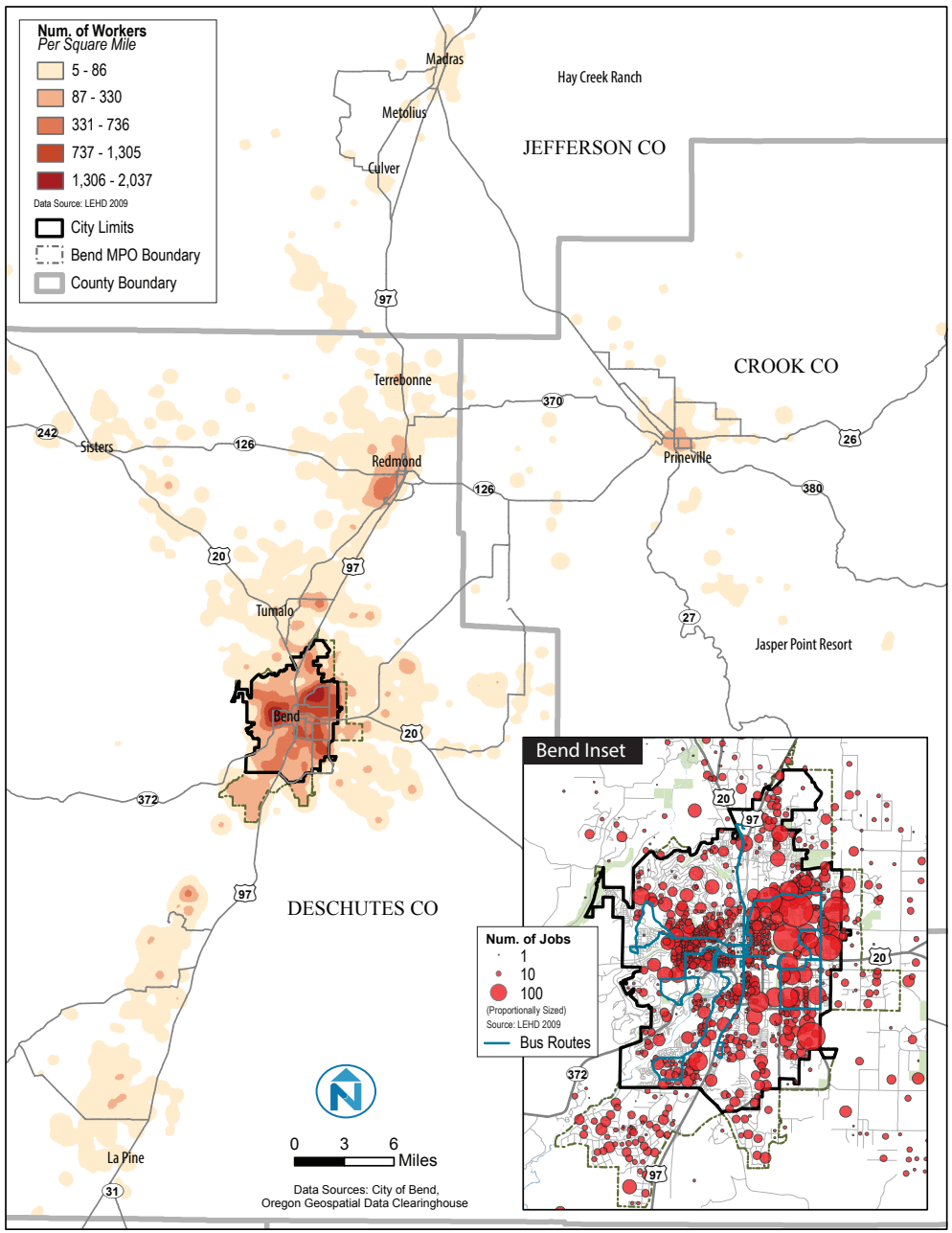


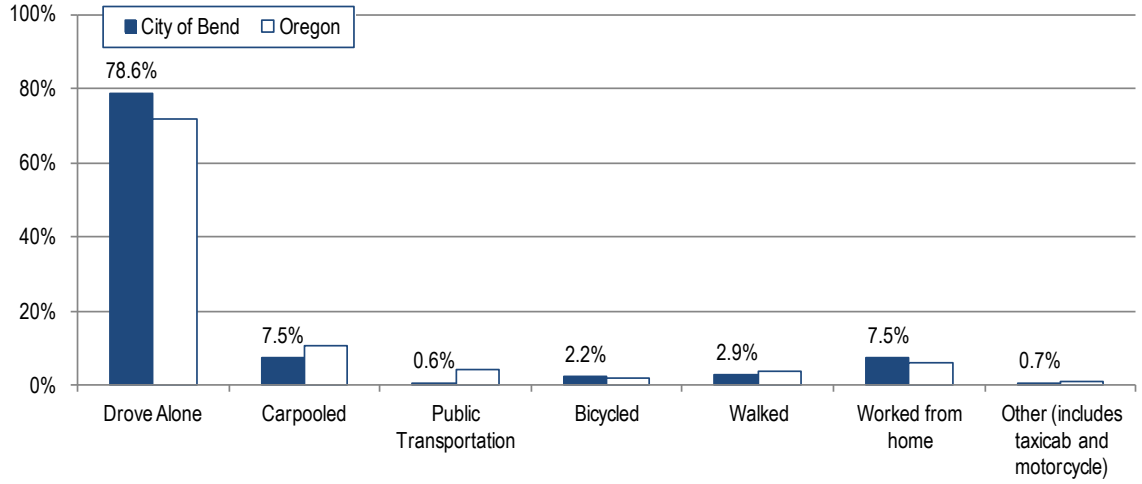
Figure 2-17 Home Locations of Bend Workers, 2009



Work Commute Mode

Figure 2-18 illustrates the percentage of work commute trips in Bend made by different forms of transportation (mode share), based on the ACS. Less than 1% of workers age 16 or older residing in Bend commute to work by public transportation, while over 2% bike to work and nearly 3% walk.

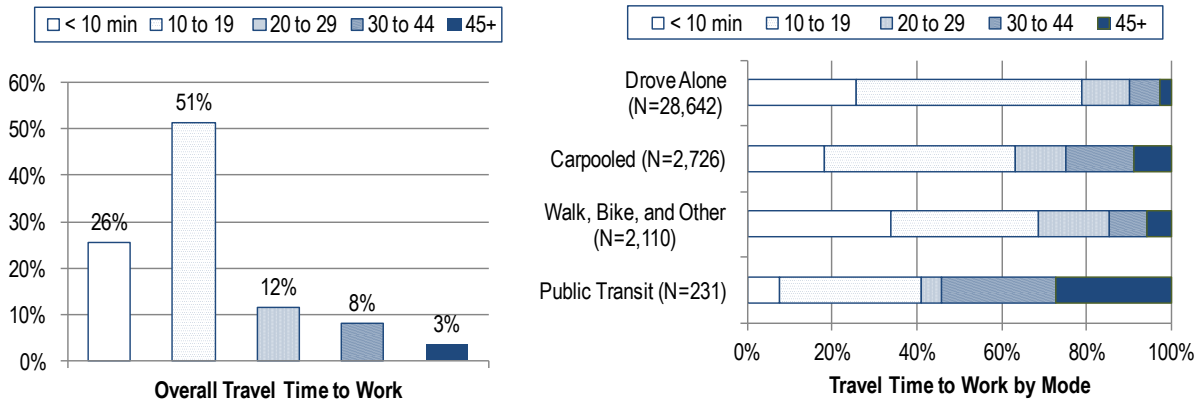
Figure 2-18 Commute Mode Share, 2006-2010 5-Year Average



Source: American Community Survey, 2006-2010 5-Year Average

The left panel of Figure 2-19 shows that most Bend residents have relatively short commutes; more than 75% of working residents travel fewer than 20 minutes to work. However, the right panel of Figure 2-19 shows that the majority of transit riders had commutes of 30 minutes or more (see lowest horizontal bar).

Figure 2-19 Commute Travel Time to Work, Overall and by Mode, 2006-2010 5-Year Average



Source: American Community Survey, 2006-2010 5-Year Average. "Other" includes walk, bicycle, taxicab, and motorcycle modes.

The Existing Conditions memo provides additional detail on existing land use and transit services.

3 EXISTING LAND USE AND TRANSIT SERVICES

EXISTING LAND USE

Land use and development in the City of Bend is guided by its adopted General Plan. The General Plan is implemented primarily by the City's development code. The City's General Plan and Zoning map illustrate land use or zoning districts, which define characteristics such as allowed land uses and intensity of development. These districts include several types of residential zones (low, standard, medium, and high-density), non-residential zones such as commercial or industrial, and mixed-use zones that allow both residential and non-residential uses to be combined on a site. The City's Urban Growth Boundary (UGB) establishes land appropriate for annexation and urban development based upon a 20-year population projection, and the Urban Reserve Boundary identifies the long-term expansion needs of the City beyond the 20-year period.

EXISTING TRANSIT SERVICES

Transit Overview

Local fixed-route bus service in Bend is operated by Cascades East Transit (CET) and serves developed areas within the Bend city limits. As shown in Figure 3-2, the system consists of seven routes that are designed to radiate in a "hub and spoke" pattern from the main transit center, Hawthorne Station (shown in Figure 3-1). CET Community Connector service provides direct regional connections between Hawthorne Station and La Pine and Redmond. From Redmond, the regional transit hub, additional connections are available to Redmond Airport, Prineville, Madras, and Sisters, as shown in Figure 3-3. CET also operates seasonal service to Mt. Bachelor and the Ride the River route in Bend. Figure 3-4 describes the characteristics of local, regional, and seasonal services.

In addition, Dial-A-Ride (curb-to-curb) service is available to persons with disabilities and low-income seniors within Bend city limits.

Local Fixed-Route Service

Seven local bus routes depart from Hawthorne Station on common schedules to facilitate transfers between routes. This timed-transfer system is known as a "pulse" and its "hub-and-spoke" design (see Chapter 7) allows any destination in Bend that is served by transit to be reached with no more than one transfer. Passenger stops are spaced at intervals ranging from two blocks to about a mile. Most routes terminate in a one-way loop to extend coverage at the end of each route or to turn the bus around.

- **Routes 1 (S. 3rd) and 4 (N. 3rd)** operate in both directions along 3rd Street (Highway 97 Business Route).
- **Routes 2 (Brookswood) and 11 (Galveston)** serve SW Bend, including downtown Bend and the Old Mill District.
- **Route 3 (Newport)** serves Central Oregon Community College (COCC), Northwest Crossing, and Summit High School.
- **Routes 5 (Wells Acres) and 6 (Bear Creek)** serve the portion of the city east of 3rd Street, north and south of Greenwood Avenue, respectively. These routes serve key activity centers including St. Charles Medical Center, the Forum Shopping Center, and the Senior Center.

Buses run every 40 minutes on weekdays, from about 6:20 AM to 6:15 PM. Service hours are slightly shorter on Saturdays and buses run every 80 minutes. There is no service on Sundays. Route 11, the newest local route, runs for slightly shorter weekday hours than other routes and has several gaps in service. Route 11 also does not run on Saturdays. A one-way fare is $1.50, discounted to $0.75 for seniors (age 60 and older) or persons with disabilities. A full-fare pass allowing all-day use costs $2.50 and a monthly pass costs $30.

All CET fixed-route buses have a rack that can carry two bicycles. In 2011, 1,700 bikes per month were brought on buses in Bend, on average.

Figure 3-1 Hawthorne Station

Hawthorne Station is located on SE Hawthorne Ave. directly east of 3rd Street. It has an indoor waiting area with restrooms and shelters for CET local and regional buses as well as other inter-city buses.

Figure 3-2 Existing Transit Services

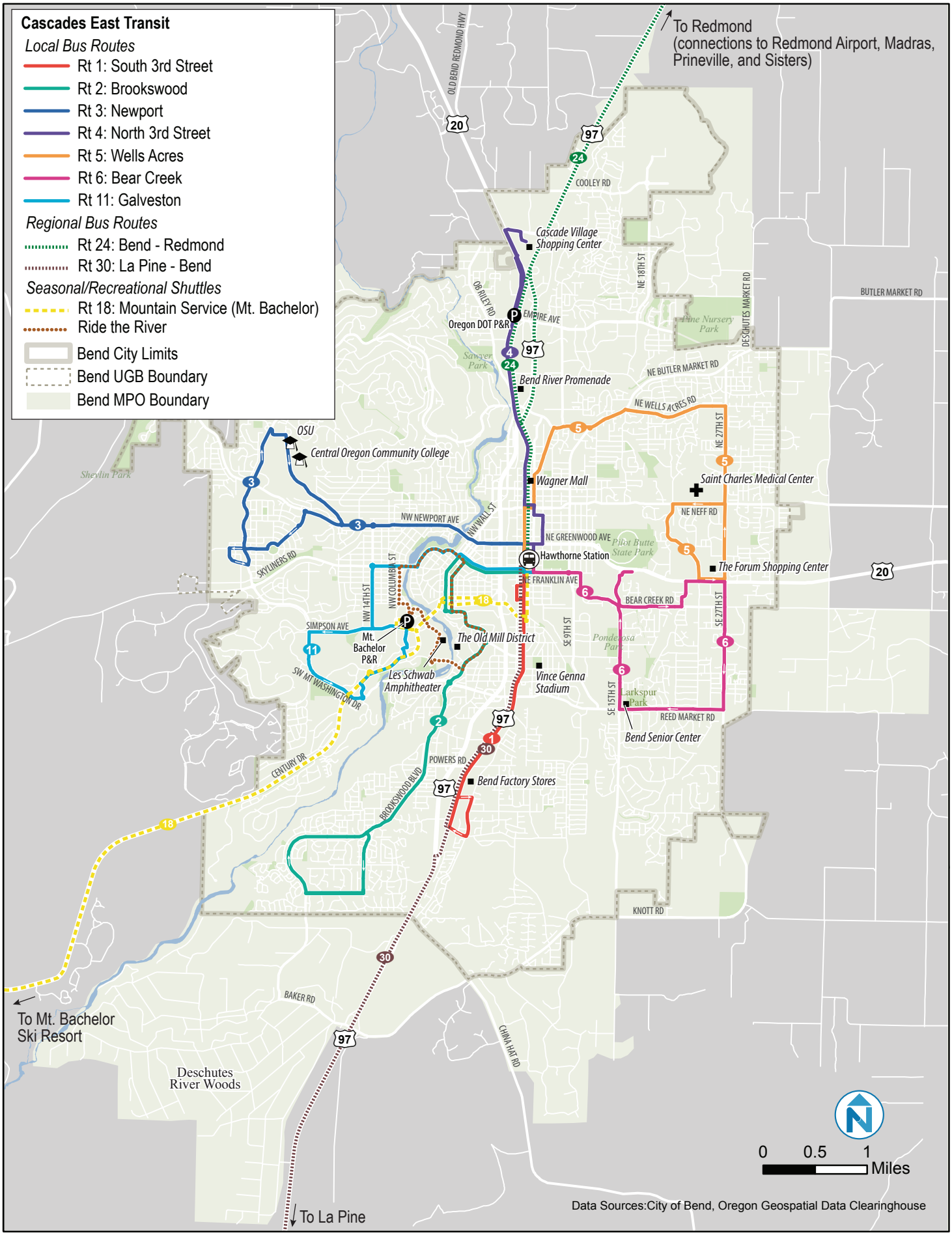


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Figure 3-3 Existing Regional Transit Services

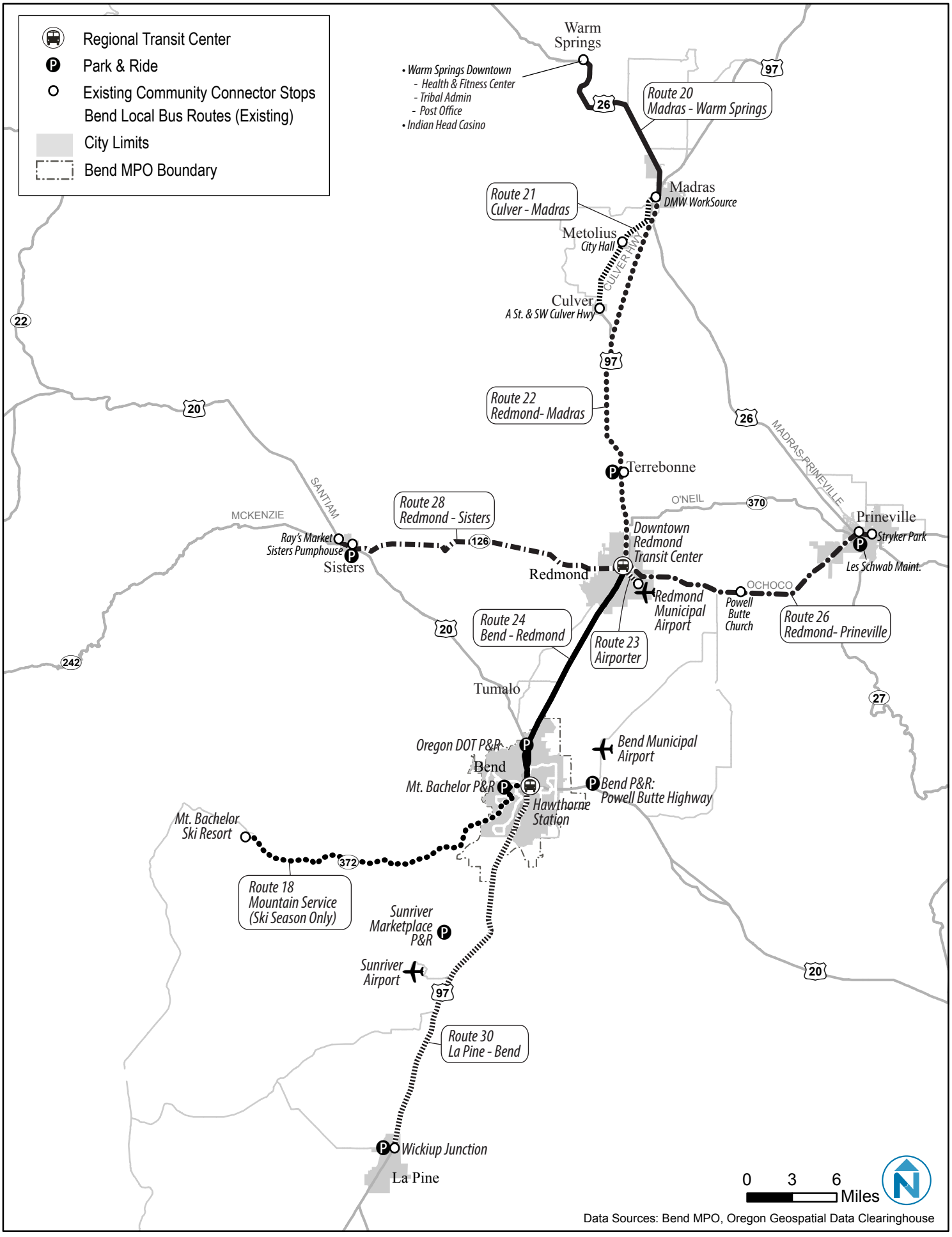

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Figure 3-4 Bus Service Characteristics

Route # and Name	Days of Operation	Weekday[1,2] Hours of Service (Span)	Frequency or Number of Daily Trips	Key Destinations/ Connections [3]
Bend Local Service				
1 South 3rd St.	Mon - Sat	6:20 AM – 6:15 PM [1]	40 minutes, 80 minutes Saturdays	Fred Meyer, Bend Factory Outlets, Walmart
2 Brookswood	Mon – Sat	6:20 AM – 6:15 PM [1]	40 minutes, 80 minutes Saturdays	Downtown Library, Old Mill District
3 Newport	Mon – Sat	6:20 AM – 6:30 PM [2]	40 minutes, 80 minutes Saturdays	COCC/OSU Campus, Summit High School
4 North 3rd St.	Mon – Sat	6:20 AM – 6:15 PM [2]	40 minutes, 80 minutes Saturdays	Cascade Village, ODOT Park & Ride (P&R)
5 Wells Acres	Mon – Sat	6:20 AM – 6:15 PM [1]	40 minutes, 80 minutes Saturdays	Mtn. View High School, St. Charles Medical Center, Forum Shopping Center
6 Bear Creek	Mon - Sat	6:20 AM – 6:15 PM [2]	40 minutes, 80 minutes Saturdays	Senior Center, Municipal Court, Bend High School, Veterans Center, Worksource Bend
11 Galveston	Mon - Fri	7:20–5:45 PM (not continuous)	40 minutes (no service 9:50–11:20 AM, 12:30 – 2:40 PM, and 3:50–4:40 PM), no service on Saturdays	Mt. Bachelor Park & Ride, Social Security, Bend Memorial Clinic
Selected Regional Services [4]				
24 Redmond-Bend	Mon – Fri	6:00 AM – 6:30 PM	4 AM and 4 PM round trips (no midday service from 11:10 am – 1:20 pm)	From Redmond, regional connections include Madras (22), Prineville (26), Sisters (28)
30 La Pine-Bend [4]	Mon – Fri	6:45 AM – 6:15 PM	To Bend: 2 AM, 1 PM. To La Pine: 1 AM, 2 PM. No service from about 9:00 AM-3:30 PM	Wickiup Junction P&R (Burgess Road & Hwy 97)
23 Redmond-Airport	Mon – Fri	7:00 AM – 5:30 PM	4 AM and 3 PM round trips (no midday service, from about 11:30 AM - 2:30 pm)	Redmond Transit Center to Redmond Airport
Seasonal Shuttles				
18 Mt. Bachelor	Daily	6:40 AM – 5:40 PM	During ski season, 6 trips to Mt. Bachelor (one additional Wed. trip) and 5 return trips to Bend.	Mt. Bachelor P&R (SW Columbia & Simpson). 2 round trips serve Hawthorne Station.
Ride the River	Fri – Mon	11:35 AM – 6:45 PM	During summer (3rd weekend in June to Labor Day), every 30 minutes	Drake, McCay, and Riverbend Parks

Notes: (1) Saturday service runs from approximately 7:20 am to 5:15 pm. (2) Saturday service runs from approximately 8:00 am to 4:30 pm. (3) All listed routes except Redmond Airport Shuttle and seasonal shuttles serve Hawthorne Station. (4) Reflects regional service changes effective 10/1/2012.

Activity Centers and Boarding Activity

Figure 3-6 illustrates major activity centers in Bend in relation to fixed-route bus service and a "network buffer" that illustrates a quarter-mile walking distance to/from bus stops. This map shows that transit is within a reasonable walking distance of many major destinations in Bend.

Figure 3-7 illustrates boarding and alighting activity along each bus route. The map illustrates distribution of activity along each route and underutilized portions of routes. Figure 3-5 identifies stops with the highest boarding activity.

Figure 3-5 Weekly Boardings and Alightings for Top 15 Bus Stops

Stop #	Route	Stop Description	Boardings	Alightings	Shelter
MAIN	All	Hawthorne Station	4,046	3,655	Yes
317	3	COCC (Library)	602	552	Yes
614	6	East side of 15th at Riviera	194	157	No
413	4	West side of 3rd S. of NE Mervin Samples	164	48	No
533	5	West side of NE Purcell N. of NE Lotus	159	106	No
203	2	West side of NW Wall at Library	150	216	No
411	4	Cascade Village Mall, N. end of JC Penney	149	172	No
608	6	South side of Hwy 20 at NE 27th	146	134	No
302	3	North side of Greenwood and Bond	128	112	No
229	2	East side of NW Bond S. of NW Kansas	125	41	Planned*
112	1	West side of S. Hwy 97 north of Pinebrook	106	111	Yes
619	6	1645 NE Forbes in WorkSource parking lot	105	65	No
404	4	East side of 3rd N. of Revere (Wagner Mall)	104	81	Yes
539	5	NE 27th at Forum Shopping Center	99	55	No
517	5	NE Neff at St. Charles Medical Center	96	78	Yes

Note: * As of 5/2012. Additional planned shelters include stop #'s 412, 108, 537, 1133, 1130, 1136.

Source: CET Boarding and Alighting Survey, 1/14/2012 to 1/19/2012, and CET Bus Stop Inventory as of 12/3/2012.

Figure 3-6 Major Activity Centers

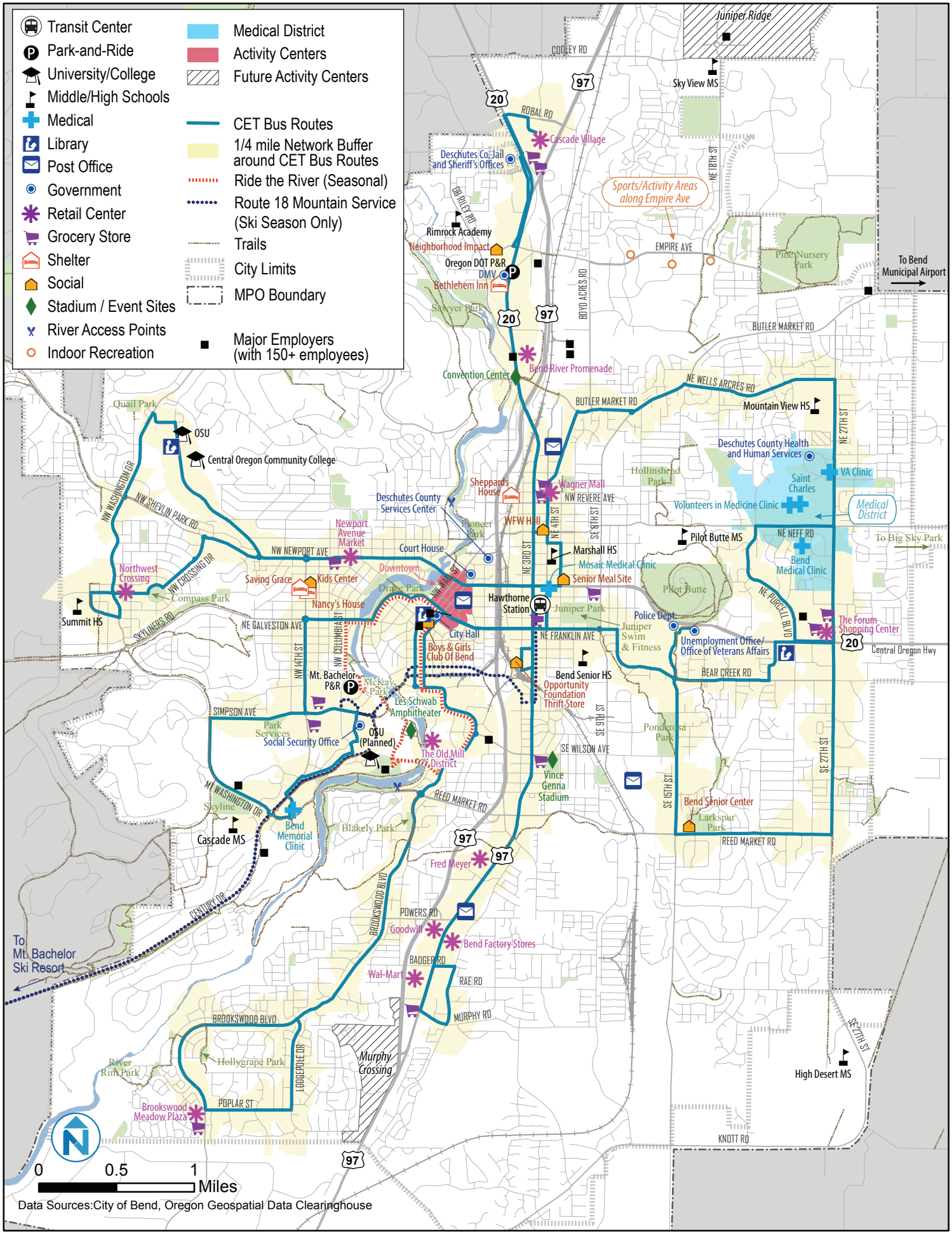
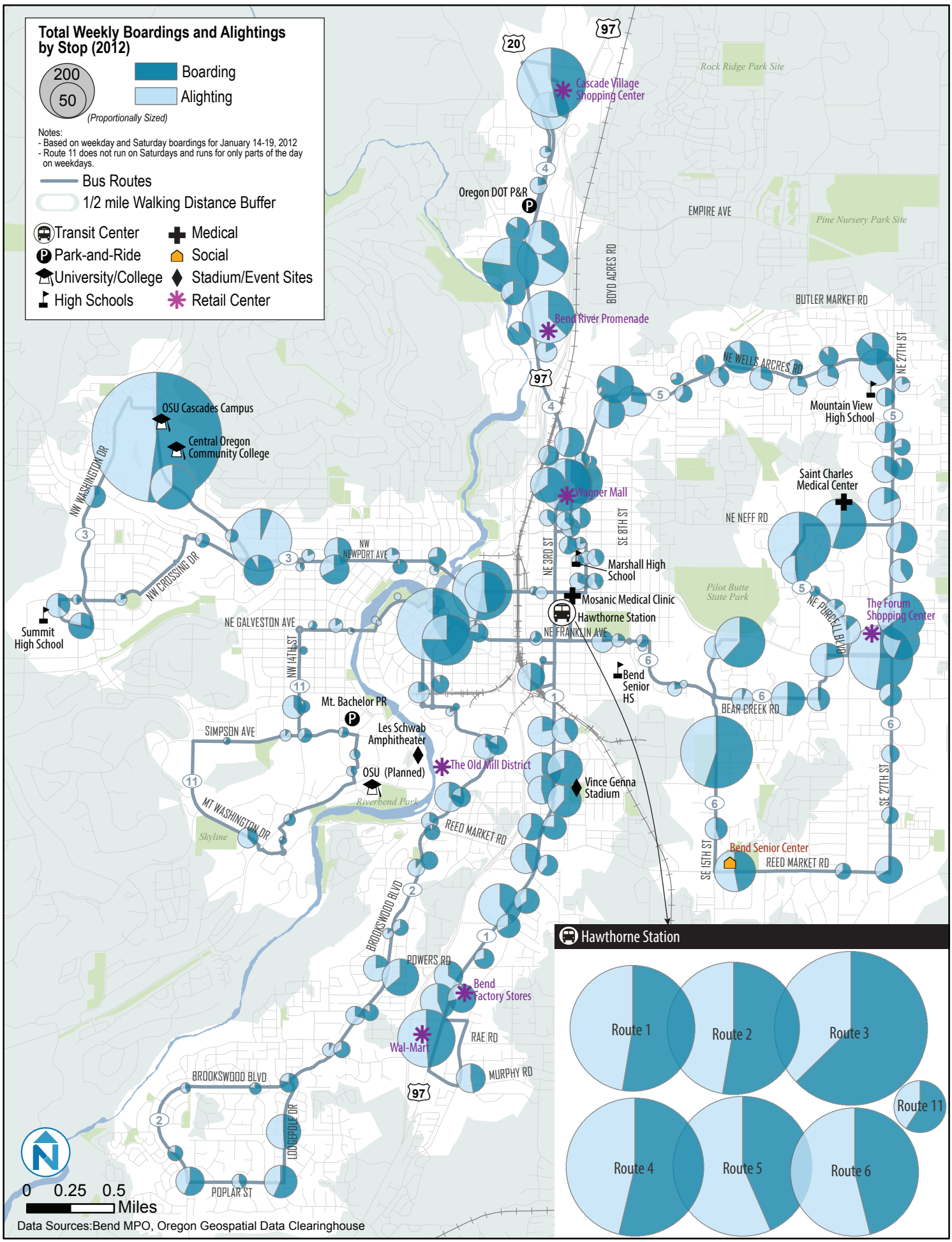


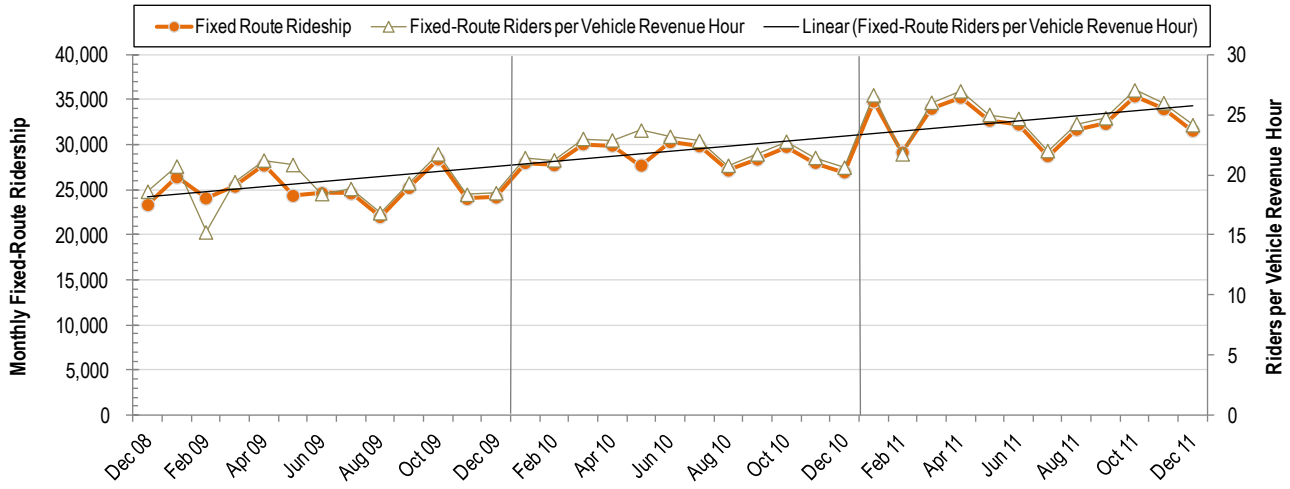
Figure 3-7 Existing Weekly Transit Boardings and Alightings, 2012



System Performance

The fixed-route system in Bend served over 391,000 rides in calendar year 2011. Figure 3-8 illustrates that ridership on the fixed-route system increased over the past three years. Productivity, or the number of riders carried per vehicle revenue hour, has also increased; the additional ridership was served using existing capacity in the system (without additional vehicles or trips).

Figure 3-8 Monthly Fixed-Route Ridership and Productivity by Route, 2009-2011

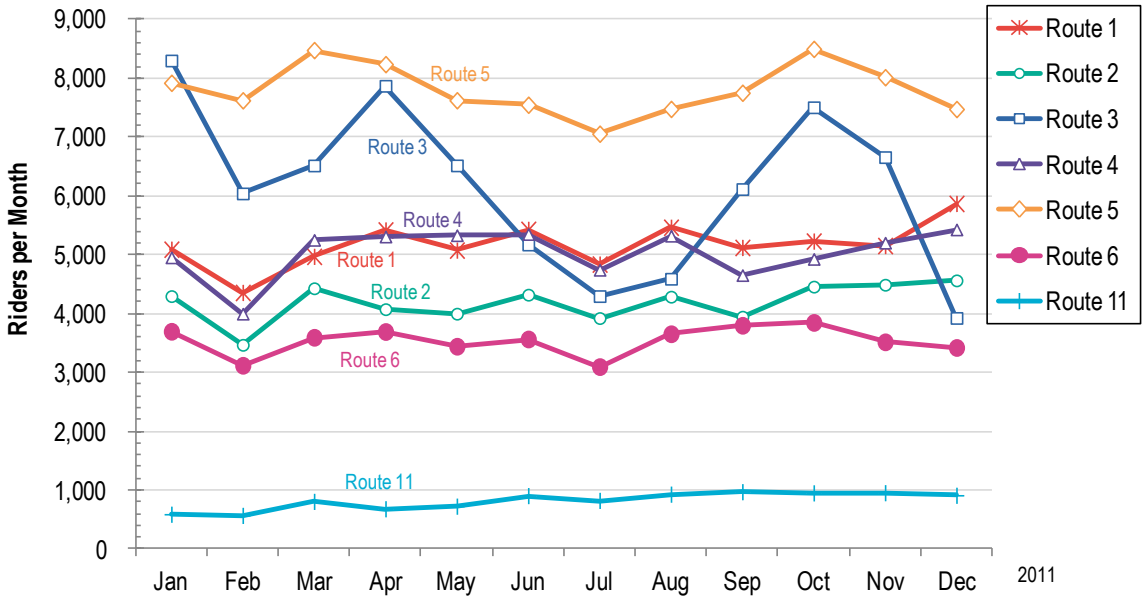


Source: Data from Cascades East Transit

Figure 3-9 shows ridership for each fixed-route in 2011. Route 5 (serving the St. Charles Medical Center area) and Route 3 (serving the COCC/OSU campus) are the highest ridership (and most productive) routes in the system, serving nearly 24% and nearly 19% of total ridership, respectively. Ridership on Route 3 declines significantly outside of COCC school sessions. Route 11 (Galveston corridor) has the lowest ridership and productively of the Bend local fixed-routes, but operates for limited hours, with fewer trips per day than other routes, and does not run on Saturdays.

Based on data from November, 2011, the average number of daily boardings ranges from about 1,500 to 1,700 on weekdays and about 400 on Saturdays, which includes transfers. It is estimated that approximately 600-650 individual riders use the fixed-route system each weekday. Routes 1, 4, and 5, which provide access to retail and services, have the strongest Saturday ridership.

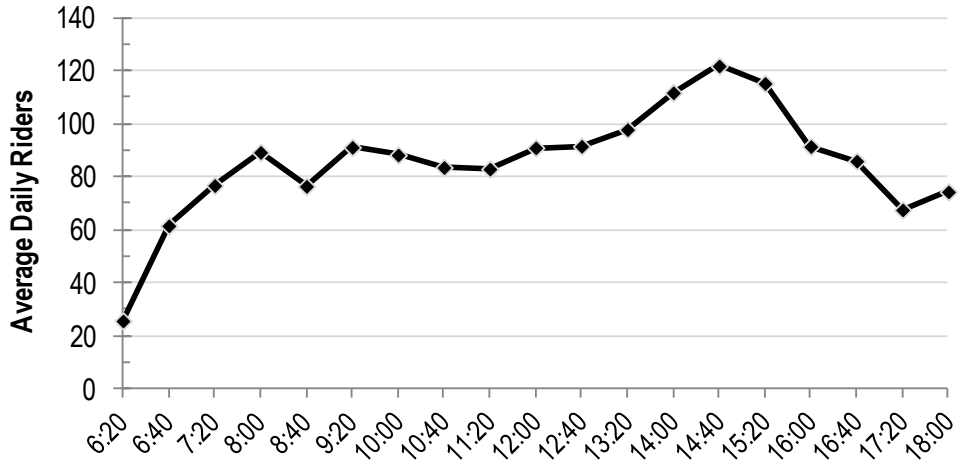
Figure 3-9 Monthly Ridership by Route, 2011



Source: Data from Cascades East Transit

Ridership is consistent throughout the day and is strongest in the midday period on most routes, peaking between about 2:00 – 3:00 PM, illustrated in Figure 3-10. This indicates that a primary use is for non-commute trips, such as shopping or errands. The lack of evening service hours limits the utility of the system for work shifts beyond 6 PM, such as at St. Charles Medical Center, or for many service sector jobs.

Figure 3-10 Average Weekday Ridership by Time of Day, November 1-14, 2011



Source: Data from Cascades East Transit

Dial-A-Ride

Dial-A-Ride (DAR) curb-to-curb service is provided for individuals with disabilities who cannot ride the fixed-route bus system, as well as for low-income seniors. Priority is given to persons with disabilities. DAR operates seven days a week within Bend city limits. The geographic coverage and days/hours of availability, listed in Figure 3-11, exceed the requirements for complementary paratransit service specified by the Americans with Disabilities Act (ADA) of 1991.[8] Up to 10 vehicles are in service at any time.

Figure 3-11 Dial-A-Ride Service Characteristics

Days and Hours of Service	Scheduling Hours	Peak Vehicles in Service
Monday – Friday: 6:30 AM - 6:00 PM Saturday: 7:45 AM - 5:00 PM Sunday: 8:45 AM - 3:15 PM	Monday-Friday 7:30 AM - 4:30 PM	10

Source: Cascades East Transit

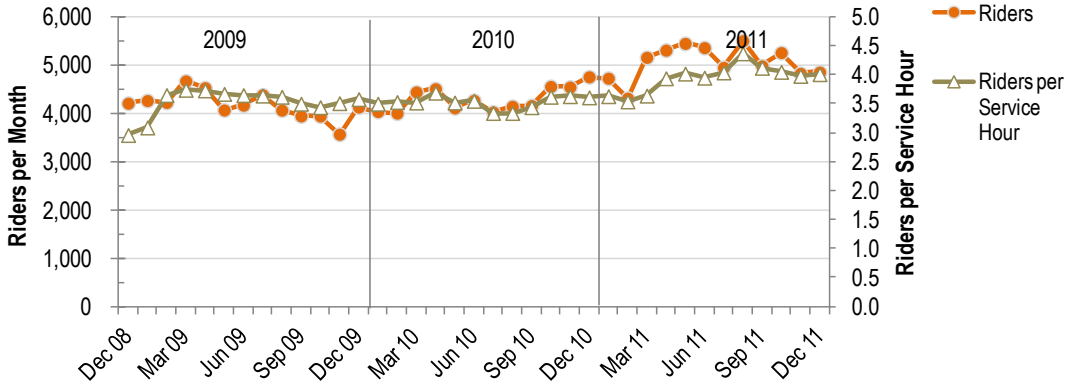
A full-fare one-way trip costs $2.50, one dollar more than a trip on fixed-route bus service. A 50% discount is available for low-income disabled passengers or low-income seniors (60 and older).

Reservations may be made for the next day or up to 14 days in advance, but same day rides or changes are not accepted. DAR allows subscription, or regularly scheduled, trips subject to a 30-day waiting period and on a first-come, first-served basis. Riders must complete an eligibility process to use the service.

Dial-A-Ride Performance

Figure 3-12 illustrates DAR ridership for 2009-2011, in relation to the number of rides provided per vehicle hour (productivity).

Figure 3-12 Monthly Dial-A-Ride Ridership and Productivity, 2009-2011



Source: Data from Cascades East Transit

[8] The ADA requires that door-to-door trips be offered to ADA- eligible customers between origins and destinations located within ¾-mile of fixed-route transit services. One-way fares may be up to double the one-way fixed-route fare for the same trip distance.

Operating Cost, Performance Indicators, and Funding

In fiscal year 2009-2010, the operating cost of fixed-route service was approximately $1.5 million, of which over 10% was recovered from fares. The average cost per hour of fixed-route service was about $72 per vehicle hour. Dial-A-Ride service costs an additional $1.0 Million to operate. As shown in Figure 3-13, it is over four times more expensive to serve a trip on Dial-A-Ride than an individual boarding on fixed-route service.

Figure 3-13 also compares several cost performance metrics for Bend fixed-route and DAR service to metrics for a set of peers. The cost per hour of fixed-route service is lower than the peers, while the DAR cost is higher. This may relate to a larger service geography than is required by the ADA. The cost per passenger is lower than the peer average for both fixed-route and DAR. Fixed-route services recover a lower share of operating cost from fares than peers, while DAR fare cover the same percentage of operating cost as the peer services.

Figure 3-13 Summary of Performance and Operating Costs, FY 2009-2010

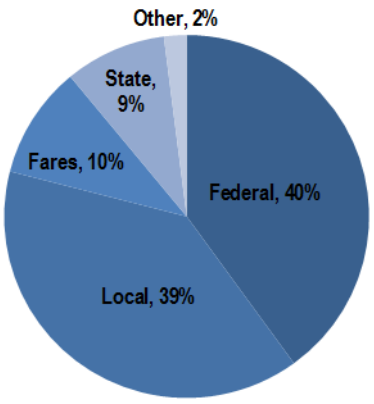
Service Type	Ridership (Unlinked Trips)	Operating Cost	Cost per Vehicle Revenue Hour	Cost per Ride (Unlinked Trip)	Farebox Recovery
Fixed-Route					
Bend	327,904	$1.5 M	$71.24	$4.54	10.9%
Peer Average*	-	-	$99	$5.18	13.2%
Dial-A-Ride					
Bend	49,524	$1.0 M	$72.08	$20.34	8.2%
Peer Average*	-	-	$58	$24.79	8.2%

Notes: * Peer data includes RVTD in Medford (OR), Everett and Yakima (WA), Redding (CA), Pueblo (CO), and Santa Fe (NM) for 2010.

Source: National Transit Database

To support fixed-route and Dial-A-Ride service, the City of Bend provides transit operating funding of over $1 million from its general fund, the largest non-federal revenue source, to meet the requirement for local matching funds for Federal section 5307 and 5310 funds. Federal funds provide about 40% of operating costs.

Figure 3-14 Operating Funding Sources, FY 2009-2010



Source: National Transit Database, 2010

The Existing Conditions memo provides additional detail on the onboard rider and online community surveys, as well as other community input.

4 COMMUNITY INPUT

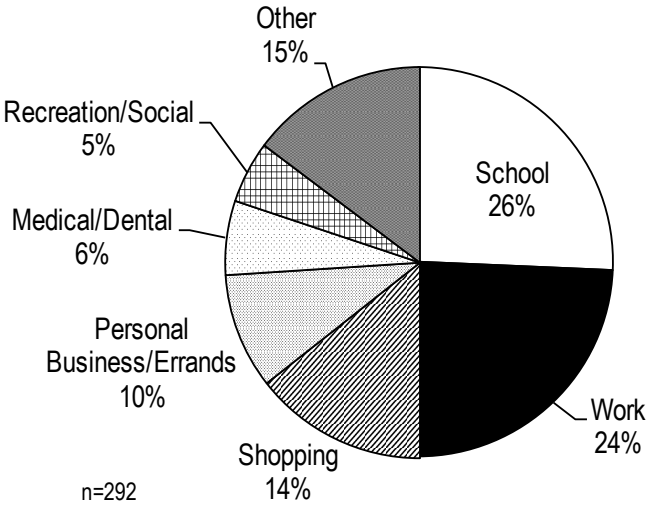
This chapter describes the results of focused outreach efforts conducted as part of the project, including an onboard bus rider survey, an online community survey, several mobile outreach events, and a public open house.

ONBOARD SURVEY (MARCH, 2012)

An on-board vehicle survey was conducted on fixed-route transit vehicles in Bend between March 12-17, 2012 to obtain information about the travel patterns, demographic characteristics, and perceptions of existing transit riders.[9] Survey forms were available in both English and Spanish, and 323 total surveys were completed.

Passenger Trip Purpose

School trips comprise over a quarter of the trips, while work trips make up about 24%, a relatively small share of trips. About half of trips serve other purposes, including shopping, personal business, and recreation/social visits, or combinations of trip purposes. The results are consistent with the system's strong midday ridership and relatively low late afternoon/evening ridership. A high proportion of non-work trips is not surprising given that service stops running at around 6 PM.

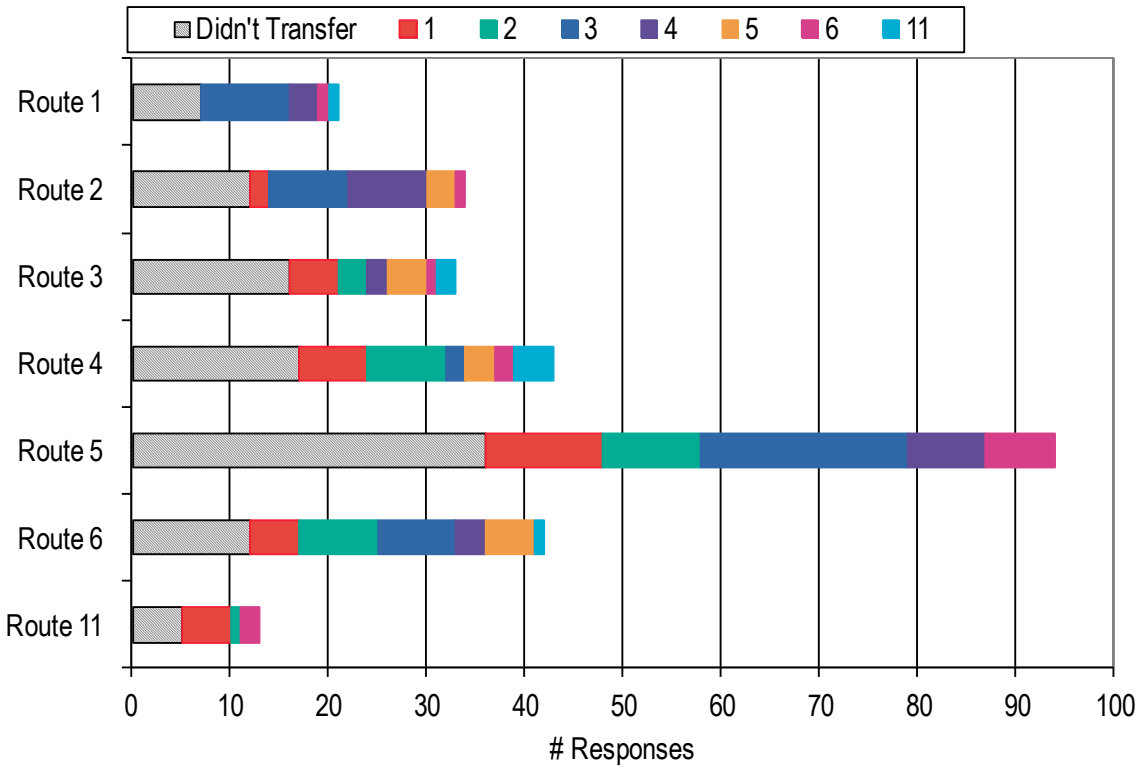


[9] While focused on Bend, the survey was conducted as part of the COIC Regional Transit Master Plan.

Transfer Activity

Over 60% of surveyed passengers making local trips in Bend required a transfer to complete their trip. As illustrated in Figure 4-2, the most significant transfer activity is on Route 5 (Wells Acres) to/from Route 3 (COCC). Routes 1, 2, and 6 also have moderately high transfers to Route 5. A high transfer rate is typical of a hub-and-spoke system such as in Bend (see Chapter 7). This system design allows local passengers to reach any point served by the local route system using no more than two buses, and also regional passengers to reach any point on the system with a transfer at Hawthorne Station, but can result in a longer travel time for some trips.

Figure 4-2 Onboard Survey: Transfer Patterns by Route



Major Travel Patterns

Figure 4-3 shows the locations of passenger origins and destinations for respondents that provided this information (and where it was possible to map the location provided). The map illustrates major common travel patterns, including to or from COCC and downtown. Many of these patterns require a local-to-local or regional-local transfer at Hawthorne Station.

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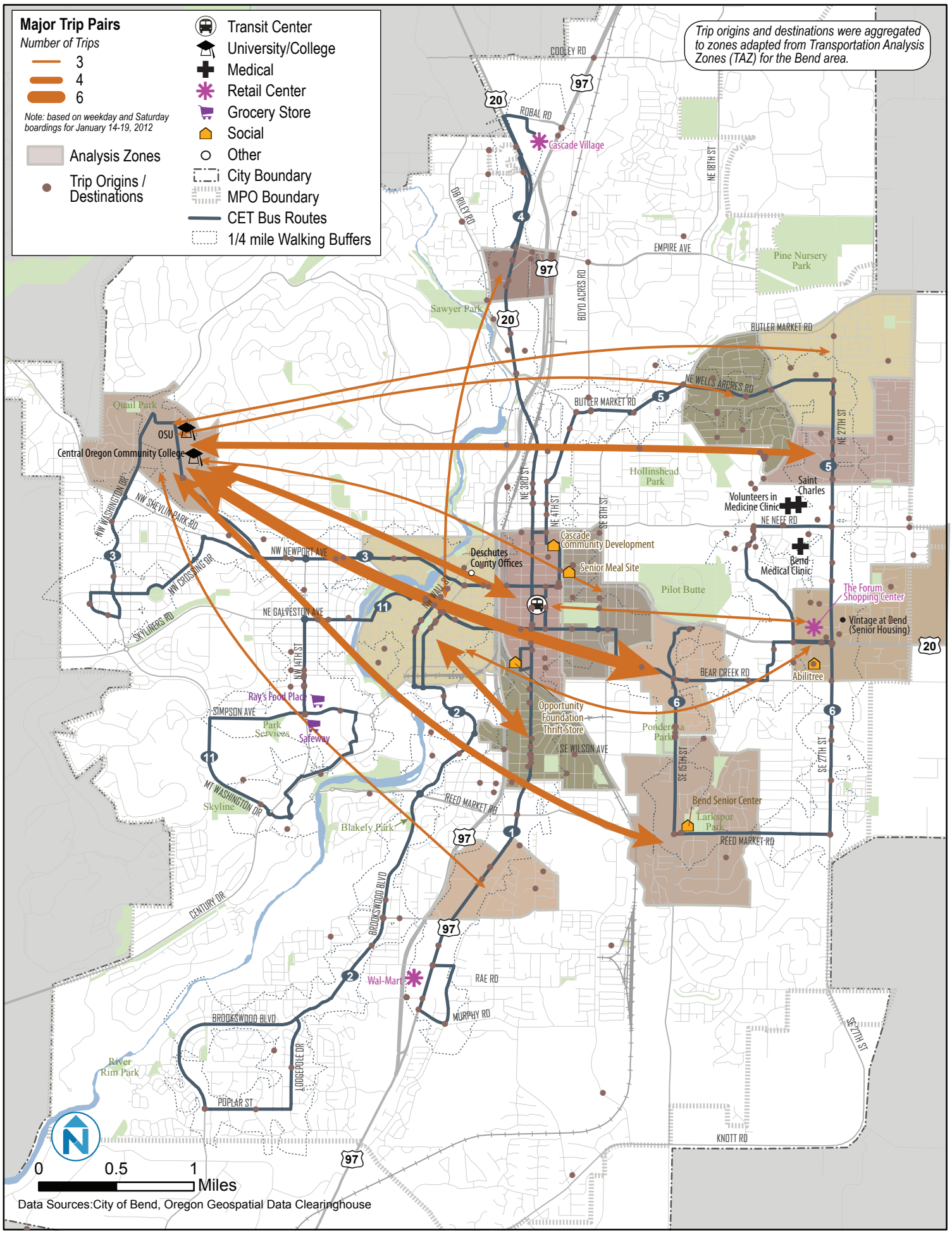
Figure 4-3 Onboard Survey: Major Fixed-Route Origin-Destination Patterns

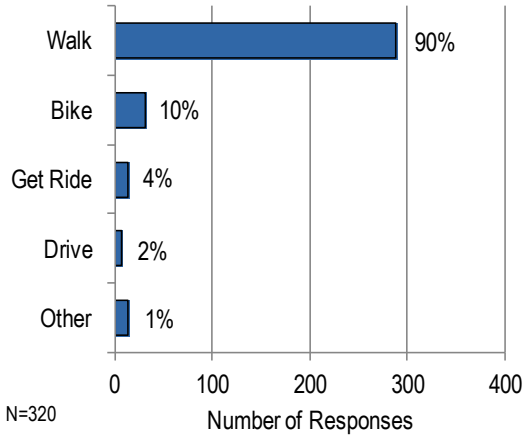


System Access

Most passengers (about 90%) walk to the bus stop, as shown in Figure 4-4, and of these passengers, 87% walk 10 minutes or less to/from the bus. A relatively small number of passengers walk between 16 and 50 minutes to/from the bus.

Bicycling is the second highest means of access to the bus (10%) and most bicyclists travel between one and three miles to get to the bus (55%), while 35% travel less than a mile.

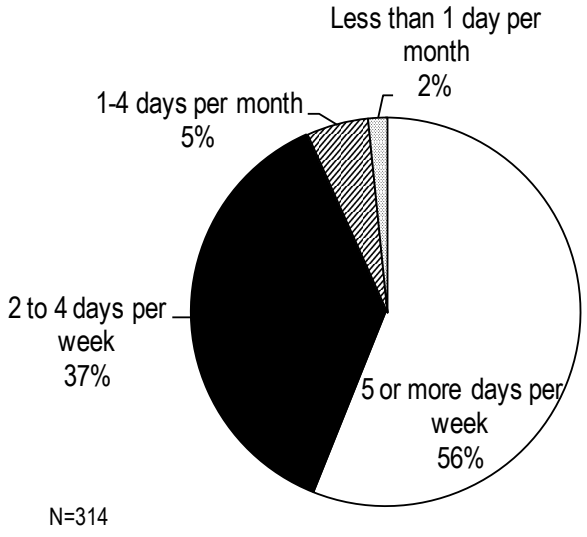
Figure 4-4 Onboard Survey: How do you typically get to and from the bus stop?



Usage Patterns

The majority of passengers (56%) are daily riders, using the bus 5 or more days per week, while 37% ride frequently (2 to 4 days per week). Combined, 93% of riders captured by the survey use the system multiple days per week.

Seventy percent (70%) of riders have been using the system for over a year, including over a quarter of riders who have been riding for over four years. However, the system is also attracting new passengers (28% less than a year), which includes regional passengers.

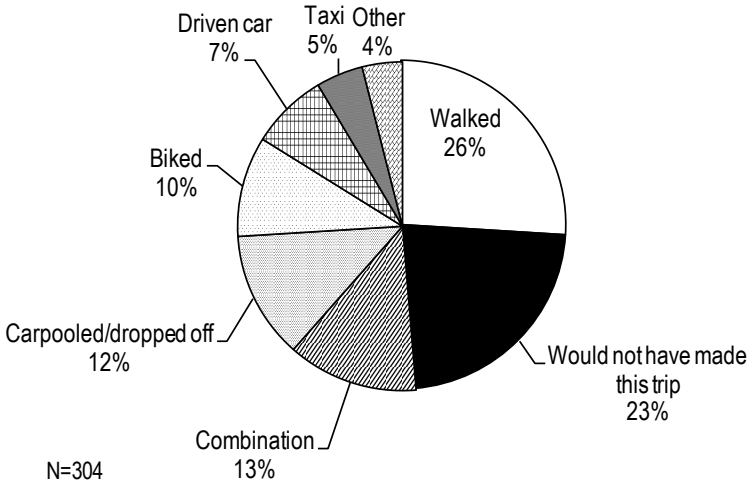


Reliance on Transit

If CET bus service was not available, over a quarter of respondents would have walked to their destination, which reflects relatively short trip distances in Bend. Nearly a quarter reported that they would not have made the trip. Others would have gotten a ride, biked, or driven a car.

These results suggest that the fixed-route system serves a high proportion of "transit-dependent" riders and a relatively small number of "choice" riders, although the majority of passengers have a variety of transportation choices.

Figure 4-6 Onboard Survey: How would you have made



Note: It is likely that these results will vary significantly at different times of the year.

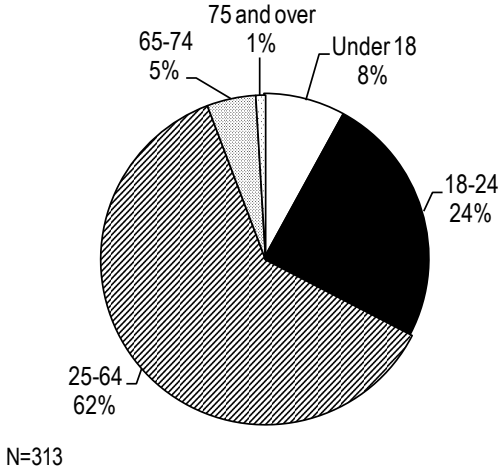
Demographic Characteristics

The majority of passengers (62%) are between age 25 and 64, as shown in Figure 4-7. About a quarter are between 18 and 24 years old. Less than 10% of passengers are under age 18, while only 6% are 65 or older.

Nearly a third of passengers are students, nearly a quarter are unemployed and seeking work, while 22% are employed part-time and 21% are employed full-time.

Passengers are predominantly lower-income; 63% have a household income of less than $15,000 annually and a total of 81% have a household income below $25,000. About 17% of riders have a household income between $25,000 and $74,999, while only 2% live in households earning $75,000 or more.

Figure 4-7 Onboard Survey: Age



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Passenger Satisfaction and Improvement Priorities

Transit riders are mostly satisfied with fixed-route bus service overall. Nearly 40% rate overall service as "Excellent" and a total of 86% rate service as either "Excellent" or "Good." As shown in Figure 4-8, riders are most satisfied with the courtesy of drivers (over 65% "Excellent"). On-time arrivals received the fewest positive ratings; nearly a quarter of passengers rated on-time arrivals as "Fair" or "Poor." This is an especially important finding as timed transfers between routes are a very important part of the system. Several written comments specifically mentioned Route 5. Several other attributes were perceived slightly more favorably, but still rated over 20% "Fair" or "Poor," including condition of stops, passenger information (maps and schedules), ease of transfers, ease of understanding the system, availability of seats on the bus.

Figure 4-8 Onboard Survey: Perception of CET Bus Service

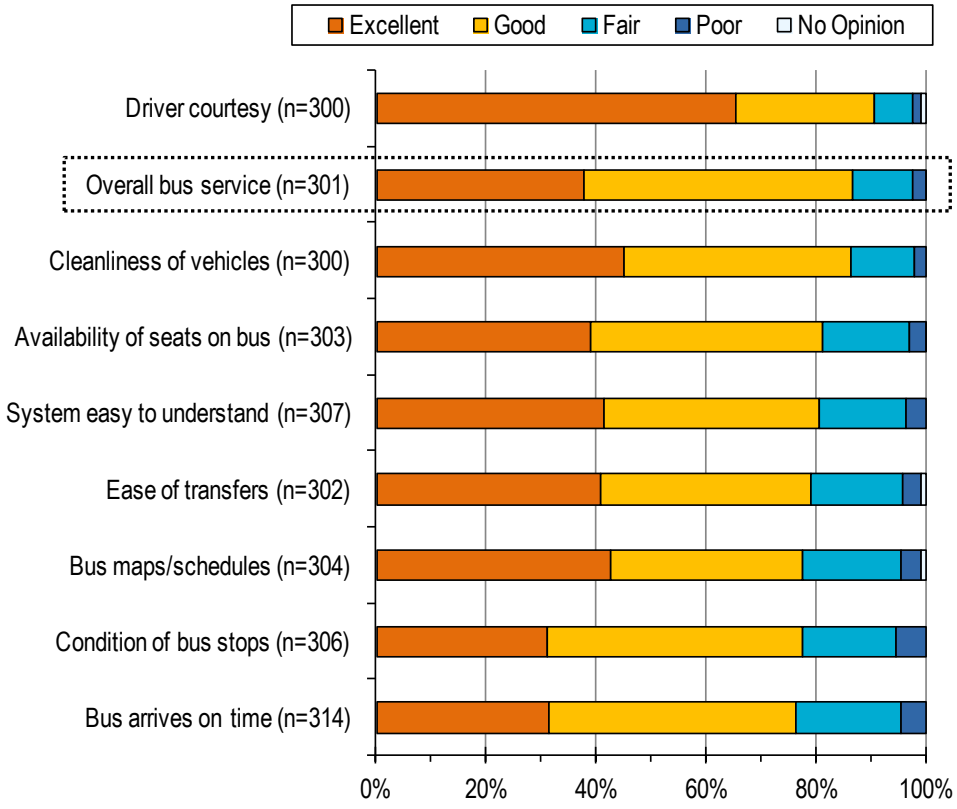

Figure 4-9 illustrates the priority system improvements that bus riders identified as influencing their choice to ride the bus more often. Later evening weekday service and Sunday service are among the top three priorities for over 60% of riders, and are also the most important improvement for 40% and 27% of riders, respectively. No other improvements are identified as one of the top three priorities by 10% or more of riders. More frequent service, both on Saturdays and

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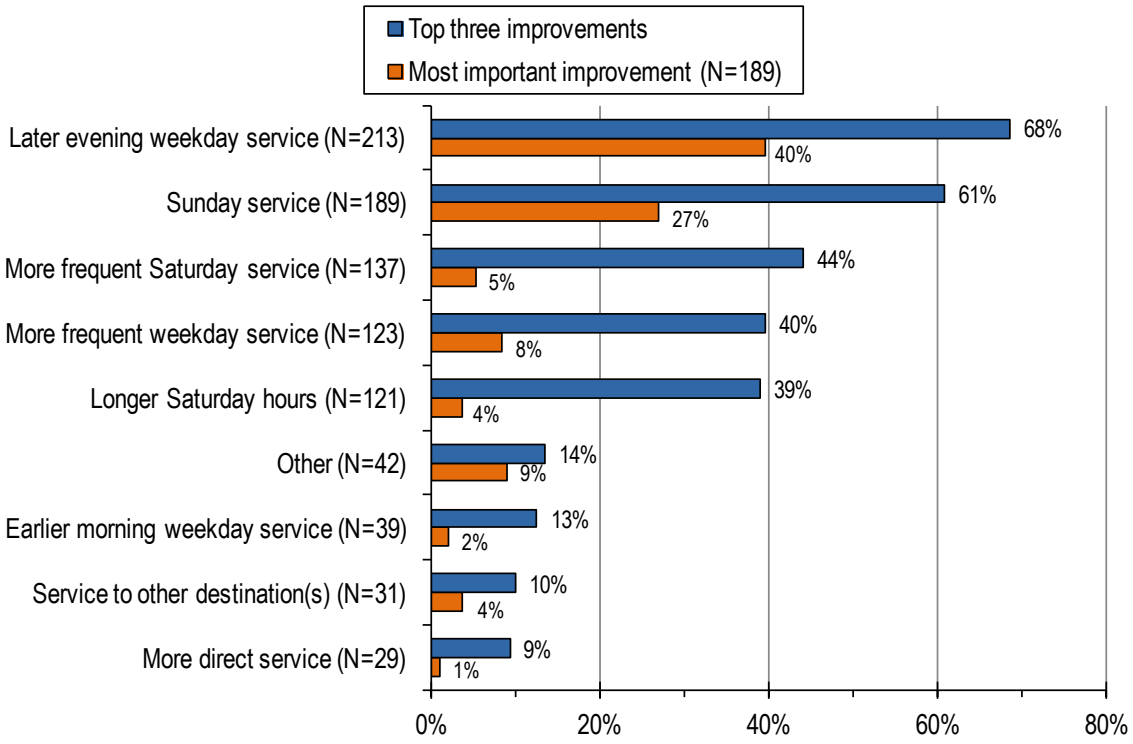
on weekdays, and longer Saturday hours are all identified as priority improvements by a substantial share of riders (nearly 40% or more).

Figure 4-9 Onboard Survey: Priority Improvements



Service that runs until 10:00 PM would meet the needs of most riders (86% of riders who identified later service as a priority), and starting service at 5:00 AM would meet the needs of most riders (85% of riders who identified earlier service as a priority).

Passenger Comments—Key Themes

A selection of open-ended comments provided by passengers is provided in Figure 4-10. Many of the comments relate to priority improvements, including Sunday service, later evening service, and additional shelters. Comments on specific routes include improving frequency, hours, and Saturday service on Route 11 and addressing schedule or routing issues on Route 5.

Figure 4-10 Onboard Survey: Selected Open-Ended Comments by Category

Category	Number of Comments	Example(s)
Driver Commendation	19	▪ You guys rock. I love the transit system and 90% of its employees. I feel the buses give me the chance to accomplish things and go places without being strained. Thank you so much for your service to this community.
Sunday	11	▪ I would ride it to church with my son, while now if we don't have a ride we don't go.
Later	8	▪ … later bus service would likely be more popular in the evenings with the amount of immobile teenagers who want to go downtown or shopping or to the movies. ▪ …I go to college at COCC, there are certain classes that I… need to take that are late classes. ▪ Most people riding bus work "service related" jobs (Walmart, restaurant, fast food). We are not 9-5 workers.
Stop Amenities	8	▪ Benches and covered stops would be nice during winter months.
General Praise	7	▪ My whole household uses CET, and has for years. We're 6, 18-27 year old college kids and we rely on this. We'd use it a lot on weekends! Please expand!
Saturday - Route 11	6	▪ Please run #11 more often and on Saturday. #11 is the best way to the westside BMC and Athletic Club and shopping. ▪ Route #11 needs to start earlier— if you need to be at work by 8:00 a.m. you're out of luck. Too many service breaks on #11 and walking from library to Century Drive is ok in summer but sure gets old in winter.
Route 11 Frequency or Hours	6	
Frequency	5	▪ More frequent weekday bus service in rush hour ▪ If you were able to return to the original 30 minute headway, there would be 2 positive results: a. more efficient use of time. b. It would be far easier to remember bus times.
Specific Coverage, Routing, or Stop Issues	5	▪ Please consider a route off of Empire Avenue or 18th St. ▪ …I feel like the CET bus should go into Deschutes River Woods. So a lot of people don't have to walk an extra 3 miles in the bad weather to get close to home.
Route 5 Schedule or Other Issues	4	▪ Not a fan of the #5 schedule. It's not at regular intervals so makes it more difficult to time buses. ▪ BMC is one of the last stops and should be one of the first stops.

COMMUNITY SURVEY (FEBRUARY-APRIL, 2012)

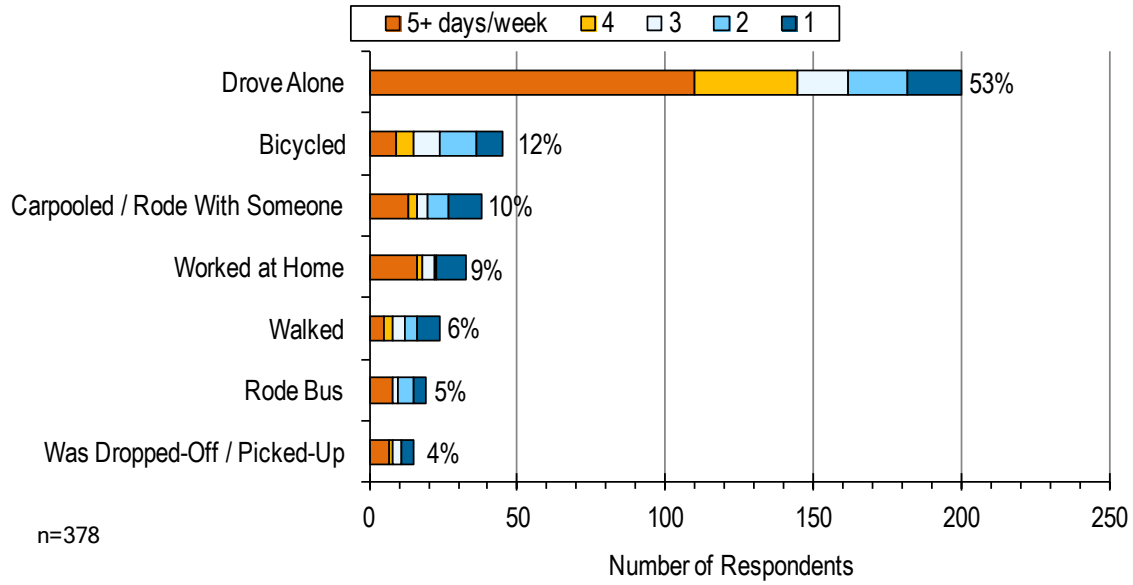
To receive input from the broader community, including more infrequent transit riders and non-riders, an online (web-based) survey was developed and made available between February and April 2012. Over 420 survey responses were received.

Respondent Characteristics

Characteristics of survey respondents include:

- Over 88% reside in Bend, including about 10% who live outside city limits.
- Nearly 66% work in Bend, over 13% are retired, and nearly 16% attend school or college.
- As shown in Figure 4-11, the majority of respondents drive alone to work (53%), but only a little more than half of those individuals drive five days per week. Overall, only 44% of respondents use the same mode five or more days per week. The second largest share of respondents bicycle to work at least once a week (12%), although only a fifth of those do so every day. About 5% of respondents use transit to get to work. In addition, about 14% of respondents use a CET bus to get to school while about 11% ride the COCC Shuttle or a school bus.

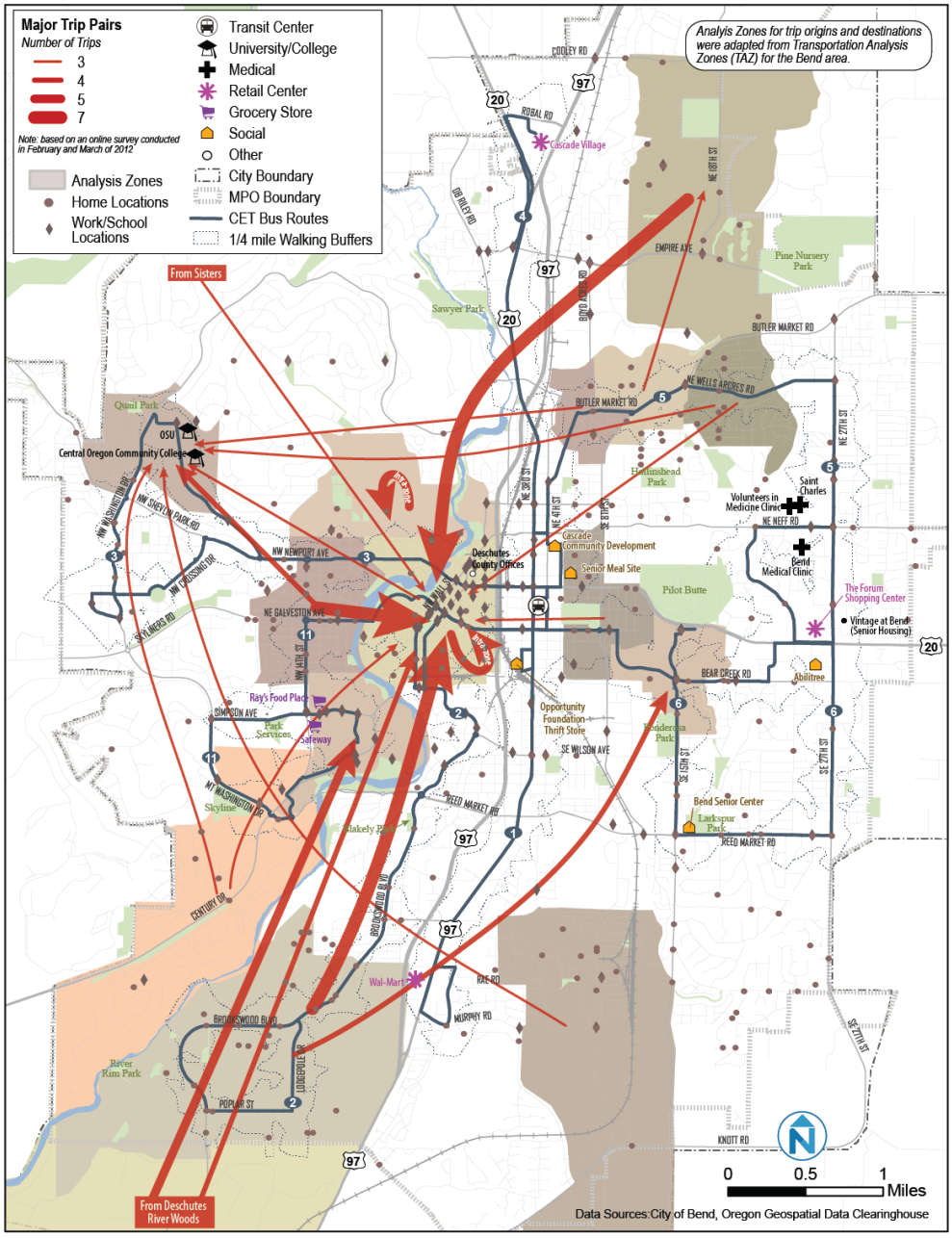
Figure 4-11 Online Survey: Commute Mode to Work by Number of Days Used



Travel Patterns

Figure 4-12 shows the locations of respondents' work and school commute origins and destinations in relation to existing transit routes. The trip patterns were categorized by zones and the map also illustrates the most significant common origin-destination patterns. Examples of major trip patterns not served by transit include between outer NE Bend and downtown, between Deschutes River Woods and downtown, and outer SE Bend to COCC.

Figure 4-12 Online Survey: Work/School Commute Origin-Destination Patterns



Satisfaction with Work/School Commute and Perceptions of Existing Transit Service

Satisfaction with Work/School Commute

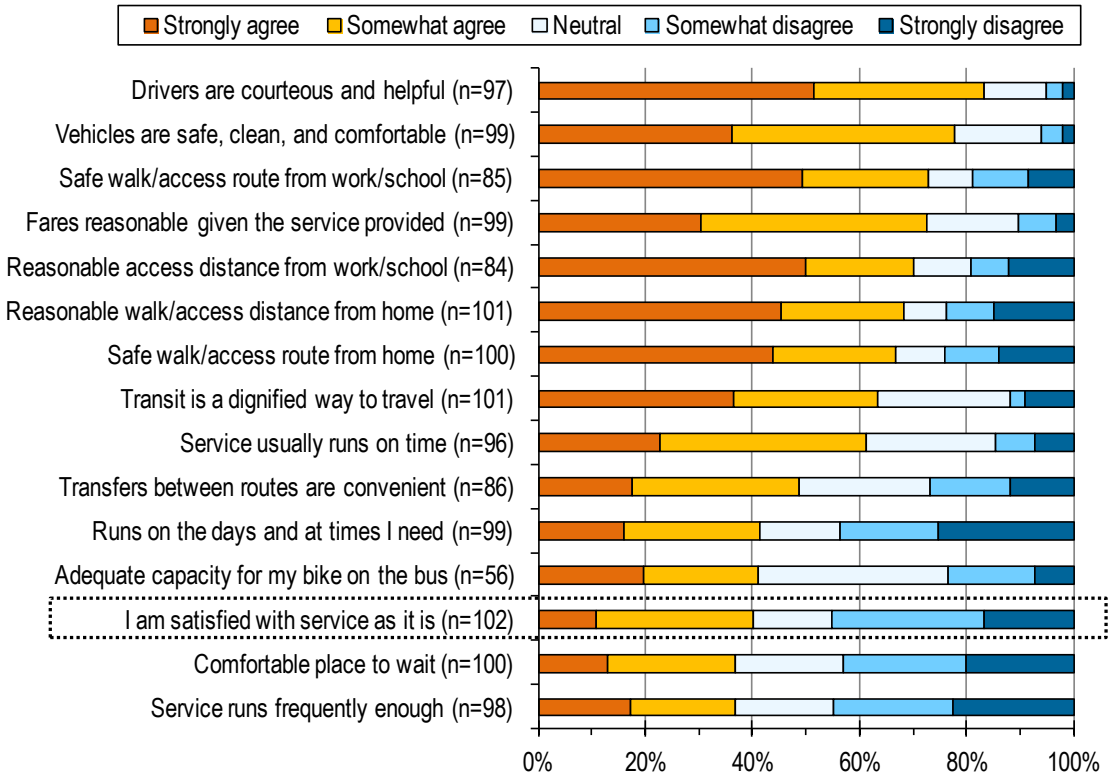
Over 66% of respondents were satisfied or very satisfied with their work commute, while 11% were unsatisfied or very unsatisfied. Nearly 62% of students were satisfied or very satisfied with their school/college commute, while 15% were unsatisfied or very unsatisfied.

Satisfaction with Fixed-Route Bus Service (Transit Riders)

Nearly 32% of respondents used some form of public transit in Bend within the last year, covering all CET local and regional routes serving Bend and seasonal/recreational shuttles.

Only 40% of transit users responding to the survey were satisfied with the service as it is, as shown in Figure 4-13. The key issues identified are convenience—in terms of service that runs frequently enough and on the days and times when people need it—and lack of a comfortable place to wait for the bus. The most positively cited aspects of the service are driver courtesy and safety/cleanliness of vehicles.

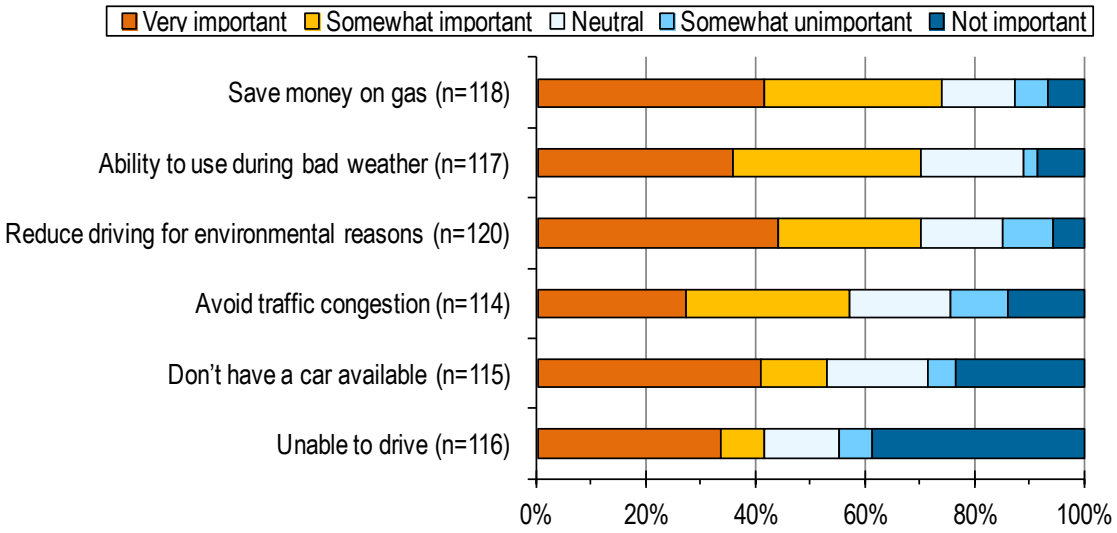
Figure 4-13 Online Survey: Satisfaction with Fixed-Route Bus Service



Decision Factors in Using Transit (Transit Riders)

Respondents cited both "choice" and "transit dependent" factors in their decision to use transit. The largest share of respondents indicated that saving money on gas, riding during bad weather, and environmental reasons are very or somewhat important to their decision to use transit. A substantial share of riders also cited lack of an available vehicle and being unable to drive as very or somewhat important factors.

Figure 4-14 Online Survey: Factors in Deciding to Use Transit

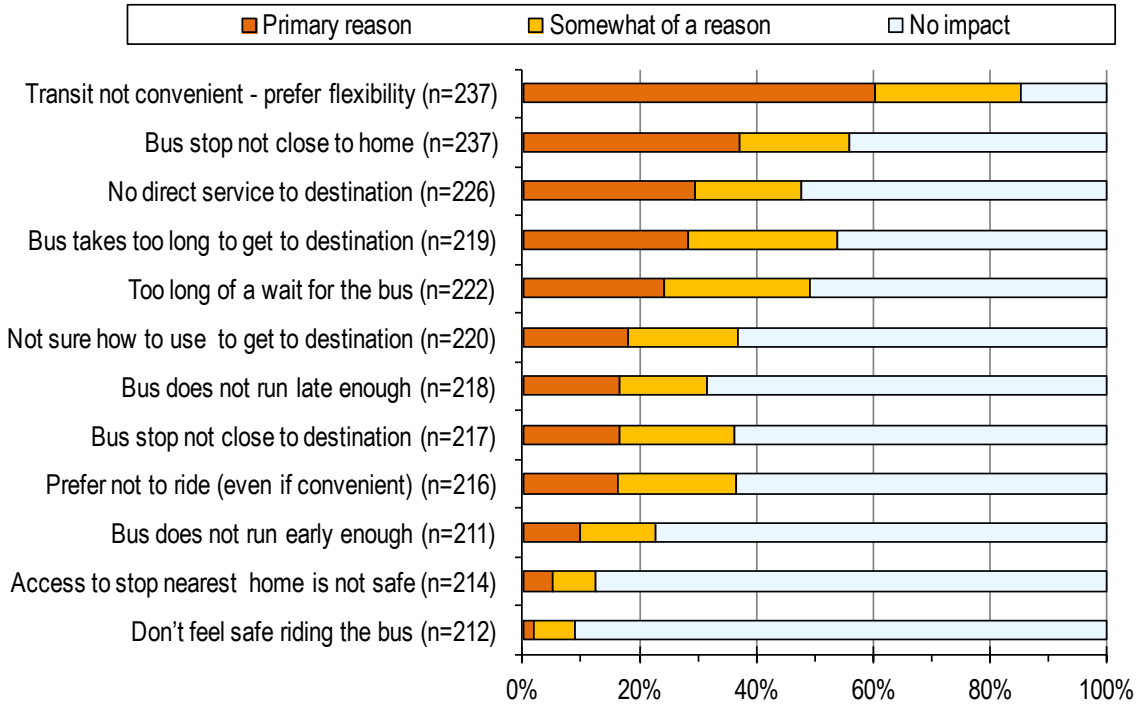


Reasons for Not Riding the Bus (Non-Transit Users)

Respondents who have not used transit in the past year were asked to identify primary and secondary reasons that they do not ride the bus in Bend. The results, illustrated in Figure 4-15, identify the convenience of transit as the key barrier to transit use in Bend. About 85% of respondents (including primary and secondary reasons) indicated that transit is not a convenient option and that they prefer the flexibility of using their own vehicle. Respondents identified a number of other convenience-related factors as primary reasons for not riding, including lack of a stop near their home, service that is too indirect or takes too long, or too long of a wait for the bus.

However, fewer than 20% indicated they wouldn't ride the bus even if it were convenient, indicating that most respondents are receptive to using transit if it were convenient. In addition, the responses indicate that perceived safety (both on and off-board) is not a major barrier to using transit. Fewer than 10% of respondents don't feel safe riding the bus and about 12% feel that access to the stop nearest them is not safe (including primary and secondary reasons).

Figure 4-15 Online Survey: Reasons for Not Riding the Bus



Priorities for Improving Service

All respondents were asked what improvements would encourage them to use transit, or use it more often. As shown in Figure 4-16, the highest share of respondents indicated that service later in the evening would encourage them to ride the bus or ride more often, followed by more direct service, more frequent service, and service to areas without existing coverage. Including improvements that respondents indicated *may* encourage them to ride, new coverage and more direct service received the highest share of responses.

Figure 4-17 identifies the top three priorities identified by survey respondents, among the same set of potential improvements. The highest share of respondents identifies routes to areas without existing service as a high priority, followed by later evening service and more frequent service. Several improvements identified as high priorities on the onboard (rider) survey, including Sunday service and more Saturday service hours, were lower priorities among the general public.

Figure 4-16 Online Survey: Impact of Potential Transit Improvements

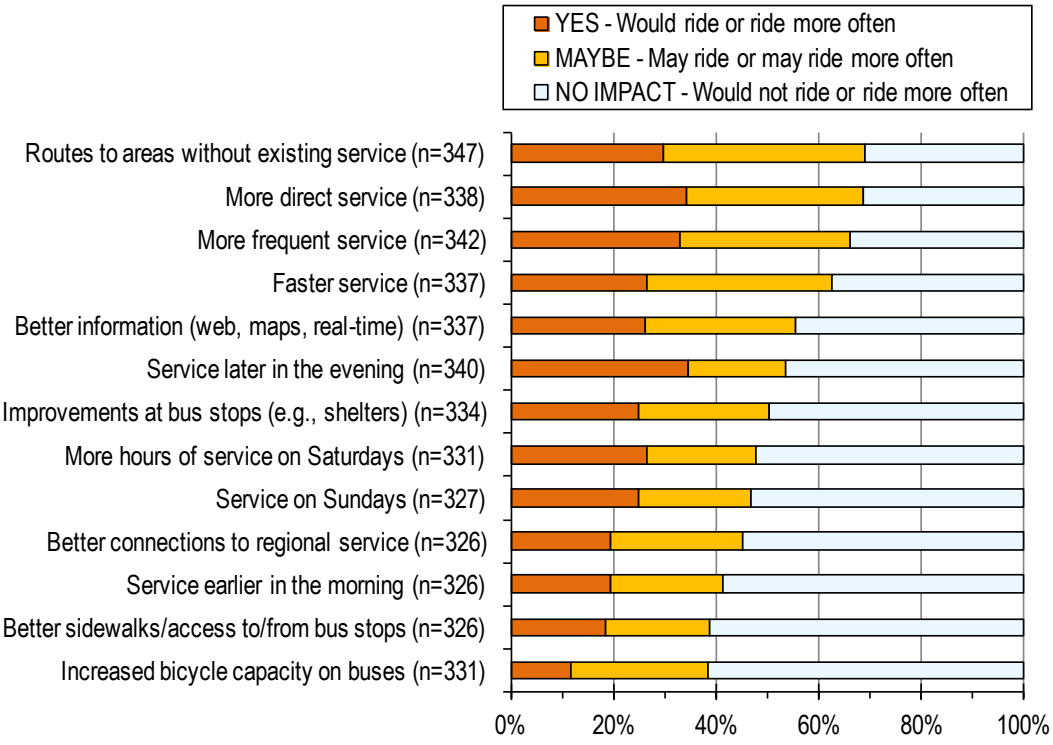
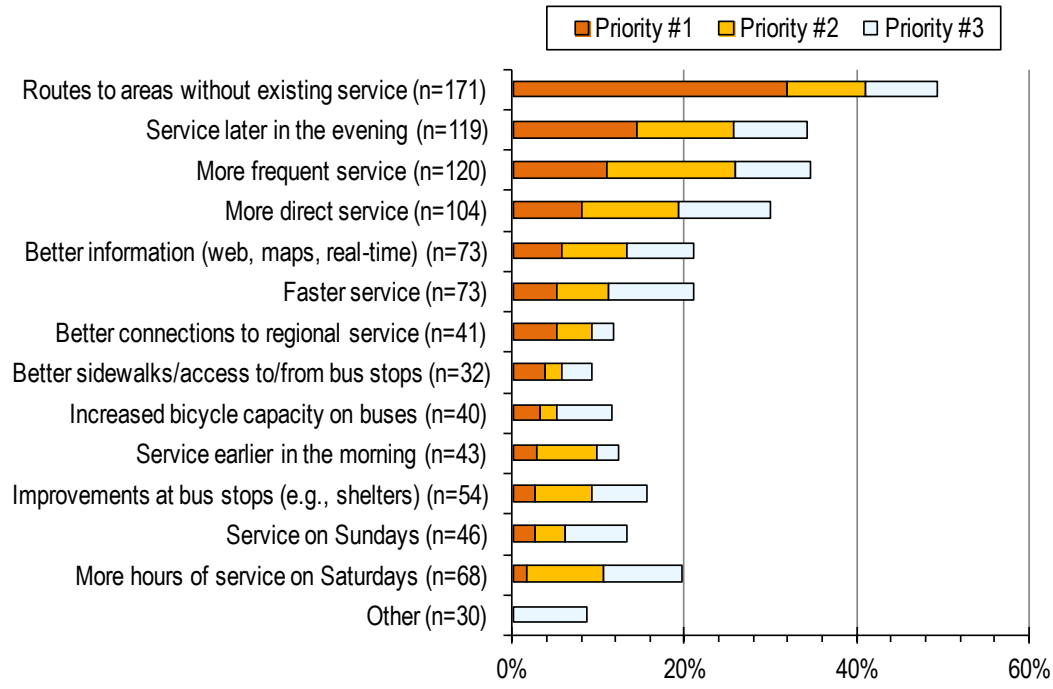


Figure 4-17 Online Survey: Top 3 Service Improvement Priorities

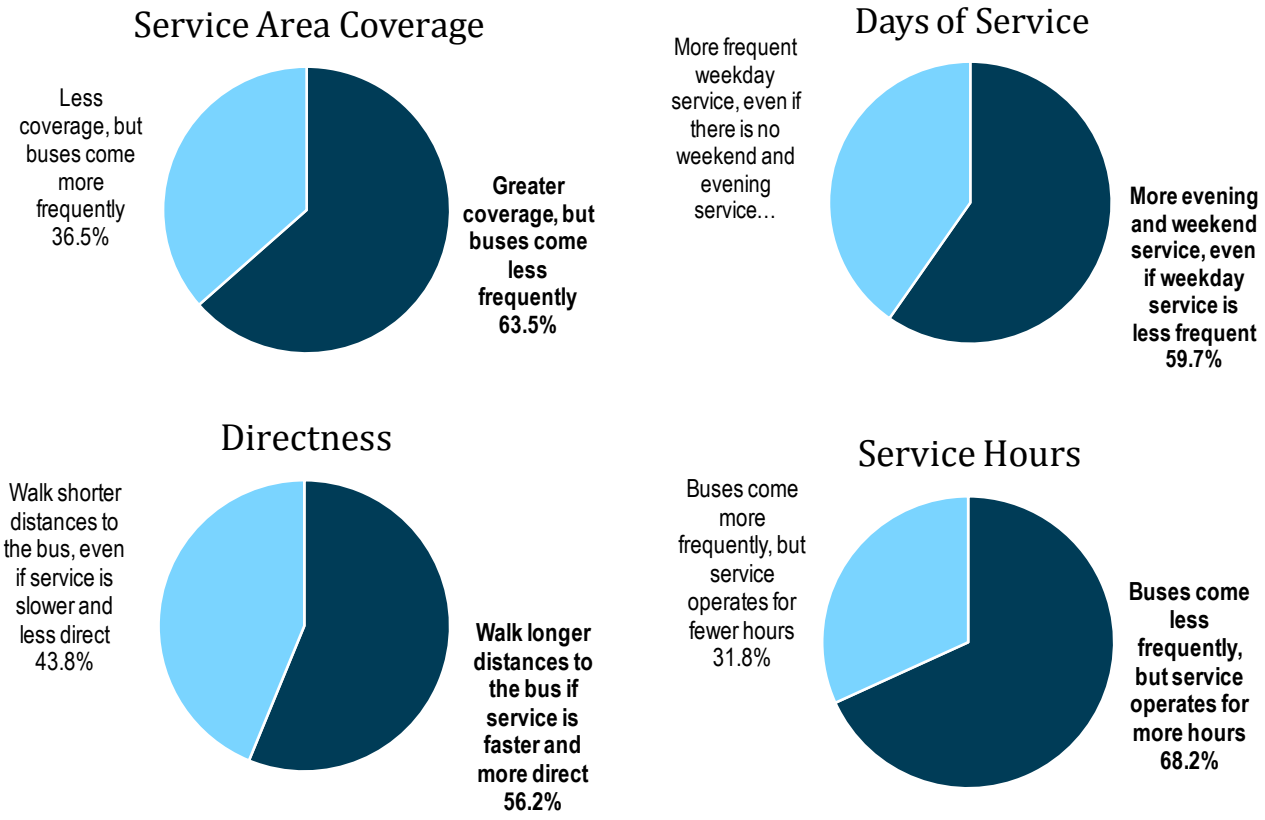


Tradeoffs in Providing Transit Service

A series of "tradeoff" questions asked respondents to select between two options in how scarce transit resources should be allocated. Although the choices are difficult ones to make, the results help identify how the community values transit and help guide how the community would like transit service to be designed. As shown in Figure 4-18, respondents are willing to:

- Accept less frequent service in order to enable increased geographic service coverage (over 63%)
- Have stops further apart and to walk longer distances if service is faster and more direct (over 56%)
- Have more evening and weekend service even if weekday service is less frequent (nearly 60%)
- Have buses come less frequently if service operates for more hours (over 68%)

Figure 4-18 Tradeoffs in Transit Service Provision



Mobile Outreach (April 2012)

Several "Mobile Outreach" events were conducted in April 2012 to provide additional opportunities for the project team to discuss the project with community members and obtain additional input. These events included:

- Hawthorne Station (Transit Riders) - April 5, 2012
- Bend Community Center (Senior Lunch) – April 6, 2012
- Earth Day Fair –April 21, 2012
- Downtown Bend Library – April 25, 2012
- Outreach at churches, focused on the Latino community – Various

A summary of public feedback received is included in the Existing Conditions memo.

Public Transit Plan and Service Concepts Outreach (October 2012)

A public open house and a mobile outreach event at Hawthorne Station were held on October 3 and October 4, 2012 to solicit input on proposed service improvements from the community and bus riders. In addition, an online survey was posted on the transit plan website, to allow members of the public who were not able to attend one of the events to learn about proposed service improvements and concepts in this plan and provide input.

A summary of public feedback received is included in Appendix B.

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5 KEY FINDINGS AND TRANSIT NEEDS ASSESSMENT

This chapter summarizes some key findings from the analysis of existing conditions (Chapters 2 and 3) and community input (Chapter 4), and provides an assessment of the major public transportation needs for the Bend area.

KEY FINDINGS

Based on the analysis of demographics, land use, and existing transit service, key findings include:

- Transit's relevance in Bend and the Central Oregon has increased dramatically in the past several years. Both the local fixed-route and regional Community Connector system are relatively new, including the fairly recent transition from the "BAT" to "CET" in Bend, and as such CET facilities and fleet are still evolving.
- Despite the impact of the economic downturn, Bend's population grew by nearly 24,000 people between 2000 and 2010, an increase of about 45%. However, this level of growth is about 5% lower than earlier projections. Although there are a number of growing economic sectors, the housing downturn significantly affected employment (particularly construction-related jobs) and employment is not expected to recover to peak 2007 levels until 2020.[10]
- Bend is a growing regional center for higher education, with significant recent growth in COCC and OSU enrollment. COCC is one of the most significant transit destinations in Bend for both local and regional service, and the planned OSU facility, with projected enrollment of 5,000 students within several years, is a key opportunity for transit.
- Regional commuters are also a key future opportunity for an integrated local-regional transit system. About 10,000 residents travel outside of Bend for work, while nearly 20,000 workers come into Bend for work. By

[10] Carolyn Eagan (OED Economist for Region 10), Personal Communication, January 2012.

comparison, about 16,000 people (over 60% of Bend's working residents) both live and work in the city,

- Although most residents (nearly 79%) drive alone to work as their primary commute mode, a majority of community survey respondents appears to be open to using transit if it was "convenient."
- About 31% of residents live within a quarter-mile walking (network) distance of a bus stop and about 60% live within a half-mile network distance of a stop.
- The timed-transfer, hub-and-spoke system allows any destination in Bend that is served by transit to be reached with no more than one transfer. The majority of riders (over 60% of those making local trips in Bend) require a transfer to complete their trip. Since commute times and many trip distances in Bend are relatively short, the need to transfer on the current bus system imposes a significant penalty. While more than 75% of working residents have relatively short commutes of 20 minutes or less, more than half of workers who primarily ride transit have commutes of 30 minutes or more. In particular, the location of Hawthorne Station means that a transfer is necessary to access downtown from routes serving the eastern part of the city.
- The system currently serves primarily non-work trips. About a quarter of riders use transit to get to school, while about half of riders use it for purposes other than getting to work or school. Fewer than 1% of resident workers use public transportation as their *primary* commute mode to work.
- The utility of local transit in Bend is limited by its operating hours (until about 6:00 PM), which do not meet the needs of some workers, particularly those in service sector jobs, as well as college students. Later evening service is consistently identified as high priority need.
- Existing transit riders, which include a relatively high share of transit-dependent riders, are appreciative of transit service but recognize its limitations; only 40% of existing riders are "strongly" or "somewhat" satisfied with the system as it currently is.
- Existing service levels are not high enough to allow spontaneous use of transit. In particular, relatively low frequency and long travel times for some trips that require a transfer limit transit's appeal for "choice" riders.
- Transit ridership and productivity (number of riders per vehicle hour) have increased over the past three years and the existing structure of the fixed-route system has been able to accommodate the ridership growth.

However, high ridership and/or transit delays due to congestion have emerged as issues on some transit routes and corridors.

- The Americans with Disabilities Act (ADA) of 1991 requires transit operators to provider complementary paratransit service within a ¾ mile distance of fixed-route bus service. Bend Dial-A-Ride operates within Bend city limits and provides geographic coverage and days/hours of availability that exceed ADA requirements for complementary paratransit service.
- Disincentives to auto use (e.g., delay, congestion, parking supply, etc.) are currently not significant in Bend. However, congestion is predicted to increase by 2030 and the opportunity to address congestion through traditional means is limited. Factors such as the cost of gas are potential, but uncertain, incentives to use non-auto travel modes.

NEEDS ASSESSMENT

Public transportation needs were identified from the above analysis and input. The project TAC also provided important input into the assessment of overall priority. Figure 5-1 identifies the prioritized major transit needs, among which later evening service is a shared top priority among both existing riders and more infrequent or non-riders. Existing riders' top priorities include additional weekend service followed by increased weekday frequency of service. More infrequent riders or non-riders top priorities include coverage to areas without existing coverage as well as more frequent and more direct service.

Numerous more nuanced needs were identified. The most significant operational issue among these is:

- Difficulty with on-time performance and maintaining a 40-minute running time on Route 5 (Wells Acres), resulting in this route being off of the coordinated pulse departure time[11] for several hours each day and overcrowding.

Other issues/needs include:

- Route 11 (Galveston), e.g., longer service hours, consistent headway, Saturday service.
- Better information, clarity, e.g., "Hard to plan around 40-minute schedules."

[11] All Bend local fixed bus routes generally leave Hawthorne Station at the same time every 40 minutes (e.g.,6:40 am, 7:20 am, 8:00 am, etc.) to allow passengers to make connections between routes.

- Improved regional connections, e.g., Redmond Airport (direct), no reservations, etc.
- Additional service coverage, including in NE Bend, SE Bend, and Deschutes River Woods, and Park & Ride access.

Figure 5-1 Major Public Transportation Needs

Expressed Major Service Needs	Overall Assessment	Assessment of Relative Priority as Identified by:		
		Current Riders	General Public	TAC
Early Evening Service Hours (6:00 – 8:00 PM)	High	High	High	High
Increase Saturday Frequency	High	High	Low	High
Provide Sunday Service	High	High	Low	High
Increase Weekday Frequency	High	Medium-High	High	High
Later Evening Service Hours (8:00 – 10:00 PM)	Medium	Medium	High	Medium
Expand Saturday Hours	Medium	Medium	Low	Medium
Early Morning Service Hours (Start at 5:00 AM)	Medium	Medium	Low	Medium
Provide Faster, More Direct Service	Low-Medium	Low	Medium	No Clear Consensus
Expand Service Coverage	Low-Medium	Low	High	Address other needs first

6 GOALS AND OBJECTIVES

This chapter provides a set of goals and objectives specific to the provision of transit service in Bend. A logical starting point for updating/developing transit-specific goals and objectives is the City of Bend's Transportation System Plan (TSP) and the Bend MPO Metropolitan Transportation Plan (MTP).

EXISTING TRANSIT GOALS AND OBJECTIVES

The following strategies for public transit in the TSP, which are also included in the MTP, lay out the vision for transit within city and MPO boundaries. They are excerpted below:

- **6.4.2 MULTI-MODAL STRATEGIES:** Public transportation is an important element of multi-modal transportation planning. It provides a valuable transportation alternative for high volume travel corridors….
- **6.4.3 COMMUNITY MOBILITY:** Public transportation improves mobility for a wide range of the traveling public…. Thus, public transportation is a valuable service that fills a much broader function than solely trip reduction. It provides mobility for those without cars as well as being an alternative to the automobile for many travel needs of the community.

This language in the MTP and TSP makes it clear that public transportation is a key element of multimodal transportation planning as a matter of MPO and City policy and identifies various benefits derived from transit. It also states that, beyond reducing vehicle trips, transit provides a valuable service to a diversity of users—people who depend on transit for mobility as well as people who choose to use it.

The City of Bend's Transportation System Plan expresses the vision for transit through four objectives, six supporting policies, and seven implementation actions.

RECOMMENDED TRANSIT GOALS AND OBJECTIVES

Based on the input received through this process, the TSP provides a solid foundation for the development of goals and objectives presented in the Public

Transit Plan. However, the PTP presents the objectives, policies and implementation actions in a different manner so that progress towards each goal can be monitored more directly. As such, the TSP objectives are presented in the PTP as "Goals" and the TSP policies are presented as "Objectives" in the PTP. Modifications to existing language (as noted) and new objectives are presented under each goal, with additions shown in italics; deletions are not indicated.

Goal 1: Provide public transportation services for the transportation disadvantaged

Objectives

A. Preserve and improve the existing Dial-A-Ride service. (Modified TSP Policy #1).

B. Equitably provide transit services throughout the city, including to areas with high concentrations of low-income households, households without a vehicle, seniors, and people with disabilities.

C. Provide transit service to all middle and high schools, as well as higher education facilities.

Goal 2: Reduce reliance on automobiles and develop public transportation facilities

Objectives

A. *Support and promote expansion of* a *reliable* public transportation system that *makes transit an attractive travel choice for* Bend residents and visitors in order to reduce reliance on the automobile. *Over time, the best transit service in Bend (highest frequency, most reliable, longest service span, etc.) should be provided in "primary transit corridors," as presented in the Public Transit Plan*. (Modified TSP Policy #2)

B. Work with other governmental agencies to support implementation of a 20-year-*Public Transit Plan*. Ordinances shall be adopted that implement the Public Transit Plan. (Modified TSP Policy #6).

Goal 3: Increase mobility, accessibility, *and visibility of transit* throughout the urban area

Objectives

A. Work with *COIC,* Central Oregon communities, and the State to *maintain or improve connections between local Bend transit services and* inter-urban public transportation services. Priority shall be given to *high*-ridership corridors *and connections*. (Modified TSP Policy #4)

B. Coordinate with *the Central Oregon Intergovernmental Council (COIC)*, the State, and other jurisdictions to evaluate funding alternatives and seek appropriate resources to *preserve and* support *future expansion of the* public transportation system. Effort should be made to evaluate creative funding techniques that may include the combination of public and private transportation resources in coordination with other agencies and transportation providers. (Modified TSP Policy #3)

C. Continue to partner with local organizations, businesses and agencies to enhance the image of transit throughout the community.

Goal 4: Provide infrastructure and land use planning to support transit

Objectives

A. Implement land use ordinances and other regulations that establish pedestrian and transit-friendly design along potential or existing transit routes, to improve access to the fixed-route transit system. (Modified TSP Policy #5)

B. Encourage new development requiring transit service, such as schools, hospitals, clinics, high-density housing, etc., to locate along an existing transit route. Encourage the highest-intensity uses to locate along primary transit corridors, which would offer the highest level of transit service.

C. Support implementation and/or improvement of *secondary transit hubs* including the Central Oregon Community College, the St. Charles Medical Center, and sites on the north and south reaches of Bend*, including land acquisition and other infrastructure.* (Modified Implementation Action #d)

D. Acquire properties (or secure joint use agreements) for Park-n-Ride lots at strategically located sites *throughout the urban area. These locations may be co-located with secondary transit hubs or other major stops* (see also *Objective 4C*).

The Complete Transit System Concept

A Complete Transit System is a unifying concept for complementary transit **service quality and land use elements** (e.g., service levels and land use policies) and **non-service elements** (e.g., facilities, pedestrian and bicycle access, etc.) that function together to achieve the desired local outcomes for transit in Bend. A Complete Transit System is the foundation for improving the quality of transit service and facilities in Bend, making transit an attractive travel option for "choice" riders and better meeting the access and service needs of "transit dependent" riders.

The Public Transit Plan provides strategies and recommendations for Bend to develop a Complete Transit System. These concepts support the goals outlined in this chapter, and are described in further detail in the following chapters (Chapter 7 – Service Quality and Land Use and Chapter 8 – Non-Service Elements).

Service Quality and Land Use

This element relates transit service to characteristics of transit-supportive land use and urban form. It describes the concept of primary transit corridors—a network of streets where transit service levels are aligned with the desire and capacity to increase land use intensity, and utility capacity is sufficient to support that level of intensity.

- Service design, service types, and vehicles
- Policies and investments related to management of street right-of-way (e.g., that provide priority to transit vehicles)
- Coordination of local and regional service

Non-Service Elements – Facilities and Amenities

Facilities and amenities include types of transit facilities, passenger amenities at those facilities, and thresholds (e.g., number of boardings) for prioritizing these capital investments. This element addresses:

- Transit centers, secondary transit hubs, and park & ride facilities
- Stops and shelters

Non-Service Elements - Access

Access strategies identify multimodal access strategies to increase the number of residents within a convenient distance to transit (typically considered to be about a quarter-mile for bus service), including:

- Pedestrian Access: Sidewalks, curb ramps, street crossings
- Bicycle Access: Bicycle facilities, parking, and end-of-trip facilities

Non-Service Elements – Demand Management

This element addresses:

- Partnership opportunities between local and regional public transit providers and businesses, institutions, and other organizations that influence or use public transit service
- Programs and policies to promote the use of public transit among Bend residents and employees

Non-Service Elements – Marketing/Branding

This element identifies strategies and programs to improve the overall perception of transit as an attractive travel option and help foster a "culture" of transit use in Bend.

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Appendix B provides additional detail on the service quality and land use Complete Transit System elements, and on the flexible service plan.

7 BUILDING A COMPLETE TRANSIT SYSTEM: SERVICE QUALITY AND LAND USE

The relationship between the quality of transit service provided and land use defines the transit ridership potential. Transit ridership is driven by "internal" factors including the level and cost of service. The more frequent the service, the more convenient it becomes and more choice riders (those that are not dependent on public transportation) use it. As with any other product or service, the demand for transit is also influenced by how well it is promoted or marketed to potential users. But "external" factors can greatly outweigh those directly controlled by the service provider. Even convenient, free, and well-advertised service may not attract riders if no one lives or works near it.

This section provides an overview of service models and types that can be used to deliver transit service along with guidelines that specify how population and employment density help to determine the level and type of service that should be provided on a particular street or corridor. Following is a discussion of specific service concepts for the short-, mid-, and long-term time frames.

SERVICE QUALITY AND LAND USE

Service Models

The existing Bend transit system operates in a "hub and spoke" pattern from the Hawthorne Station transit center. This is also known as a radial service design, illustrated in the left panel of Figure 7-1, where all bus routes depart from a single hub at a common time to allow transfers between routes. The practice of coordinated departures from the hub is also known as a "pulse." An alternative service model, the grid network shown in the right panel of Figure 7-1, enables more cross-town service and multiple transfer locations.

The hub and spoke model should continue to be appropriate for Bend within the 20-year time frame of this plan. This plan does not propose "cross-town" service that bypasses the Hawthorne Station, but the service concepts detailed in Chapter 8 will create opportunities for secondary hubs where transfer opportunities are

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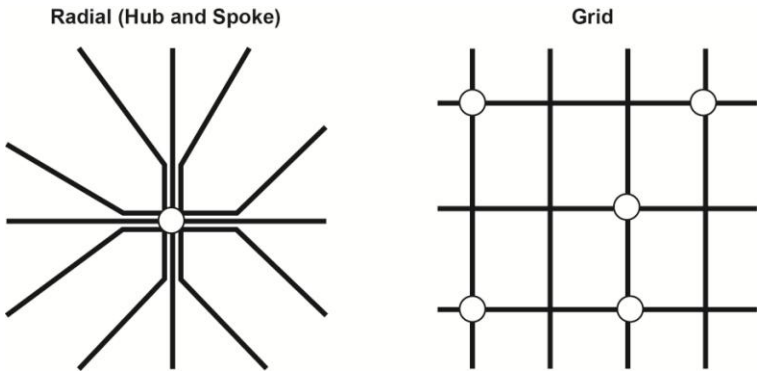
available outside of the primary hub. In either service model, bus routes can also be "interlined," where a single physical bus serves one route before "turning into" another route. This may be done for scheduling reasons or to provide a more convenient single-seat connection for passengers.

Figure 7-1 Conceptual Service Models



Source: Nelson\Nygaard

Service Types

The following bullets describe general types of transit services that are used to meet transportation needs:

- **Local Fixed-Routes** operate on a defined route, stops, and schedules. Trunk and primary routes are more oriented to productivity (high ridership) while secondary routes are more coverage-oriented.
  - **Trunk** routes are "spine" routes linking major attractions throughout the community. Deviations and loops are generally not acceptable. "Rapid Bus" service may be appropriate for such trunk routes (see sidebar below).
  - **Primary** routes have a greater neighborhood orientation than trunk routes. Limited deviations from the most direct routing to serve community centers may be acceptable.
  - **Secondary** routes provide mobility in neighborhoods that are less urban in character. Deviations are acceptable to meet specialized neighborhood needs.
- **Local Dial-A-Ride** is door-to-door paratransit service provided for residents who are unable to use fixed-route bus service due to a disability. In smaller communities or communities without fixed-route bus service,

See "Right-of-Way Management" in Appendix B for discussion of transit priority and other features that can be implemented to help transit stay on schedule, particularly for trunk or primary service types.

Dial-A-Ride may be used to provide transportation to the general public (as was the case in Bend prior to introduction of fixed-route service).

- **Regional Service**
  - **Inter-city Bus** service, such as the CET Community Connector, provides longer-distance travel between regional centers, more significant urban centers, and/or more distant communities.
  - **Vanpool** is shared-ride service, typically driven by one of the passengers to a particular location, such as a place of employment.

Rapid Bus ("Light" or "Partial" Bus Rapid Transit)

Rapid Bus is a type of service with features designed to improve performance and attract riders. It can be considered as a "light" or "partial" version of bus rapid transit (BRT) service such as the EmX in Eugene (below left). The following elements differentiate BRT from traditional fixed-route bus service:

- **Right-of-way design and management.** Full BRT often runs in exclusive or grade-separated lanes allowing fast travel times even in congested corridors. Rapid Bus may run in mixed traffic with transit priority features such as transit signal priority (TSP) or queue jumps (described below).
- **Stop/station design and access requirements.** BRT stations often include real-time passenger information, level boarding, off-board fare payment, and enhanced station amenities.
- **Service model/operating plan.** BRT often has longer distances between stops, follows a direct route with no/few deviations and provides frequent, all-day service.
- **Vehicle type.** BRT vehicles are often "branded" or stylized to distinguish them from local buses and may have features such as multiple, wide doors to increase boarding capacity.

Along a continuum, full BRT implements these elements more aggressively than Rapid Bus. RapidRide (below right) in the Seattle area is a recent example of a RapidBus-type service.

The EmX in Eugene is an example of a full BRT system, which is distinguished by its use of exclusive street right-of-way or grade-separated running ways.

Source: Flickr user functoruser.

The RapidRide service in the Seattle area is an example of Rapid Bus service. It runs in mixed traffic with transit priority features, but has branded, stylized vehicles and some well-developed station features.

Source: Nelson\Nygaard

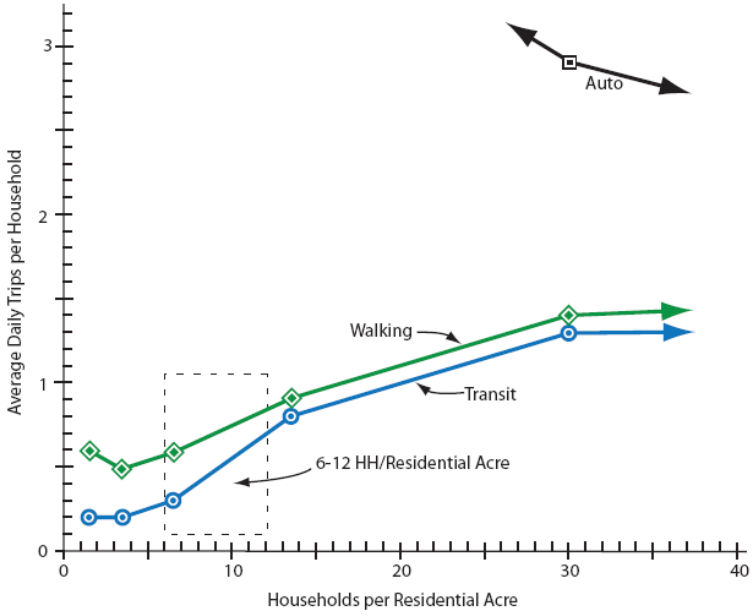
Land Use

See Appendix A, Land Use and Transit Demand, for additional background.

Transit ridership is directly related to population and employment density along transit corridors.[12] Overall, industry experience suggests that residential densities in the range of about 4 to 7 households per gross acre are a minimum threshold for high-performing transit and also represent a point at which overall mode shift away from driving begins to increase exponentially. As illustrated in Figure 7-2, this relationship is not linear, and transit demand (and corresponding reduction in per-capita auto travel) tends to increase most dramatically between about 6 and 12 households per acre. For purely residential areas, the minimum threshold corresponds to a density of 10 to 15 persons per acre, with the strongest increase in demand occurring between about 15 to 30 persons per acre.[13]

In practice, combined employment and population density drives transit performance, and the above ranges can be considered in terms of the number of residents plus the number of jobs.

Figure 7-2 Relationship between Density and Daily Trips by Mode



Transit demand tends to increase most dramatically between about 6 and 12 households per acre. Current average population density along transit corridors in Bend is approximately 2 households per acre.

Source: Nelson\Nygaard, based on MTC Household Travel Survey, 1990

[12] Appendix A provides a more detailed review of literature that attempts to quantify this relationship.

[13] Converted based on the average household size of Bend area (2.39 persons per household in the 2010 U.S. Census).

Primary Transit Corridors

The concept of primary transit corridors identifies the roadway segments that are most significant for transit. These corridors are not bus routes or a service plan, but a policy tool to help BMPO, the City of Bend, and CET manage and coordinate land use, public infrastructure, and transit service provision. Few areas and no complete corridors in Bend currently have the land use characteristics to support a high level of transit service (e.g., as frequent as every 15 or even 30 minutes). Primary transit corridors are a mechanism to coordinate transit and land use to achieve these land use characteristics and make this level of service feasible along Bend's most important arterial transit corridors by:

- Securing a commitment from the transit provider (CET) to maintain the highest level of transit service, and focus future investments in service capacity, frequency, and amenities along identified, mutually agreed-upon corridors where the City will focus land use planning.
- Influencing the City's zoning and development policies to encourage intensification of land use around primary transit corridors. Designating primary corridors provides a statement to the community that the City will seek to update land use plans where arterial transit corridors are currently not built or zoned for transit-supportive densities, but might be.
- Allowing the City to plan utility infrastructure (sewer, water, etc.) to support higher-intensity development along arterial transit corridors.
- Providing direction to City engineers and planners about where street rights-of-way should be designed and managed to help maintain transit operating speed and reliability. This enables transit to provide the best possible user experience, prevents timed-transfer connections from breaking down, and allows transit operating resources to be spent on improving service.
- Encouraging dense and/or transit-intensive land uses to locate on primary corridors, or at a minimum, along the supporting network. Primary transit corridors communicate preferred locations for uses that generate high transit demand and/or that desire to have transit service. For example, if a planned land use that is known to require transit, such as a social services office or school, chooses not to locate on a primary corridor, it does so with the knowledge that it may not get the best transit service. When such uses locate away from transit, they inevitably create pressure for the transit agency to provide service where it cannot be done efficiently.

It is important to emphasize that while Bend should prioritize the highest-quality transit service in primary transit corridors, some transit routes serving primary corridors will also provide transit coverage outside of primary corridors.

Two tiers of corridors are recommended—definite and candidate—to categorize the potential for future transit demand and likely phasing of particular corridor segments:

- **Definite corridors.** These are the most densely developed corridors and/or have the greatest development potential and connect key destinations that generate transit demand. They have the highest potential to warrant transit service investments (e.g., more frequent or more direct).
- **Candidate corridors.** These may be less densely developed corridors, but that have longer-term development potential. They could be elevated to a primary transit corridor if land uses become more transit-supportive and destinations that generate transit demand develop along the corridors.

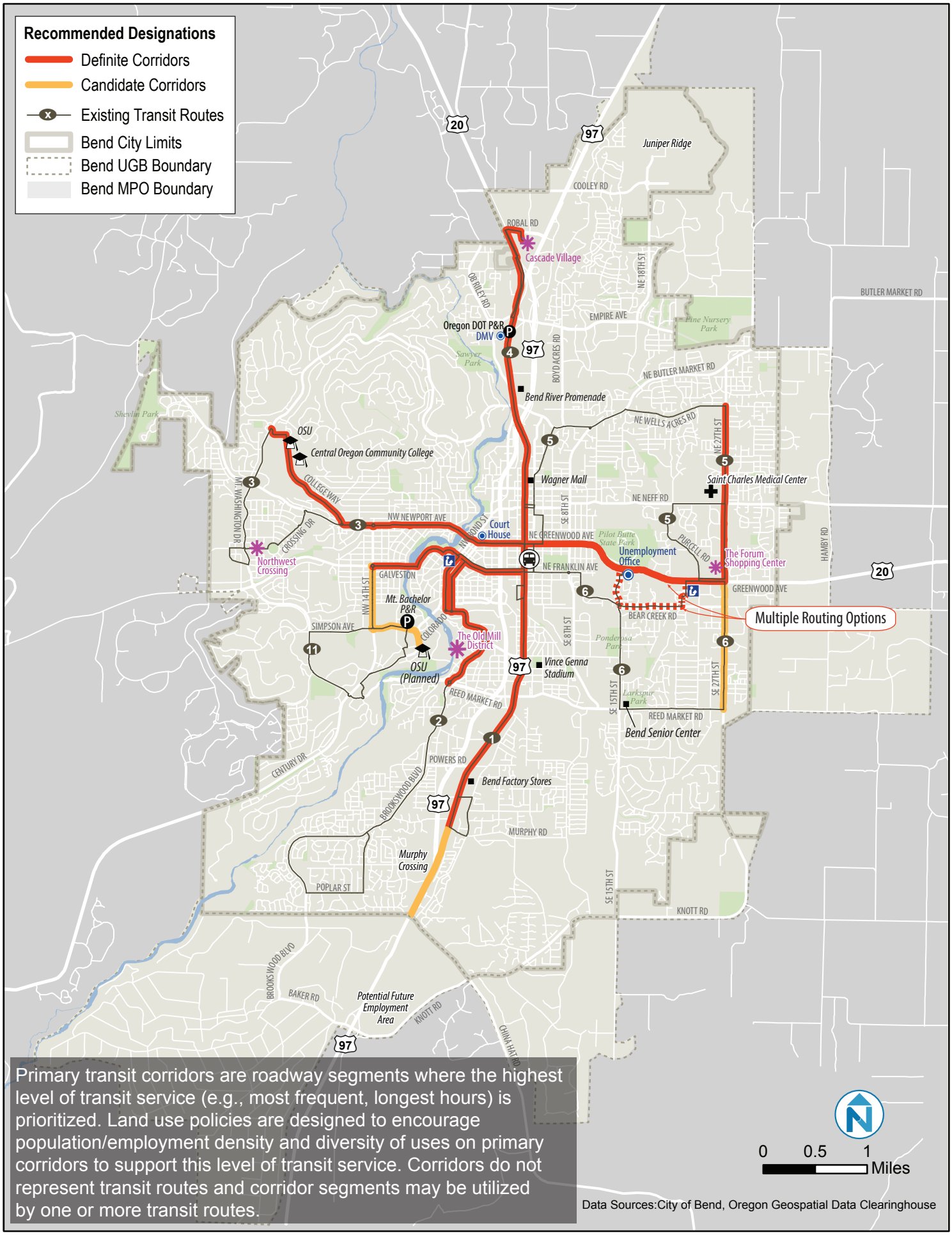
Recommended primary transit corridors are shown in Figure 7-4 (map). The table below (Figure 7-3) lists the existing and projected combined population and employment density within a quarter-mile walking distance of recommended primary transit corridors, including both "definite" segments (strongest transit demand) and "candidate" segments (future potential). Combined densities range from about 8 to 14 persons/jobs per acre currently and about 11 to 16 persons/jobs per acre by 2030.

Figure 7-3 Existing and Projected Population and Employment Density along Primary Transit Corridors

Primary Transit Corridor[1]	2010 Population and Employment Density[2]	2030 Population and Employment Density [2]
Greenwood (3rd to 27th)	7.8	10.5
27th Street (Wells Acres to Reed Market)	9.6	12.6
3rd Street (Hawthorne to Murphy)	8.9	13.0
3rd Street (Hawthorne to Cascade Village)	8.4	13.3
Galveston (3rd to NW 14th)	13.1	14.9
Newport (3rd to NW 14th)	14.4	15.9
Wall/Bond (Franklin to Reed Market) [3]	11.9	12.6

Notes: (1) Includes definite and candidate segments of primary transit corridors. (2) Within a quarter-mile walking (network) distance of each corridor. (3) Does not include north of Franklin or south of Reed Market.
Source: Future Opportunities Memo, Figure 14

Figure 7-4 Primary Transit Corridors



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Service Design Guidelines

See "Service Quality and Land Use" in Appendix B for sample service standards used by TriMet in the Portland area and additional service design criteria.

Figure 7-5 provides service and land use policy guidelines for local and regional transit service. It relates specific service types and characteristics to several "transit market" factors:

- **Density.** Density is considered to be the combined level of population and employment per gross acre. The organization of density is a key consideration that determines the size of a transit market. A particular level of service requires a minimum density *over a minimum area*. For example, an isolated apartment building or social services agency site may have a high density within a small area, but is a relatively limited and difficult to serve transit market.
- **Destinations.** Activity centers clustered along a route, with strong anchors, or major activity centers, at each route endpoint make transit more attractive and efficient.
- **Community Design.** Neighborhoods where all roads are designed to connect to major streets allow transit users to reach stops without walking out-of-direction. Community design impacts pedestrian access and safety, a critical non-service element that is discussed in more detail below. People will not use transit if it is difficult or dangerous to access a bus stop.

The density guidelines in Figure 7-5 were tested against various geographic areas in Bend using current (2010) and projected (2030) population and employment data and adjusted to provide realistic service level targets for Bend. For example:

- Downtown Bend currently meets the density guideline for 15-minute service. None of the other areas evaluated currently meet this guideline.
- NE 27th (St. Charles Medical Center and Forum Shopping Center area) currently meets the density guidelines for 30-minute service, and based on current 2030 projections would meet the guidelines for 15-minute service by 2030.
- Central 3rd Street (between BNSF railroad crossings) is projected to meet density guideline for 30-minute service by 2030.
- Several segments of recommended primary transit corridors, e.g., Galveston Avenue, Old Mill District, Greenwood Avenue (between 3rd and 12th Streets), are currently in the range of 8 to 12 persons per acre (combined population and employment), but 2030 population and employment projections fall short of the density guideline for 30-minute service.

Figure 7-5 Summary of Service Design Policy Guidelines

Service Attributes				Transit Market Factors	
Service Type	**Route Type**	**Service Characteristics**	**Modes of Service**	**Density Along Route [1]**	**Destinations / Anchors [1]**
Local Service					
Trunk / Primary Fixed-Route	High Frequency Urban Local Fixed-Route	▪ Frequent (15-minute or better) ▪ Fast (may have limited stops) ▪ Two-way service	Bus (or Future Rapid Bus[3])	20+ persons/acre within ¼ mile of corridor served	▪ High-quality anchors ▪ 25+ persons per acre within ¼ to ½ mile radius
Primary Fixed-Route	Moderate Frequency Urban Local Fixed Route	▪ 30-minute headway (frequency) ▪ All-day local service	Bus	16+ persons/acre within ¼ mile of corridor served	▪ High-quality anchors ▪ Major trip generators
Secondary Fixed-Route	Low Frequency Urban Local Fixed Route	▪ 60-minute headway (frequency) ▪ May be limited to weekdays	Bus	8+ persons/acre within ¼ mile of corridor served	▪ Major trip generators (hospital, senior center, etc.)
Not currently proposed [2]	Community Shuttle/Circulator	▪ Local circulation ▪ Personalized to community or neighborhood demand centers	Bus, Vintage Trolley, Mini-Bus, Van	2+ persons/acre within ¼ mile of corridors served	▪ No anchors required, but large trip generators needed along route
Not currently proposed [2]	Flex Route	▪ Local circulation ▪ Optional point-to-point service and on-demand curbside pickups/drop offs	Bus, Mini-Bus	0.5+ persons per acre, average in Flex Area	▪ Major trip generators
Regional Service					
Intercity Bus	Community Connector	▪ Limited stop services between regional centers ▪ May also serve one or two primary local destinations	Rail, Bus, Commuter Coach	None if connecting to other transit services or park-&-ride facilities	▪ Regional urban centers ▪ Local transit centers
Vanpool	Vanpools	▪ Shared ride, driven by one of the passengers	Van	Not Applicable	▪ Large employment centers ▪ Park-&-ride facilities ▪ Regional transit centers

Notes: (1) Considered as combined persons and jobs per acre. (2) The table includes guidelines for community circulators and flex routes; although these are not specifically recommended in this plan, these service types may be applied to meet future community needs. The "Downtown Circulator Considerations" section in Appendix B summarizes strengths and weaknesses of a potential Bend downtown circulator service. (3) See "Rapid Bus" sidebar above for a description of the Rapid Bus mode.

Fixed-Route Service Expansion Process

Expansion, modification, or increased service levels (e.g., 15, 30, or 60-minute service) for the fixed route transit system should be based on the density thresholds identified in Figure 7-5, as well as subjected to the performance standards described in the section below.

In addition, for a corridor to become a permanent primary transit corridor, with an eventual goal of 15-minute service, it should receive mutual agreement by the City and CET. The City and CET should err on the side of setting high thresholds for increasing service on primary corridors, while maintaining a broad category of candidate corridors. While the relationship between land use and ridership will be the subject of more research that may cause refinements in the thresholds, an overriding goal of designating primary corridors is permanence—the same permanence that developers currently recognize as represented by rail (e.g., light rail or streetcar). Therefore, once a corridor is built and served to primary service levels, it should not drop below those levels. In the case of corridors where a new development plan will allow the area to cross a key density threshold, the network of primary transit corridors should be expanded at the same time—or just in advance of—the density increase.

Performance Standards

This section describes performance standards for transit, such as productivity (passengers per revenue hour). These standards are complementary to the service design standards described above and are intended to supplement the performance standards being developed for overall CET services as part of the Regional Transit Master Plan.

The Value of Performance and Design Standards

Monitoring system performance and designing the "right" mix of transit service is an important task for Bend. Standards and measures provide a consistent framework for the effective management, evaluation, and planning of public transit services, and for communicating with the public and elected officials about how those services are performing. Performance and design standards should:

- Reflect and support the vision for and the overall mission of public transit in Bend (see Chapter 6). Goals and objectives provide a "foundation" for public transit, whereas standards provide a formal, quantifiable structure for how the service should be implemented, perform over time, and be modified to meet overall goals.

- Ensure compliance with all applicable federal, state and local regulatory requirements. *Are the services operated within the law?*
- Facilitate the simple, straightforward evaluation of the service. *Can transit service be monitored and evaluated with the existing staff resources and technology?*
- Provide a clear rationale for service increases (increased frequency or service span), service expansion (route extensions or new routes to areas not currently served), and service reductions (what services should be reduced when budgets are cut or if resources have to be reallocated to increase or expand service elsewhere). Service standards will help justify critical decisions affecting service delivery.
- Provide benchmark measures that can be written into approved service and operating policies.
- Provide criteria for the design and operation of safe and effective transit service. *How should new service be introduced and how should services be operated?*

Existing Performance Data and Standards

Cascades East Transit is currently collecting a variety of performance data on the fixed route and demand response services operating in Bend (as well as throughout the CET system). Every month, a management report summarizes the performance data in a simple spreadsheet report. A sample CET Monthly Management Report is included in Appendix B (see Figure B-3).

Figure 7-6 below presents a summary of the performance data that is currently being collected and the performance measures that are reported on a monthly basis. Although data are generally tracked/calculated on a systemwide basis, data should be collected separately for the fixed route and Dial-a-Ride services so that planning decisions can be made regarding these services separately (for example, wheelchair boardings).

Figure 7-6 Existing Fixed Route (FR) and Dial-A-Ride (DAR) Performance Data and Measures

Performance Data	
Ridership ▪ Total Ridership (FR and DAR) ▪ Elderly/disabled rides (FR) ▪ Ridership by route (FR) ▪ Bikes (Combined FR/DAR)* ▪ Passengers in wheelchairs (Combined FR/DAR)* **Customer Service and Service Delivery Data** ▪ Service Hours and Service Miles (FR/DAR) ▪ Farebox Revenue (FR/DAR) ▪ Trip Purpose (DAR) ▪ Total Calls (DAR) ▪ Ride Denials (DAR) ▪ FTA Denials (DAR) ▪ Ride Refusals (DAR)* ▪ No Rides Found ▪ No Shows (DAR) ▪ Late Cancelations (DAR) ▪ Subscription Trips (DAR)* ▪ Will Call Trips Performed (DAR)* ▪ Driver Complaints (Combined FR/DAR) ▪ Call Center/Dispatch Complaints (Combined FR/DAR) ▪ Program/General Complaints (Combined FR/DAR) ▪ Compliments (Combined FR/DAR)	**Fare Collection** ▪ Farebox revenue (FR and DAR) ▪ Monthly Passes (FR)* ▪ Multi Zone Monthly Passes (FR)* ▪ Multi Zone Day Passes (FR)* **Operating Costs** ▪ Costs by category (FR and DAR) **Safety and Security** ▪ Incidents (FR and DAR) ▪ Non-Preventable Accidents (FR/DAR) ▪ Preventable Accidents (FR/DAR) ▪ Injuries (FR and DAR)
Performance Measures	
▪ Passengers per Service Hour (FR and DAR) ▪ Service Miles per Passenger (FR/DAR) ▪ Cost per Passenger (unlinked trips) (FR/DAR) ▪ Cost per Service Hour (FR and DAR)* ▪ Farebox Recovery (FR/DAR) ▪ On-Time Performance (FR and DAR)*	

* Indicates data or a measure that is tracked/calculated, but not reported on the CET Monthly Management Report

Source: CET Monthly Management Report, October 2012

Recommended Performance Standards

While specific standards can vary, industry practice generally uses the following categories for service performance and design:

- Efficiency standards
- Service quality/reliability and quality/performance standards
- Service design standards (provided above in Figure 7-5, and will be addressed more generally for CET as part of the Regional Transit Master Plan).

Efficiency Standards

Efficiency standards use operational data to measure how efficiently the transit system is performing. The efficiency measures identified in Figure 7-7 are included in the monthly CET Management Report (Figure B-3 in the appendix), with the exception of operating cost per hour, which can easily be calculated from data listed in the report, and passengers per mile; the inverse, miles per passenger, is reported.

The above efficiency standards comply with the basic performance indicators required by the National Transit Database (NTD) and are largely consistent with the following operating and cost data already collected by the City.

Service Quality/Reliability Standards

Service quality and reliability standards ensure that the transit services provided in Bend meet certain standards for attracting and maintain ridership and customer satisfaction. Figure 7-8 presents recommended service quality and reliability standards. These standards were set based on industry standards, recent service trends, and a peer review of transit operations in cities comparable to Bend. The purpose of setting standards is to help the transit operator make and track efficiency improvements where they warranted, and maintain current standards where service currently exceeds industry or peer benchmarks.

Figure 7-7 Bend Transit Service Efficiency Standards

Performance Standard	Fixed Route Benchmark	Dial-a-Ride Benchmark	Notes/Comment
Service Efficiency: Passengers per Revenue Hour [a]	Minimum of 16.0 (2015) Minimum of 20.0 (2020) 2010: 15.7 [a] 2010 peer average: 20.1	4.0 (2015) 4.0 (2020) 2010: 3.5, 2011: 4.2 2010 peer average: 2.1	Fixed-route targets set to improve productivity over time.
Service Efficiency: Passengers per Revenue Mile [a]	Minimum of 1.2 (2015) Minimum of 1.2 (2020) 2010: 1.2 2010 peer average: 1.4	Minimum of 0.2 (2015) Minimum of 0.2 (2020) 2010: 0.33 2010 peer average: 0.19	Fixed-route target set at current (2010) level. For fixed-route service this may be most useful as a route-level measure.
Cost Efficiency: Operating Cost per Revenue Hour	Maintain under $83 (2015) Maintain under $99 (2020) 2010: $71.24 2010 peer average: $99	Maintain under $76 (2015) Maintain under $84 (2020) 2010: $72.08 Peer average: $58	Fixed-route target set based on FY 2013 and 2014 budgeted costs with subsequent 3.5% annual increases costs. Dial-A-Ride target set based on assumed annual increases of 2% from 2012 level, designed to reduce costs to the peer level (assuming peer costs grow at 3.5%) within 10 years (2022).
Cost Effectiveness: Operating Cost per Passenger	Maintain under $5.00 2010: $4.54 2010 peer average: $5.18 See also route-level standards below.	Maintain under $25 2010: $20.34 2010 peer average: $24.79	Assumes equal (or faster) growth in ridership compared to operating costs.
Cost Effectiveness: Farebox Recovery Ratio	15% (2015) 15% (2020) 2010: 10.9% 2010 peer average: 13.2%	Minimum of 8% (2015) Minimum of 10% (2020) 2010: 8.2% 2010 peer average: 8.2%	Fixed-route targets set to improve farebox recovery over time.

Notes: Based on industry standards, recent service trends, and peer review. Peer data includes Medford (OR), Everett and Yakima (WA), Redding (CA), Pueblo (CO), and Santa Fe (NM). (a) Vehicle revenue hour standard is used for NTD reporting of fixed-route service. Internally, CET reports fixed-route service efficiency by vehicle *service* hour: 22.1 passengers per vehicle service hour in 2010 and 24.9 passengers per vehicle service hour in 2011. A service hour standard is appropriate given Bend's timed-transfer system, however the above standard is based on vehicle revenue hours for comparability with peers.

Source: Peer data from National Transit Database (NTD), 2010

Figure 7-8 Bend Transit Service Quality/Reliability Standards

Standard	Fixed Route Benchmark	Dial-a-Ride Benchmark	Comment
On-time Performance	No trip should depart prior to the scheduled departure time. 90% of all arrival times should be within 5 minutes of scheduled time, tracked at the halfway point and final route destination. Track at timepoints as data collection capabilities improve.	All Dial-a-Ride trips shall arrive at pick-up points no earlier than 15 minutes before and no later than 15 minutes after the scheduled pick up time, 95% of the time.	This performance standard can be monitored on the fixed-route service by occasional point checks at key time points. Dial-a-Ride performance can be measured from regular data collected on all trips.
Passenger Complaints	Objective is to minimize legitimate passenger complaints, but no more than 25 per 100,000 boardings.		
Maintenance	The number of road calls should not exceed 10 per 100,000 revenue miles. At least 85% of all regular fleet vehicles should be available for operations at all times. The ratio of spare vehicles to regular fleet vehicles should not exceed 20%. 95% of scheduled vehicle inspections shall be completed on time		Road calls are the number of times a vehicle must be taken out of service while in operation. A high number of road calls indicates the need for a more aggressive vehicle replacement program or changes to maintenance procedures. The current spare ratio is within the benchmark level.
Bus Trips Cancelled	No scheduled trips should be cancelled, with exception of cancellations due to safety or weather conditions.		Service cancellation can be eliminated or minimized through increased reliability and sufficient spare vehicles.
Accidents	The objective should be no preventable accidents, but the number of preventable accidents should not exceed: 1 preventable accident per 100,000 revenue miles 2 accidents per 100,000 revenue miles 2 major accidents per 1,000,000 revenue miles		Operator training efforts should be adjusted to address specific types of preventable accidents.
Cancellations and No-Shows	N/A	No more than 5% of scheduled trips should be cancelled by passengers within one hour of scheduled trip, and no more than 2% of trips due to last-minute cancellations.	Cancellations and no-shows are an unproductive use of resources; occurrences should be tracked to identify customers and reasons. Actions should be taken to minimize recurrence. Cancellation of scheduled trips was 24% in 2011 (may relate to a subscription trips including work cancellations beyond rider control.) No shows were about 1% in 2011 (includes late cancellations).
Trip Coverage / Trip Denials	N/A	100% of all ADA-eligible trips should be accommodated.	A trip is considered "denied" if the trip cannot be accommodated one hour before or one hour after the desired time. Denials are not permitted under the ADA. In 2011, there were no FTA denials.

Route-Level Performance Measures and Standards

While route ridership and productivity are the most common measures of a successful transit route, additional and differentiated performance measures provide a more complete picture of route-level operations. The following measures are proposed to measure the success of individual routes:

- **Passengers per Revenue Hour.** Because it is so commonly employed and often provides a snapshot of overall performance, this measure is suggested for the evaluation of service types and individual routes.
- **Passengers per Revenue Mile.** Although this measure is not as relevant for Bend as all routes are relatively short, it nonetheless provides a good indication of routes that are experiencing delay or are simply long routes.
- **On Time Performance.** The reliability of route operations is also critical. Measuring an individual route's schedule adherence tracks whether a customer can count on a bus being there as scheduled, and helps identify the need for measures to improve transit reliability.
- **Passenger Loading.** Lack of seating capacity negatively impacts passenger comfort and can impede efficient passenger loading and unloading. Tracking this measures helps identify the need

Figure 7-9 summarizes the fixed route operating standards for the local service types identified in Figure 7-5 (above); current fixed-route services fall into the "secondary fixed-route" category, but will more differentiated in the future. Poor performance suggests that a route should be modified or eliminated. Exceptional performance suggests the route could be expanded, larger vehicles could be used, or headways can be improved.

Figure 7-9 Bend Route-Level Operating Standards – *Initial Discussion Draft*

Standard	Trunk / Primary Fixed-Route	Primary Fixed-Route	Secondary Fixed-Route	Community Circulator *	Flex Route *
Passengers per Vehicle Revenue Hour	25	15-20	10-15	Neighborhood / Feeder: 8-10 University: 15-20	4-10+
Passengers per Vehicle Revenue Mile	2.0	1.0	1.0	1.0	-
On-Time Performance	90%	90%	90%	90%	90%
Passenger Loading (Ratio of Passengers to Seats)	Off-peak: 0.85 to 1.0 Peak: 1.0 – 1.2	Off-peak: 0.85 to 1.0 Peak: 1.0 – 1.2	Off-peak: 0.85 to 1.0 Peak: 1.0 – 1.2	Off-peak: 0.85 to 1.0 Peak: 1.0 – 1.2	Off-peak: 0.85 to 1.0 Peak: 1.0 – 1.2

Notes: *These service types are not recommended as part of this plan

Figure 7-10 provides guidelines for new services, recognizing that it will take time to build ridership and productivity to the same levels as established routes. However, a new route that is not able to meet performance standards after a period of time may require modifications or redesign.

Figure 7-10 Guidelines for New Service Operating Standards

Time from Implementation	% Compliance with Standards
6 months	60%
1 year	75%
2 years	100%

Recommended Changes to Performance Data Collection

Figure 7-11 identifies recommended changes to tracking and/or reporting of performance data.

While most of the data needed to support the monitoring of performance measure is already available to CET based on existing data collection procedures, equipment upgrades would allow for improved data collection and performance monitoring. Automated farebox revenue data and automated passenger counting equipment may be among the most useful tools in collecting this data, as well as transit vehicle tracking (via an automated vehicle locator, or AVL, system, see Chapter 8). Software that supports these tools typically has extensive reporting capabilities to automate the process of not only calculating performance, but also

generating reports to share with the COIC Board and/or the BMPO Policy Board, such as the following, which were manually collected and tabulated as part of this planning study.

- Boardings/alightings by stop (collected in January 2012)
- Boardings by route, day, and time (collected in November 2011)

Figure 7-11 Recommended Changes to Monthly and Periodic Data Collection/Reporting

Reporting Period / Mechanism	Changes Recommended
Monthly (CET Management Report or other route-level performance reporting.))	▪ Add operating cost per service hour (by service) ▪ Add passengers per service mile (by service). This may be most useful as a route-level measure. ▪ On-time performance (halfway point and end of route; increased to timepoints as data collection capabilities improve). This is most useful as a route-level measure.
Periodic, with a goal of collecting data on every scheduled weekday and Saturday trip	▪ Boarding/alighting counts by stop ▪ Boardings by route, day, and time

FLEXIBLE SERVICE PLAN

The service concepts presented in this section are based on planning-level estimates of travel time and operating and capital costs for each route. The project team will continue to refine these estimates in close coordination with CET; however, CET operations staff will ultimately be responsible for validating and implementing these concepts at an operational level, including driving each route at different times of day, developing driver and passenger schedules, and making route adjustments to reflect local conditions when different aspects of the plan are implemented.

Time Frames

The service concepts proposed in this plan were developed around the following time frames, assumptions, and constraints:

- **Short-term service improvements (Years 1 to 3).** It is assumed that no additional operating revenues are available in the short-term time frame. Therefore these concepts focus on addressing the most pressing operational issues affecting the fixed-route system—in particular, to enable Route 5 to run within a 40-minute schedule all-day—with a cost-neutral approach (no increase in operating costs).
- **Mid-to-long-term service improvements (up to 20 years).** These concepts, built around primary transit corridors, recommend restructuring the system into a more flexible and scalable model that will support continued growth of the system. These concepts are organized into the following time frames:
  - **Near Mid-Term (Year 4).** Two routes are redesigned and there is additional service on Route 11 to support the planned OSU facility on SW Colorado Avenue. In addition, one additional evening run is provided on all routes, extending service until nearly 7:00 PM, helping serve work shifts that end at 6:00 PM.
  - **Mid-Term (Years 5 to 10).** An initial implementation of the restructured system provides more frequent service on several routes (every 30 minutes), while several routes run hourly. One new route is added and early evening weekday service is provided (until 8 PM). On Saturdays, routes run hourly, with up to 30-minute service on primary transit corridors. The cost of the initial restructuring is somewhat financially constrained based on evaluation of peer systems.
  - **Long-Term (up to 20 years).** A set of flexible service options can be implemented in phases, linked to available funding and criteria for

service expansion. As such, the long-term concept is not financially constrained, but maintains required funding levels within the range of peer systems.

Short-Term Service Improvements

This section identifies short-term improvements to the Bend fixed-route system to address key operational issues or help meet priority needs, given a constraint of no increase in operating costs.

Key Operational Issues and Proposed Route-by-Route Changes

Restructure Route 5 (NE - Wells Acres) and Route 6 (SE - Bear Creek). This change would allow Route 5 to run on the standard 40-minute pulse (coordinated) schedule all-day and allow passengers to make timed connections between routes.

- Operational Issue. Route 5, serving St. Charles Medical Center, has had significant on-time performance issues due to high boarding activity, wheelchair boardings, and traffic congestion. Earlier in 2012, Route 5 was taken off of the coordinated pulse schedule for several hours midday since it was unable to complete a round trip by the next pulse departure time. While taking it off of the pulse allows Route 5 to stay on schedule, it also impacts passengers' ability to make timed connections to/from other routes.
- Proposed Changes. A variety of options were explored to address the operational issues with Route 5 (see Appendix B) describes the leading alternative considered and compares the benefits and impacts of the two options). The proposed changes interline Routes 5 and 6 in order to allow Route 5 to return to the standard 40-minute pulse schedule in the short-term. As illustrated in Figure 7-12:
  - Outbound Route 5 turns into inbound Route 6 after serving St. Charles Medical Center and Purcell Boulevard. Instead of turning right (north) onto NE 27th Street, the bus stops on Greenwood Avenue west of NE 27th Street (#608). It then completes the inbound portion of Route 6, returning to Hawthorne Station.
  - Outbound Route 6 turns into inbound Route 5 after serving Bear Creek Road and Greenwood Avenue. The route serves a new stop[14] on Greenwood Avenue at Purcell Boulevard, instead of the existing Route 6 stop (#608) slightly further east. Instead of turning right (south) onto NE 27th Street from Greenwood Avenue, the bus turns left (north)

[14] Subject to evaluation of ridership demand

onto 27th. It then becomes the inbound Route 5 bus at the first stop on 27th north of Greenwood (#538).

- Inbound Route 5 does not serve St. Charles Medical Center directly. Passengers returning from the Medical Center or who live on Purcell Boulevard can either take the outbound Route 5, which turns into the inbound Route 6 and returns to Hawthorne Station, or walk to the nearest inbound Route 5 stop, on 27th just south of Neff (#518). This is about a third of a mile walk from the Medical Center.
- At Hawthorne Station, inbound Route 5 turns into outbound Route 6 (to Lava Lanes and the Forum Shopping Center). Inbound Route 6 becomes outbound Route 5 to St. Charles Medical Center.

In addition to improving all transfers to/from Route 5, this change improves connectivity to St. Charles Medical Center for residents and activity centers along Route 6. However, the change impacts inbound Route 5 trips from the Medical Center and some stops on Purcell Boulevard to destinations on Route 5, e.g., Mtn. View High School.

- Other Considerations:
  - As described below, a new route along Greenwood Avenue (Route 7) is proposed in the mid-term concept that will provide a direct connection from St. Charles Medical Center to Hawthorne Station. It is proposed that Route 5 and Route 6 then be connected in a bidirectional loop.
  - Traffic signal and signal timing improvements on 27th Street, planned for summer and early fall of 2012, will help alleviate delays due to traffic congestion.

Comparison of Service Alternatives for Route 5

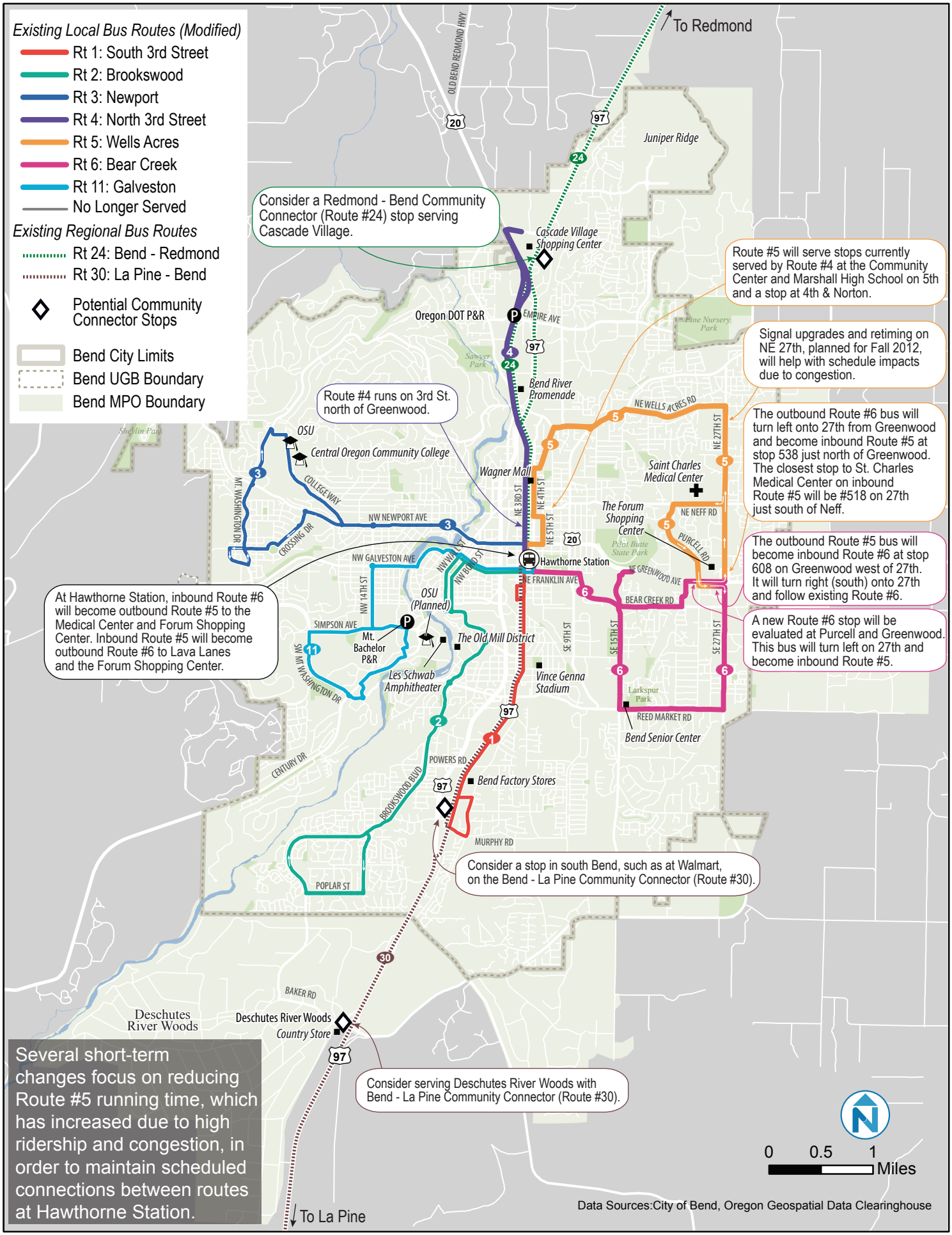
See Appendix B for a discussion of other options considered for Route 5 and a comparison with the leading alternative.

Move Route 4 (North 3rd Street) routing back to 3rd Street between Greenwood and Olney Avenues; Route 5 serves current Route 4 stops on 5th Street north of Greenwood.

- Operational Issue: In early 2012, Route 4 was routed on 4th and 5th Streets between Greenwood and Olney Avenues in order to better serve the Bend Community Center on 5th Street, which serves as the senior meal site[15], as well as Marshall High School. This deviation has increased running time on Route 4.
- Proposed Changes: Route 4 runs on 3rd Street and Route 5 serves current Route 4 stops on 5th Street north of Greenwood Avenue and at 4th Street and Norton Avenue. This change will reduce running time for both routes.
- Other Considerations: There is currently no traffic signal at 4th/Greenwood, although a potential future signal, as proposed in the Central Area Plan as part of broader changes to traffic circulation, could provide transit routes with a more efficient means of crossing Greenwood Avenue.

[15] As of September, 2012, senior meals are now served on a week-by-week basis, depending on available funding.

Figure 7-12 Short-Term Service Improvements



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Additional Short-Term Service Strategies

Additional short-term strategies can be used to provide more direct and convenient service as well as serve trip origins and destinations located outside of Bend city limits, which can best be served through close coordination of Bend local fixed-route service with CET regional transit services; this outcome is the goal of the Regional Transit Master Plan (RTMP) that is being developed by the Central Oregon Intergovernmental Council (COIC).

- **Use regular interlining to provide more direct, one-seat connections between major origin and destination pairs.** As described above, Routes 5 and 6 will be regularly interlined. Additional regular interlining that is currently practiced for schedule recovery (i.e., matching shorter and longer routes) can also be marketed to passengers as more direct transit connections:
  - Route 1 (S. 3rd Street) to Route 3 (COCC)
  - Route 2 (Brookswood) to Route 4 (N. 3rd Street)

  Note: In the mid-term concept, it is proposed that new Route 7 (Greenwood Avenue) be paired with Route 3.
- **Consider low-floor buses for use on routes with the most wheelchair boardings, and high overall boardings, when acquiring new/replacement vehicles**. Low-floor buses streamline the time needed to board wheelchairs and other passengers. Wheelchair lifts on buses in the current CET fleet can take up to five minutes, making it difficult for routes that run on a tight schedule to run on-time if there are multiple wheelchair boardings, including Routes 4 and 5.
- **Use Community Connector routes to serve areas near/outside Bend city limits.** Community Connector routes could serve a limited number of destinations[16] in Bend to provide regional passengers with more direct access to destinations or serve locations on the periphery of Bend that are not served by the fixed-route system. The Community Connector route from Redmond could potentially serve Cascade Village on some trips and/or directions. The La Pine Community Connector could make a stop in Deschutes River Woods; as of November

A Community Connector stop could serve Deschutes River Woods, if a suitable location can be identified/negotiated. The Riverwoods Country Store (above) or Riverwoods Baptist Church are potential options.

[16] Providing fixed-route service with local stops outside of Bend city limits would create a requirement to provide ADA Paratransit service, which is a significant additional expense.

2012 a stop was implemented at the Riverwoods Baptist Church. Longer-term, a stop with a small Park & Ride and/or Bike & Ride could be negotiated at the Riverwoods Country store, but would require some infrastructure improvements.

- **Coordinated Marketing of Regional Connections.** The regional system of Community Connector routes can provide Bend residents with access to regional destinations such as the Redmond Airport, a connection that is available today with an advance reservation. Converting the Airport shuttle to a fixed-route (no reservations required), adding runs timed with additional flight arrivals and departures, and marketing the Airport service should help attract Bend residents. As increased frequency and service hours make the Bend fixed-route system more convenient to use in the future, coordinated marketing and education would better inform Bend residents of regional connections available to them.
- **Use vanpools to serve dispersed employment sites.** Vanpools may be an effective means of serving dispersed employment sites (e.g., Bend Municipal Airport). Vanpools are likely to be more attractive to regional passengers using Community Connector (intercity) service and could be coordinated with regional service schedules. However they would also provide an additional transportation option for Bend residents.

Mid- to Long-Term Service Concepts

This section recommends concepts for restructuring the Bend fixed-route system to provide greater flexibility in keeping up with future growth. It first describes the proposed changes to the fixed-route service model and highlights the benefits of making the recommended changes. It then provides an overview of service characteristics for each proposed time frame and describes the proposed phasing of improvements. Finally, improvements included in each proposed time frame are detailed on a route-by-route basis.

The concepts are somewhat cost constrained based on an evaluation of peer systems, but are also structured as a flexible set of service options to meet the identified needs as funding resources become available.

Recommended Service Model

As discussed above, the existing radial, hub-and-spoke design will continue to be applicable in Bend for the foreseeable future. Hawthorne Station remains the primary timed transfer hub, but new transfer opportunities are introduced over

time. The key recommendation for the mid-to-long-term is to restructure the system using 30- and 60-minute cycle times[17] and 15-, 30-, or 60-minute headways[18] so that it can scale to meet longer-term service and land use goals. The existing system uses 40-minute cycle times and 40-minute headways. The recommended restructuring has the following benefits:

- **Improves legibility and ease-of-use**. Headways that divide evenly into an hour (e.g., 15, 30, and 60 minutes) make it easy for passengers to remember the bus schedule because the pattern is repeated each hour. Passengers no longer need to consult a schedule but know they can catch the bus at the same time each hour.
- **Supports the need for convenient transfers**. Consistent headways also make it easier for passengers to remember the schedule for timed connections, which also occur at the same times each hour.
- **More flexible and scalable over time.** Some existing routes do not require 40 minutes to complete and could run in 30 minutes. This frees capacity to provide service elsewhere. Other routes, with traffic congestion and growth of the system, are already reaching the limit of a 40-minute cycle time, e.g., Routes 5 (Wells Acres), 4 (N. 3rd), and 2 (Brookswood). A 60-minute cycle time also enables future expansion of routes to provide additional coverage.
- **Focuses service investments where ridership and land use opportunity is greatest.** Headways in increments of 15 minutes make it easier to scale up frequency (from 40 to 30 minutes initially) on high-demand routes serving major destinations, e.g., 3 (Newport - COCC) and 5. Service could be scaled down (from 40 minutes to hourly) on lower-demand routes, e.g., 6 (Bear Creek) and 11 (Galveston). The level of service would be scaled based on a set of criteria (described below).

Recommended Phasing Approach and Service Characteristics

This section describes the proposed phasing of improvements in the mid- to long-term within the following time frames:

- Near mid-term phase (Year 4), contingent on a planned OSU facility on SW Colorado Avenue
- Initial mid-term implementation of the restructuring (Years 5 to 10)
- Flexible options for phased longer-term implementation (up to 20 years).

[17] Cycle time, also referred to as running time, is the time it takes a bus to complete a single round-trip along its route.

[18] Headway is the time interval between consecutive buses arriving at a particular stop along a route (in the same direction).

The phasing recommendations for new or expanded service are based on the prioritized needs and results of the corridor evaluation conducted as part of the Future Opportunities analysis (Future Opportunities memo). Priorities for service expansion should be reevaluated as growth occurs, based on updated funding and land use projections and the recommended service expansion thresholds.

Increased frequency and hours of service should be prioritized on routes that serve the network of primary transit corridors that comprise the core of the transit system, illustrated in Figure 7-4 (above). Land use policies would encourage higher-density development and mixed uses along these corridors in order to support an increased level of transit service.

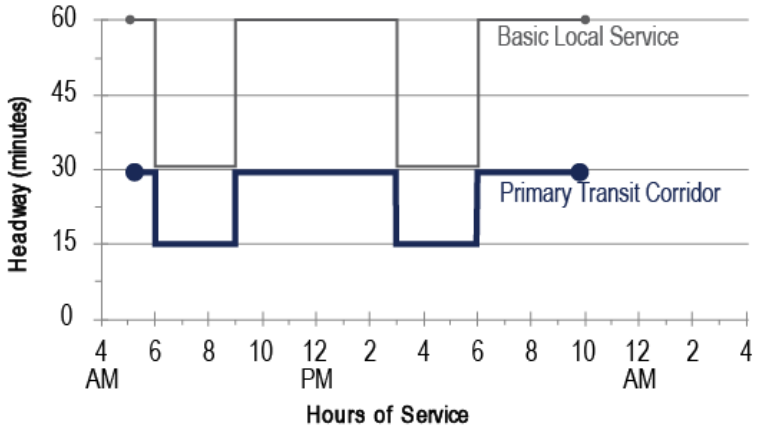
Figure 7-13 identifies the recommended service characteristics of the restructured concept at each time frame in comparison to the existing system and short-term modifications. Figure 7-14 illustrates the long-term targets for service span (hours) and headway for primary transit corridors and routes providing local service. Contingent on land use (see service targets below), primary corridors could see headways as high as every 15 minutes during peak periods in the long-term, while other local service routes could run as frequently as every 30 minutes during peak periods. The base headway for primary corridors would be 30 minutes while the base headway for other local service routes would be hourly.

Figure 7-13 Initial and Long-Term Recommended Service Characteristics

	Existing System and Short-Term Modifications	Near Mid-Term: New OSU Facility and Later Hours	Mid-Term: Initial Restructuring Concept	Long-Term Restructuring Concept
Time Frame	Years 1-3 (FY 2012 – FY 2014)	Year 4 (FY 2015)	5-10 Years (FY 2016 – FY 2022)	up to 20 Years (FY 2023 – FY 2032)
Weekday Service Hours	6:15 AM – 6:15 PM Route 11 runs only 6 hours per day	6:15 AM – 7:00 PM (one additional trip) Route 11 runs all day	6:00 AM – 8:00 PM	5:00 AM – 10:00 PM 60 minute service after 8:00 PM
Weekday Headways	40 minutes	40 minutes 60 min. on Route 11	30 or 60 minutes	15, 30 or 60 minutes (variable by route and time of day)
Saturday Service Hours	7:00/8:00 AM – 4:00/ 5:00 PM No Route 11 service	No Change Saturday Service on Route 11	8:00 AM – 5:00 PM	7:00 AM – 7:00 PM
Saturday Headways	80 minutes	No Change	60 minutes [1]	30-60 minutes
Sunday Service Hours	None	None	None	8:00 AM – 5:00 PM
Sunday Headways	N/A	N/A	N/A	60 minutes
# of Routes	7	No Change	8	9
# of Peak Buses	7	No Change	9	20

Notes: Appendix B provides a detailed listing of service characteristics by route for both the initial restructuring and the long-term concept. (1) Routes serving primary transit corridors could run every 30 minutes on Saturdays.

Figure 7-14 Long-Term Service Headway Targets



Headway is the time interval between consecutive buses arriving at a stop along a route.

Near Mid-Term Improvements (Year 4; Contingent on Planned OSU Facility)

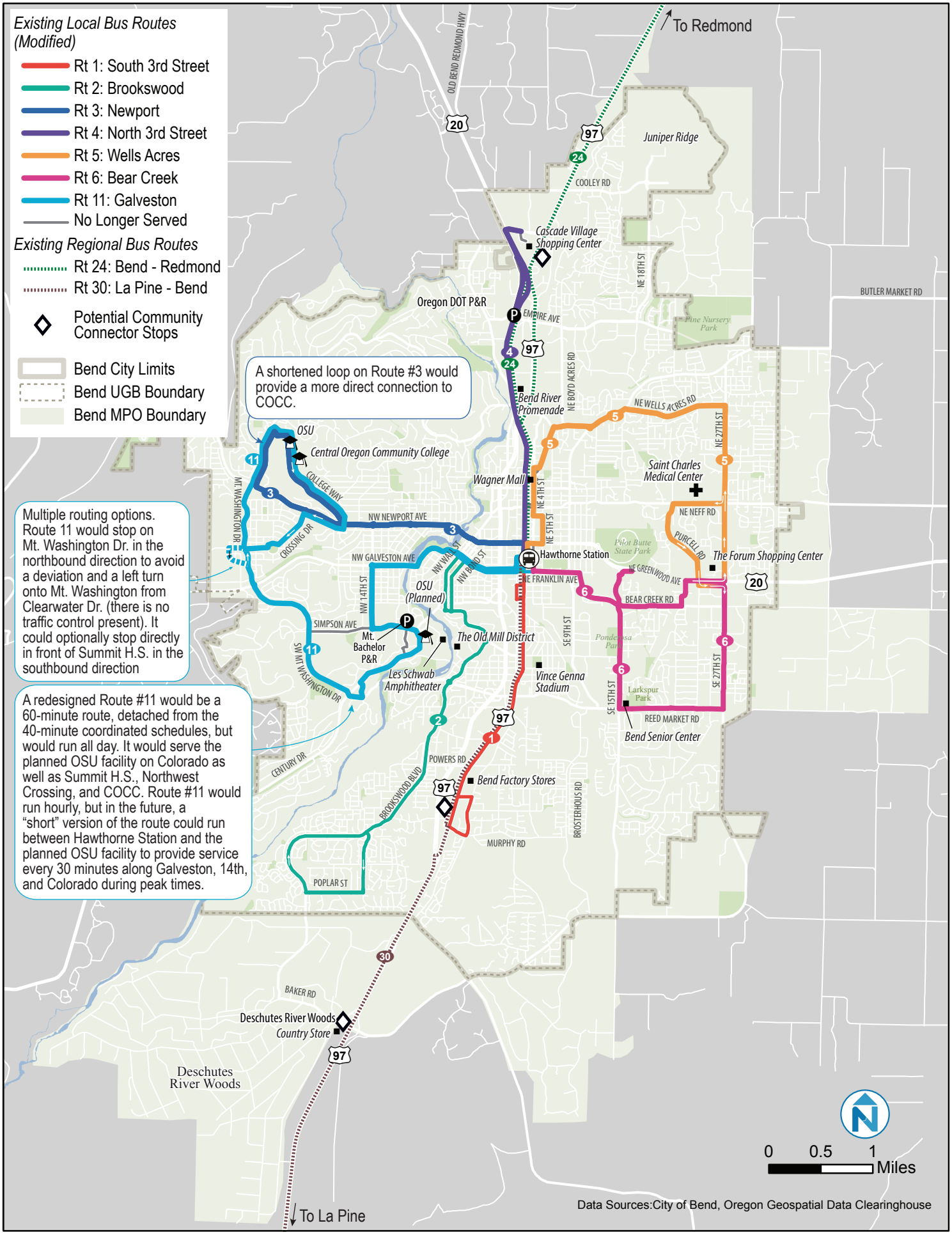
A new OSU facility is planned for Colorado Avenue, with up to 5,000 students within the next several years. This facility would likely increase demand for transit along existing Route 11 (Galveston), which currently only runs for only six hours per day and does not run on Saturdays, as well as for a connection between the new facility and the current COCC (and OSU) campus, served by Route 3.

The proposed changes, illustrated in Figure 7-15, are to restructure Routes 3 and 11 to provide a direct connection between the planned OSU facility and COCC:

- **Route 3 (Newport to COCC).** Shorten the Route 3 terminal loop (see Figure 7-14) to provide a more direct connection to COCC. Route 3 would follow Shevlin Park Road to Mt. Washington Drive and would no longer serve Northwest Crossing or Summit High School, which would instead be served by a modified Route 11.
- **Route 11 (Galveston).** Modify Route 11 to serve the planned OSU facility on Colorado and extend Route 11 to COCC, also serving Northwest Crossing and Summit High School. Route 11 would be enhanced to operate all-day and on Saturdays. Route 11 would run hourly, and would not fully coordinate with the schedule of other routes, until other routes are restructured to run every 30 or 60 minutes (see below).

In addition, if any additional operating resources are available, it is recommended to fund one additional evening trip on all routes, extending service to about 7:00 PM.

Figure 7-15 Near Mid-Term Concept for Service to Planned OSU Facility



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Initial Restructuring Concept (Mid-Term: Years 5 to 10)

The initial restructuring concept can be considered for implementation in the mid-term time horizon (Years 5 to 10). It represents the transition from the existing 40-minute cycle time/headway system to one based on 30- or 60-minute cycle times and 15, 30, or 60 minute headways. Service days and hours for the initial implementation are similar to current days and hours, except for the introduction of early evening service hours (6 PM – 8 PM), the highest priority need identified. The concept includes the following elements, which are illustrated in Figure 7-16 along with long-term concepts:

- Short-term modifications to Routes 4, 5, and 6.
- Implement highest priority enhancements:
  - Expand early evening service hours (until 8:00 PM).
  - Provide all-day service on Route 11 (hourly).
- Provide new Route 7 (Greenwood to Forum Shopping Center and St. Charles Medical Center). Restructure Routes 5 and 6 at the same time to avoid service duplication; a bidirectional loop is recommended (described in more detail below).
- Provide increased Saturday frequency (from every 80 minutes to hourly), which could include 30-minute service on some primary corridors.
- Provide 30 minute weekday service on most routes serving primary transit corridors. Routes 1, 3, and 7 should all be able to complete a round trip in 30 minutes, while Route 4 would require a second bus and is therefore initially recommended to have 30-minute service only during peak periods. A short version of Route 11 can be used to provide 30-minute service to the new OSU campus, at least during peak periods.

Long-Term Service Concept (up to 20 years)

The long-term concepts are also shown in Figure 7-16 and include (listed in general order of priority, based on public input):

- Expand early morning and later evening hours: 5-6 AM, 8-10 PM (at least on primary corridors). Early morning service levels are assumed to be similar to midday service, however later evening routes are assumed to operate similar to Sunday service (above bullet) to reduce costs.
- Implement Sunday service (hourly). This could include 30-minute service on some primary corridors, however the long-term concept assumes that routes which cycle in 30-minutes will be interlined to reduce operating costs (this is similar to existing Saturday service). However, some transfers may require a wait of up to 30 minutes.

- Expand Saturday hours to 7 AM – 7 PM.
- Increase weekday frequency to 30 minutes all-day on primary corridor routes.
- Increase Saturday frequency to 30 minutes on primary routes, e.g., 1, 4, 7, and portions of 2 and 11. This level of service may not be needed on Route 3 to COCC, but offering it would maintain the interlining between Routes 3 and 7.
- Expand service in NE and SE Bend, *as warranted by a service policy tied to land use targets*. This can be done most cost-effectively using additional running time available on routes that cycle in 60 minutes (2, 4) or with additional routes that cycle in 30 minutes.
  - NE: Extend Route 4 to Juniper Ridge and/or to provide service in the NE neighborhoods using a terminal loop.
  - SE: Extend service on Route 2 to Murphy/Brosterhous/15th (hourly). The existing loop using Poplar would continue to be served hourly. This would provide 30-minute service through downtown and the Old Mill District.
  - NE: New Route 8 in NE (8th/Boyd Acres/Empire/18th to Juniper Ridge and/or Cascade Village) (hourly).
- Increase peak frequency on non-primary routes to 30 minutes (where justified by service policy).
- Increase midday frequency on non-primary routes to 30 minutes (where justified).
- Provide peak 15 minute frequency on primary routes (where justified).

Route Concepts

This section provides a more detailed discussion of changes and improvements on a route-by-route basis.

New Routes

- **Route 7 (Greenwood) – mid-term:** A new Route 7 would serve Greenwood Avenue between Hawthorne Station and the Forum Shopping Center and St. Charles Medical Center. This route, shown in Figure 7-16, is included in the initial mid-term implementation. It would be interlined with Route 3 to COCC and would provide a direct east-west connection across the city. Route 7 would serve land uses located at Greenwood and 15th Street that are currently served by Route 6. Between 15th Street and

Dean Swift Road, the route could optionally use Greenwood or follow Bear Creek Road. *If the Greenwood routing is adopted, it is critical to:* (1) provide accessible pedestrian connections from residential neighborhoods along Bear Creek to serve each new stop on Greenwood Avenue (see Appendix B, Figure B-16 for a map of existing and planned accessways from the Bend TSP), and (2) to provide safe pedestrian crossings of Greenwood Avenue, e.g., using rectangular rapid flashing beacon treatments (see Chapter 8).

- **Route 8 (8th/Boyd Acres/Empire/18th) – long-term.** A new Route 8 would provide service coverage in NE Bend, as shown in Figure 7-16. Based on the corridor evaluation and field evaluation of the potential routing options, this route serves 8th between Hawthorne Station and Wells Acres Road, Boyd Acres south of Empire, and 18th south of Cooley Road. This route could have a terminus at Juniper Ridge, with a terminal loop to serve the planned Juniper Ridge Town Center, or a terminal loop serving the NE neighborhood (indicated by the cross-hatched areas on the map). Alternatively, this route could terminate at Cascade Village or an alternative major transit stop serving the north part of Bend; a future major transit stop could also be located at/near Juniper Ridge in conjunction with Route 8.

Modifications to Existing Routes

- **Route 1 (South 3rd Street).** Route 1 would continue to operate similar to today. In the future, it could be extended to run down 3rd Street south of Murphy Road if significant land uses develop there. This change would require a 60-minute running time as opposed to the current 30-minute running time. A major transit stop and bicycle parking can be added at the south end of the route, such as near Walmart or in conjunction with the Murphy Crossing development, to enable longer-distance access including a possible Community Connector stop. A small, co-located park and ride with this stop could also support shared rides (carpools or vanpools) to worksites outside of Bend, such as Sunriver.
- **Route 2 (Brookswood) – long-term.** Route 2 could be extended to serve the planned connection of Murphy Road across the Bend Parkway, as illustrated in Figure 7-16. It would make two trips every hour, with one trip providing hourly service on the existing loop on Lodgepole Drive and Poplar Avenue and the other serving the proposed extension to Murphy and Brosterhous Road; this would provide 30-minute headways on Route 2 through downtown and the Old Mill District.
  - Bicycle parking is recommended at the stop at Poplar Street and Brookswood Boulevard to enable bicycle access from Deschutes River

Woods. A relatively new shopping center at Brookswood and Amber Meadow Drive is located about 0.1 miles south of the current end of the route, however there are currently no suitable turn-around options.

  - The Murphy Road extension would serve residential uses and middle and high school sites that are planned by 2030 both north and south of Murphy Road. A turn-around would be required, such as a roundabout that is planned at Murphy/Brosterhous in conjunction with the future extension of Murphy Road to 15th Street; alternatively it may be possible to use an access road through R.E. Jewell Elementary School.
  - A short version of the route (turning around at approximately Reed Market) could also be added at certain times to increase peak frequencies in downtown or the Old Mill District, or to provide later evening service.

- **Route 3 (Newport to COCC)**: This route would be redesigned to provide more direct service to COCC.
  - A shortened Route 3 loop (as shown) would provide a more direct connection to COCC. It would no longer serve Northwest Crossing or Summit High School, which would be served by a redesigned Route 11 that would maintain the connection between Summit High School and COCC (see below).
  - Route 3 would be interlined with the new Route 7 to provide a more direct east-west connection across the city**.**
  - A one-way, clockwise loop through COCC is preferred for operational reasons during snowy weather.
- **Route 4 (North 3rd) – long-term**: This route could be extended to serve Juniper Ridge, when warranted, and/or serve a terminal loop through NE neighborhoods.
  - Route 4 will be on a 60-minute cycle time following the initial implementation of the restructuring concept, which should make a terminal loop through NE neighborhoods feasible at no additional operating cost, but is contingent on minimizing delays at-grade railroad crossings, e.g., on Cooley Road.
  - Cascade Village is currently recommended as a major transit stop serving the north part of Bend, with bike parking to support access from surrounding neighborhoods. However, in conjunction with potential future changes/realignment of Hwy 20 and/or Hwy 97, an alternative major transit stop location may be identified that can also serve as a park and ride and/or stop for the Bend-Redmond Community Connector shuttle.

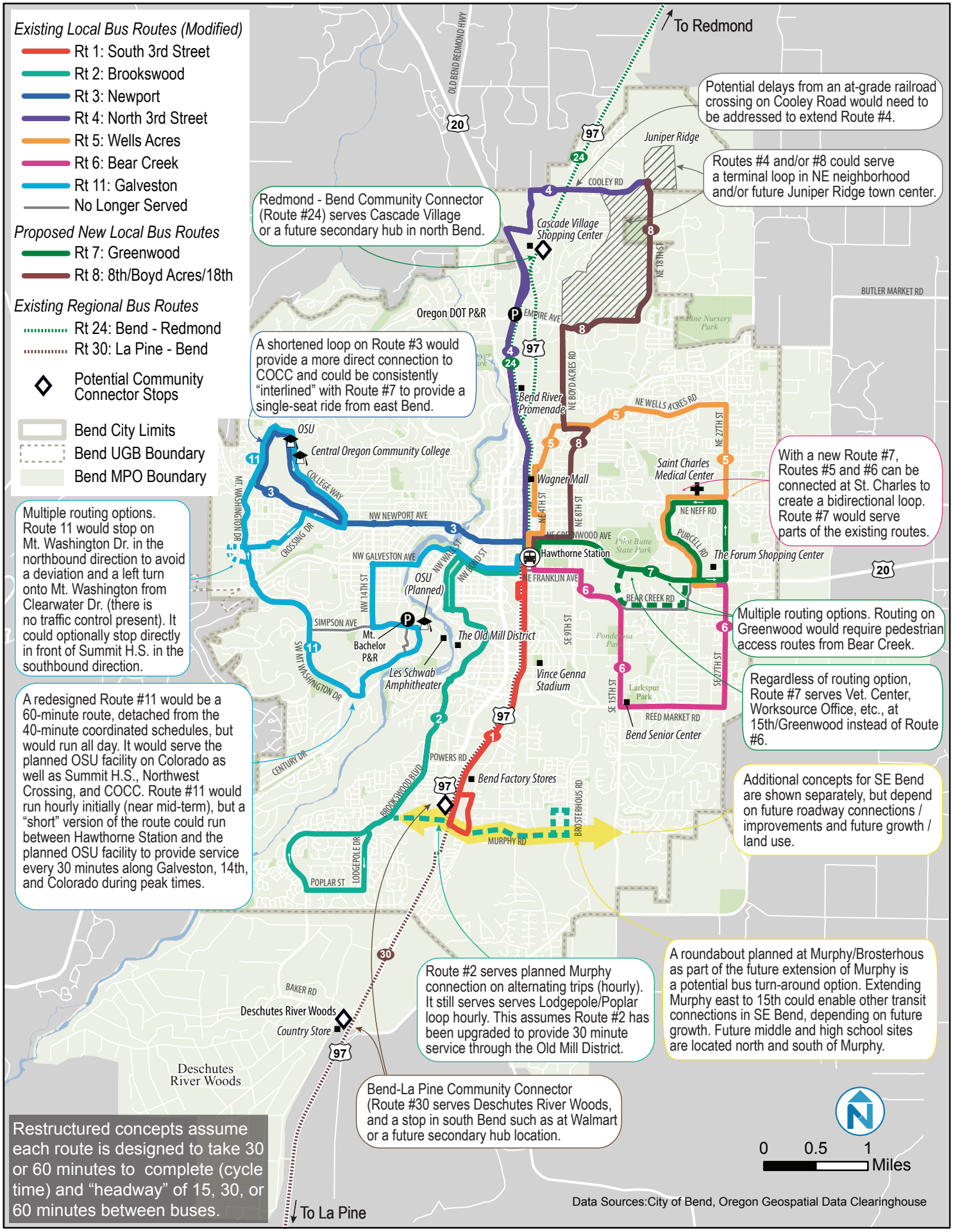
  - In conjunction with any changes or realignment of Hwy 20 and/or Hwy 97, it would be highly desirable to provide a bidirectional stop in proximity to the Deschutes County Sheriff and State Police offices located on Jamison Road, which are currently served only on outbound trips.
  - Stop placement and transit priority improvements can also be evaluated on 3rd Street to optimize transit running time.

- **Route 5 (Wells Acres) and Route 6 (Bear Creek):** With introduction of the new Route 7 serving St. Charles Medical Center from Greenwood Avenue, Routes 5 and 6 can be combined into a bidirectional loop. This would be similar to the short-term interlining of the two routes, however, they would no longer serve 27th (between Greenwood and Neff) and Bear Creek (between 15th and Dean Swift), to avoid duplication of service with Route 7. Route 6 would no longer serve uses at Greenwood & 15th (e.g., Lava Lanes, Veterans Center, Worksource Office, etc.), which would be served by Route 7. Routes 5 and 6 would initially operate hourly in each direction. More frequent service could be provided in the peak as allowed by funding and demand. These routes may have sufficient running time to provide some additional coverage in SE Bend; additional concepts for SE Bend are discussed below.
- **Route 11 (Galveston):** This route will be redesigned to provide an increasingly important connection between the planned OSU facility on Colorado Avenue and COCC. Implementation should be timed with and contingent upon development of the OSU facility.
  - Extend route to Northwest Crossing, Summit High School, and COCC.
  - Upgrade to operate all-day with hourly service. In the early mid-term time frame, its schedule would not be coordinated with the 40-minute pulse. However, Route 11 currently does not fully coordinate with other routes due to its limited weekday service hours.
  - In the mid-term time frame, the schedule would be coordinated as other routes also move to a 30- or 60-minute schedule. A "short" version of Route 11, turning around at OSU, can be used to provide 30-minute headways between Hawthorne Station and the OSU facility, including through downtown and the Galveston Avenue primary transit corridor. This could be implemented as a downtown circulator (Appendix B) using a Colorado Avenue or Reed Market Road crossing.

Additional Long-Term Service Concepts

Appendix B provides a map illustrating several additional long-term concepts in NE and SE Bend that could be enabled by planned/future projects to complete roadway connections or address connectivity issues. It is difficult to anticipate how land use and transit demand will respond to these improvements, therefore the map identifies potential connections and where applicable, suggests how they may be served.

Figure 7-16 Restructured 30/60-Minute Mid- to Long-Term Service Concept



8 BUILDING A COMPLETE TRANSIT SYSTEM: NON-SERVICE ELEMENTS

This section provides a general description of non-service transit system elements that complement enhanced service levels and transit-supportive land use, and recommended non-service improvements and strategies for meeting the public transportation needs and priorities identified in Chapter 5.

FACILITIES AND PASSENGER AMENITIES

Bus stops are the basic type of transit facility and serve as the "front door" of the transit system. The location, design, and operations of stops and other facilities often define the first impression of transit and are important not only for retaining existing riders, but also attracting new ones. The location and spacing of bus stops have a strong influence on transit system performance, e.g., helping buses stay on schedule. Major types of transit facilities include:

- **Transit Centers**. Transit centers are the primary locations where bus routes converge and buses can layover between trips. In Bend, Hawthorne Station is the primary transit center and provides shelters and an indoor waiting area with restrooms. It facilitates transfers to/from regional routes as well as intercity services.
- **Major Transit Stops / Secondary Transit Hubs.** Major transit stops provide a higher level of amenities at major stop locations. Such stops may function as secondary hubs that provide additional transfer and layover locations outside of the main transit center.
- **Park and Ride Facilities**. Park and ride lots may be co-located with transit centers and hubs and allow passengers to access transit by motor vehicle, be dropped off, or access shared rides (carpools or vanpools) to local or regional worksites. Park and rides may be located at public facilities or may be established through a cooperative agreement with a private landowner.

Figure 8-1 identifies existing and recommended major public transportation facilities in Bend. Figure 8-2 provides a map of these facilities, as well as existing, planned, and proposed (conceptual) stops and amenities in relation to existing/proposed routes. It is important to note that more detailed public input and evaluation of conceptual stop locations will need to be conducted by CET and/or the

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City of Bend based on the final routing, and that not all of the illustrated stops may be implemented. It is also assumed that all stop locations will be designed to meet the Americans with Disabilities Act (ADA) minimum requirements for new bus stops, which will allow for safe passenger access to and from the bus stop. Further guidance for siting ADA accessible bus stops can be found in the Transit Cooperative Research Program (TCRP) Report 19, Guidelines for the Location and Design of Bus Stops[19].

Figure 8-4 (below) provides guidelines for tiers of stops and amenities that can be provided, based on available resources, passengers' needs, and operational considerations.

Figure 8-1 Existing and Proposed Major Public Transit Facilities

Facility Type	Existing	Recommended/Proposed Future Facilities
Transit Centers	Hawthorne Station (between 3rd/4th Streets)	Could be considered in conjunction with future redevelopment or transportation infrastructure opportunities
Major Transit Stops / Secondary Transit Hubs		East: St. Charles Medical Center West: COCC North: Cascade Village (or future alternative location in North Bend) and/or Juniper Ridge South: Walmart or Murphy Crossing areas Enhancements such as shelters or bicycle parking are identified in Figure 8-2
Park & Ride Lots	ODOT P&R Mt. Bachelor	Potential future alternative P&R in north Bend (with a new secondary hub location) Deschutes River Woods (Minor Park & Ride)

Facility/stop amenities can be prioritized based on passenger utilization (e.g., number of daily boardings), the guidelines provided in Figure 8-4, and other operational considerations.

[19] http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_19-a.pdf

Transit Hub

The existing transit center, Hawthorne Station, is described in the Bend Transportation System Plan (TSP) as the "interim transit center location." Hawthorne Station meets the needs of the current transit system and this plan recommends that Hawthorne Station continue to serve as Bend's primary transit center.

> ***Transit Center Location Considerations***
>
> See Appendix B for a discussion of considerations for relocating the primary transit center at Hawthorne Station in response to future growth or redevelopment/connectivity opportunities.

Major Transit Stops / Secondary Hubs

The Bend TSP currently proposes major transit stops at St. Charles Medical Center (east Bend) and COCC (west Bend). This plan recommends major transit stops at these locations as well as in north and south Bend. Figure 8-4 provides high-level costs for infrastructure improvements at major transit stops, e.g., shelters or high-capacity shelters, real-time bus arrival information, bicycle parking, etc. These infrastructure investments would enable these stops to serve as future secondary transit hubs, facilitating transfers between routes in the future as enabled by future service expansion, e.g., between Routes 3 and 11 in west Bend, Routes 4 and 8 in north Bend, Routes 1 and 2 in south Bend, etc. New roadway connections (such as the 27th-Empire link) may create additional transfer opportunities outside of the primary transit center. This plan does not recommend service that bypasses the main transit center, however such service may be feasible in the future.

The additional major transit stop / secondary hub locations are recommended in:

- **North Bend**, at Cascade Village or an alternative secondary hub location that may be identified in conjunction with potential future changes/realignment of Hwy 20 and/or Hwy 97, and that can also serve as a park and ride and/or stop for the Bend-Redmond Community Connector shuttle. A major transit stop and/or secondary hub at Juniper Ridge may also be warranted in the future, depending on the nature/level of development and detailed service design for Routes 4 and/or 8.
- **South Bend**, at a location to be determined (could include Walmart or Murphy Crossing area).

Park & Rides and Regional Transit Connections

As shown in Figure 8-1, two existing Park and Ride lots are identified in the Bend TSP:

- ODOT Park & Ride located off of Hwy. 97 in the north parking lot of the ODOT Region 4 offices
- Mt. Bachelor Park & Ride located northwest of SW Simpson Avenue and SW Columbia Street

An additional Park & Ride is located east of city limits at Powell Butte Highway, but does not provide a current or planned connection to transit.

A strategy in this plan is to use regional Community Connector routes to provide service at selected locations outside current city limits and/or beyond extent of the fixed-route system. Where warranted by demand, such service should be coordinated with Secondary Transit Hub and/or Park & Ride facility locations. Two such locations were identified within the MPO Boundary as described above and shown in Figure 8-2 and Figure 8-3:

- Deschutes River Woods
- North Bend, e.g., the existing ODOT Park & Ride, or an alternative future location

Desire among the public for additional Park & Ride facilities and access to transit service was identified through public input for this plan. Figure 8-3 highlights potential park & ride locations, which would be considered of as part of the COIC Regional Transit Master Plan (RTMP) and the Regional Park & Ride Plan. These include:

- Sun River. Transit service would require identifying a suitable stop location, ideally in close proximity to Highway 97 to avoid excessive delay to passengers traveling between Bend and La Pine.
- Tumalo. The Bend urbanized area boundary was recently extended to include Tumalo, based on the 2010 U.S. Census; a map of the revised boundary is provided in Appendix D. Transit access in this area would likely depend on future regional service between Bend and Sisters.

Figure 8-2 Existing and Proposed Transit Facilities

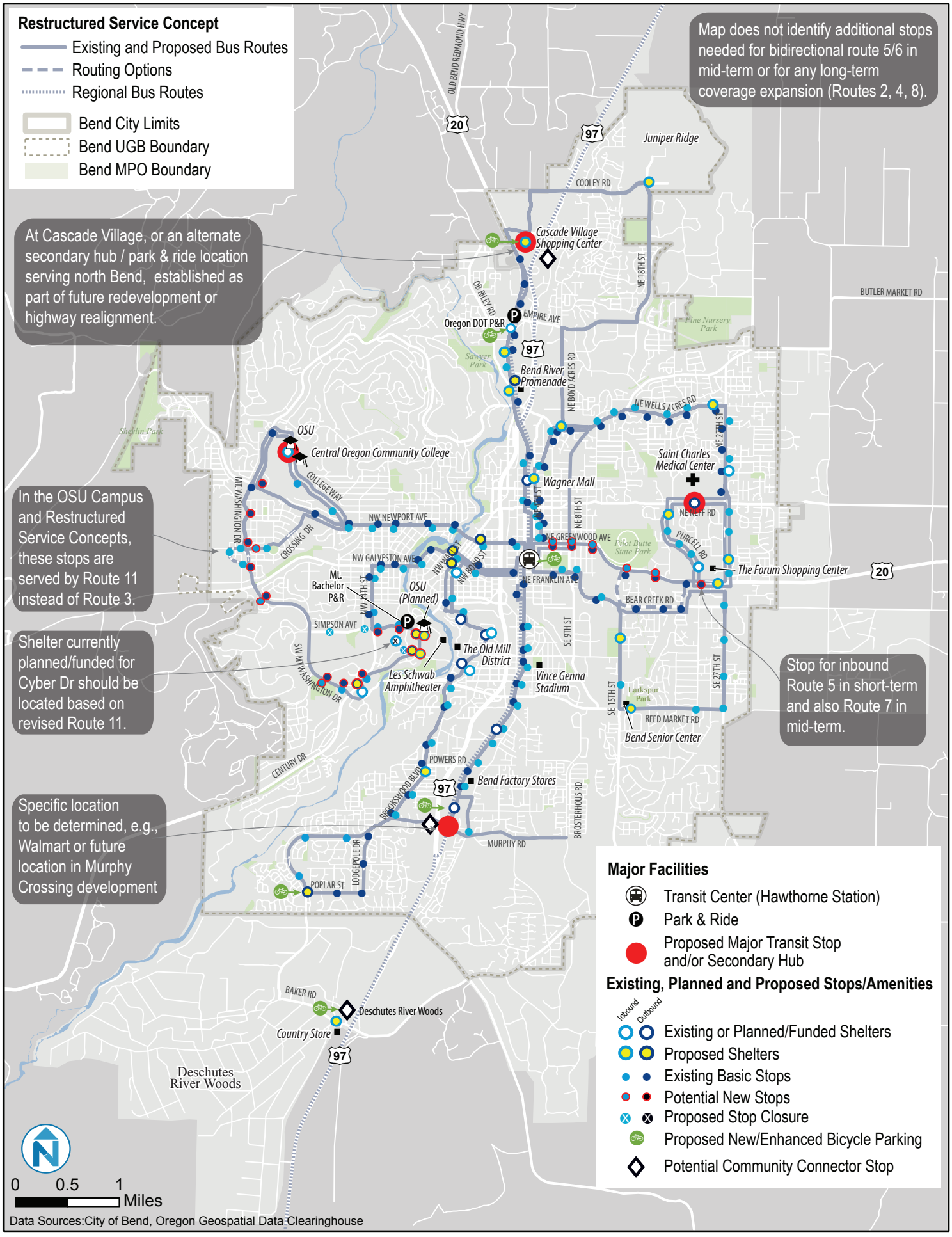
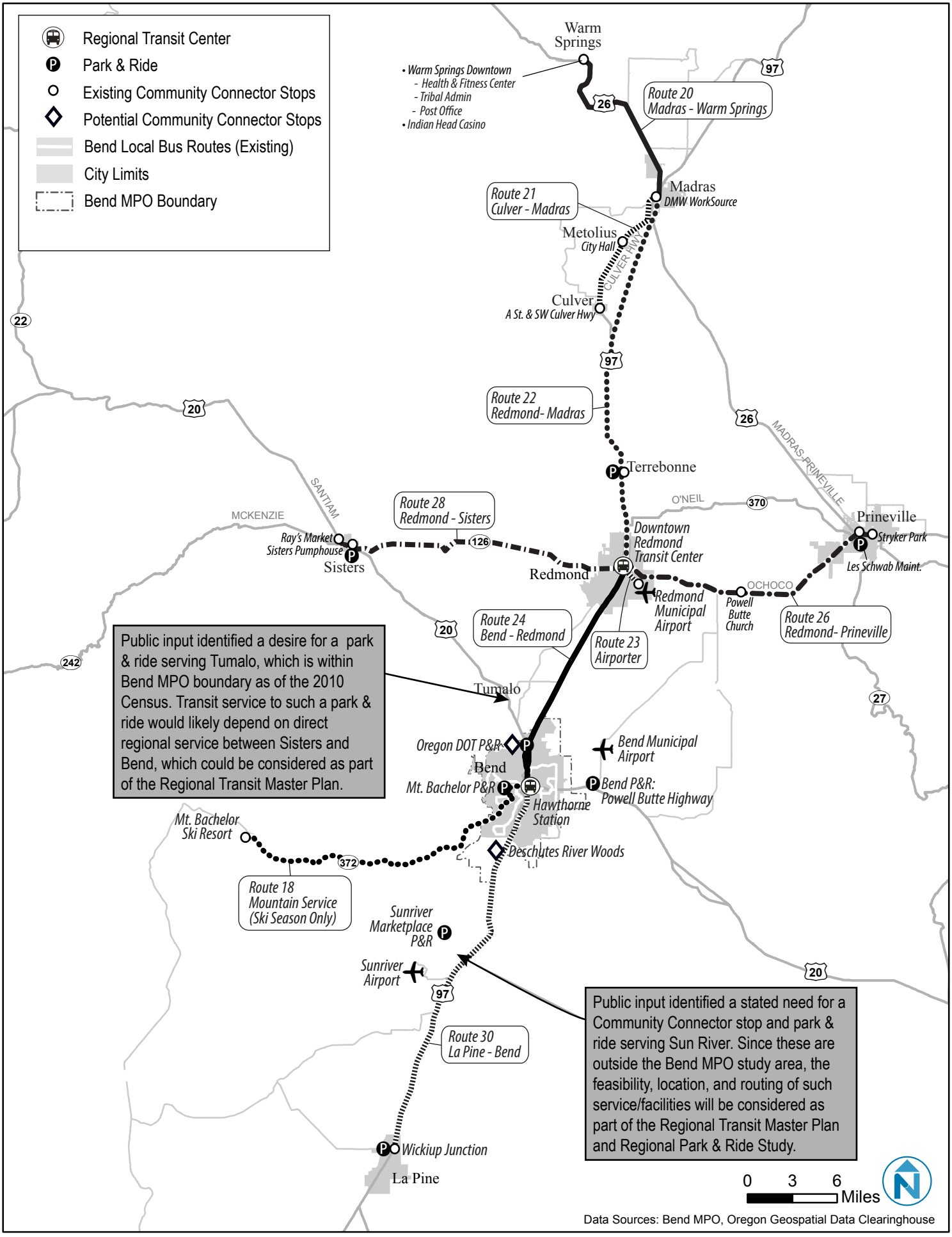


Figure 8-3 Existing and Potential Regional Transit Facilities



Passenger Amenities

Safe and comfortable passenger amenities at stops and other facilities are an important element of any successful transit service. At major transit stops, shelters provide needed protection from inclement weather and sun; seats provide passengers a comfortable option while waiting for transit; and trash receptacles ensure that the stop remains clean and attractive. Route/time information should also be posted at every stop. Higher-end station amenities include bicycle parking and real-time bus arrival information to let passengers know when their bus will arrive.

Thresholds for Investments in Stop Amenities

Figure 8-4 provides recommended thresholds for investing in stop amenities at transit facilities, including three tiers of improvements ranging from a basic package of amenities at a neighborhood stop to shelters and higher-end amenities and upgrades at high-demand stops and transit hubs.

Figure 8-4 Bus Stop Tiers and Investment Guidelines

	Tier 1: Basic Neighborhood Bus Stop	Tier 2: Major Bus Stop with Shelter	Tier 3: Enhanced Bus Stop
Examples of Uses	Typical stop in Bend with a concrete pad, seat, route sign, map/schedule, and information in Braille	High Use Stops, Minor Park & Ride, Transfer Points	Transit Centers, Major Park & Ride, Secondary Hubs
Threshold for Prioritizing*	Low = <25 Daily Boardings	Medium = 25-49 Daily Boardings	High = >50 Daily Boardings
Estimated Cost	$1,900[a]	$6,200 [a]	$10,200 [a] - $30,000 [b]
Required / Preferred Elements	▪ Basic seat desired but not required ▪ Benches at high-end of boarding range ▪ Posted route/time information ▪ Meets ADA requirements (e.g., pad) ▪ Good pedestrian access desirable	▪ Shelter/Seating ▪ Posted route/time information ▪ Good pedestrian access preferred (sidewalk, curb ramps, etc.)	▪ High capacity shelter(s) ▪ Enhanced signage and maps ▪ Lighting ▪ Excellent pedestrian and bicycle access (e.g., protected crossings)
Optional Elements		▪ System map ▪ Bicycle parking	▪ Real time bus arrival information ▪ Secure bicycle parking and/or bicycle sharing ▪ Public art
Existing Local Examples	 Franklin Avenue	 COCC	 Hawthorne Station

* Based on available funding for facility improvements.

Sources: Costs from (a) Cascades East Transit, 2012. Actual costs. (b) Nelson\Nygaard order-of-magnitude estimate. Photos from Nelson\Nygaard

ACCESS

This section focuses on the importance of providing safe and convenient pedestrian and bicycle access to transit. Improving the actual and perceived safety of accessing transit is an essential complement to the quality of transit service and facilities, particularly for attracting choice riders to the system.

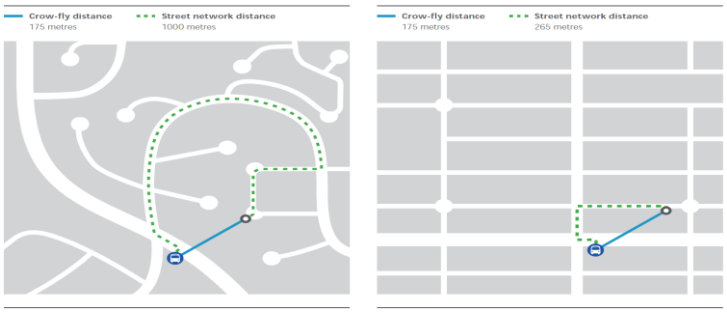
Pedestrian Access to Transit

Most transit trips begin and end with a walking trip, and walking is the primary means of accessing transit in Bend (about 90% of passengers). This makes the pedestrian environment along transit routes critical to encouraging use of transit, particularly for riders who have other options. In general, most transit riders are willing to walk about a quarter-mile to access a bus stop. About 30% of Bend residents live within a quarter-mile of the existing transit system based on network walking distance, which takes street connectivity and physical barriers into account, and 60% live within a half-mile network walking distance. The Federal Transit Administration (FTA) formally defines the pedestrian catchment area for transit as a half-mile radial distance from a transit stop.[20]

Access from the starting point or final destination of a trip to/from the nearest transit stop also needs to account for other barriers to walking including hills and presence of sidewalks and other infrastructure to allow convenient access to/from the transit stop nearest a particular location. Improving and installing sidewalks, ensuring curbs and stops are ADA-accessible, and enhancing the walking environment along key transit streets improves the attractiveness and viability of transit for more users and more types of trips. Several important characteristics of good pedestrian access to transit include:

[20] https://www.federalregister.gov/articles/2011/08/19/2011-21273/final-policy-statement-on-the-eligibility-of-pedestrian-and-bicycle-improvements-under-federal#h-17

- **Direct.** There should be a continuous and connected network of streets, sidewalks, and other types of pedestrian accessways that provide efficient walking routes.



Source: TransLink, Transit-Oriented Communities

- **Accessible**. Sidewalks must be barrier-free and have curb ramps at intersections. Transit riders with mobility impairments need a clear end-to-end sidewalk path from their front door to the bus stop.

Source: Seattle Department of Transportation

- **Safe**. Street crossings must serve transit stops on both sides of a street. There should be ample lighting along the street and at stations and clear lines of sight. Protected crossings (e.g., pedestrian signal and/or median) are critical on multi-lane arterials with fast-moving traffic.

Source: Flickr, Richard Drdul

- **Comfortable.** Seating and shelters enable a comfortable wait at stops. Shelters should provide protection from wind, rain, and sun; offer clear sight-lines and visibility; and accommodate all riders including those in wheelchairs. Prominent, inviting stops/shelters also advertise the presence of transit service on a street.

Source: Duo-Gard Industries

- **Visually engaging.** Studies have shown that people are willing to walk farther on streets that have active, street-facing buildings and vibrant street life.

Source: Bend MPO

Bicycle Access to Transit

Bicycle infrastructure that links into and along transit corridors and station areas helps transit riders connect to transit and extends transit's reach. Bicyclists are typically willing to travel at least 1.5 miles to access transit and up to 3-4 miles to access high-quality transit or regional connections. The Federal Transit Administration (FTA) formally defines the bicycle catchment area for transit as a three-mile radial distance from a transit stop.[21]

Networks of low-stress and high-visibility bicycle facilities—such as off-street bicycle paths, neighborhood greenways, and cycle tracks/buffered bike lanes—are a critical component of bike/transit integration. Secure bicycle parking at the main transit center and secondary transit hubs or other major stops on the periphery of the fixed-route system help make bicycling an attractive means of accessing transit.

Pedestrian and Bicycle Access Improvements

This section discusses specific corridors or areas where pedestrian and bicycle access can be improved.

Greenwood Avenue Pedestrian Access and Safety

As discussed in Chapter 7, pedestrian improvements would be required along Greenwood Avenue to support the proposed Route 7:

- Pedestrian accessways would need to be created from Bear Creek Road to stops along Greenwood, at locations including NE 12th Street and one to two locations between 15th Street and Dean Swift Road. See Figure B-16 (Appendix B) for a map from the Bend TSP that shows existing/planned connections).
- Protected crossings would need to be created to allow safe crossings to each stop location on Greenwood. Where signalized intersections are not

Rectangular Rapid Flashing Beacon (RRFB) at Greenwood Avenue and 12th Street. As at this crossing, on four-lane arterials it is important to provide a raised median with pedestrian refuges.

Source: Bend MPO

[21] https://www.federalregister.gov/articles/2011/08/19/2011-21273/final-policy-statement-on-the-eligibility-of-pedestrian-and-bicycle-improvements-under-federal#h-17

warranted or appropriate, a rectangular rapid flashing beacon (RRFB) crossing is one type of crossing which may be implemented; such as at Greenwood Avenue and 12th Street as shown on the previous page. At least one RRFB would be needed between 15th Street and Dean Swift Road.[22] A signalized intersection may be warranted at Dean Swift Road, although it is only about 0.10 miles west of a signal at Purcell Boulevard. West of the RRFB at 12th Street, there is a signalized intersection at 8th Street and an RRFB is planned at 6th Street.[23]

Hawthorne Station Pedestrian Safety

Buses currently stop and layover on both sides of Hawthorne Avenue between 3rd and 4th Streets. This block is also open to general vehicle traffic and potential pedestrian safety issues include:

- Transit riders transferring between buses or accessing the transit center generate significant pedestrian activity across Hawthorne Avenue.
- Buses block passenger sight lines and passengers hurrying to catch their bus may not be attentive to cars traveling on the street.
- There is an exit from the Safeway shopping center just west of bus stops on the south side of Hawthorne.

The additional routes and increased frequency and hours of service recommended in this plan will increase bus and pedestrian activity on Hawthorne in the future. Further study is recommended of pedestrian and circulation improvements to increase the safety of the on-street transit center. Such improvements could include:

- Closing Hawthorne to non-transit vehicle traffic between 3rd and 4th Streets, creating a transit mall.
- Developing a mid-block crossing with safety features such as a raised crossing, embedded pavement lights, etc., to visually alert drivers to the presence of pedestrians.
- Evaluating and optimizing need for/provision of on-street parking relative to transit operational requirements on 4th Street between Hawthorne and Greenwood Avenues.

[22] City staff have envisioned an RRFB in this vicinity, potentially at the Azure Drive intersection (not included in any formal planning document).

[23] A pedestrian crossing at Greenwood/6th Street is on the City's Fiscally-Constrained SDC Project List. Table C-1 (Amended),

There are potential conflicts between pedestrians and cars using Hawthorne Avenue at the transit center, shown looking west towards 3rd Street. Increased transit frequency and additional routes will increase the potential for conflicts. The car in the photo is turning out of the Safeway parking lot.

Source: Nelson\Nygaard

Additional Pedestrian Safety and Access Improvements

Although not specified in detail in this plan, additional locations of pedestrian safety concern for community members that were identified through public input are illustrated in the Community Input section of the Existing Conditions memo, including locations along 3rd Street.

Bicycle Access Improvements

Figure 8-4 identifies the stop/station location types where supporting bicycle facilities such as covered or secure parking, potential future bike share stations (see Bicycle Sharing sidebar), and other end of trip amenities may be most appropriate. Figure 8-2 illustrates several such locations on a map.

Bicycle Sharing

A bicycle sharing system consists of bicycle rental stations located throughout a downtown or city. Bicycle sharing is intended to facilitate short, urban trips and make active transportation options more readily available. Of importance for transit, bicycle sharing enables first- and last-mile connections to/from destinations beyond convenient pedestrian access from the bus stop or where it is not practical or convenient to bring a bike on an end-to-end transit trip.

There are a variety of models for implementing a bicycle sharing system.* Most modern systems provide a self-serve parking station where bikes can be rented and returned. Emerging technologies include "station-less" systems, where GPS and wireless communications (e.g., cell phones) allow a bike to be rented and returned in any location within the service area. Bike sharing system examples in cities most comparable to Bend (both have larger student populations) include:

Bike sharing system in Boulder, CO

Source: Flickr user kai.bates

- Boulder, CO. The Boulder B-Cycle system is free for the first half hour. It charges $4 for each additional half-hour period, $5 for a 24-hour period, or $55 for an annual pass.
- Pullman, WA. The Green Bike system serves Washington State University. It offers free same-day rentals for students and faculty and offers daily rentals for up to 7 days, starting at $3.50 per day for members.

Support for Bike Sharing in Bend

In an online survey of Bend residents, workers, and students conducted as part of this project:

- 77% of respondents stated that they would use a bike sharing service in Bend as part of a transit trip.
- 55% of respondents stated that they would use such a service in general.

Notes/Sources: * FHWA, Bike Sharing in the United States: State of the Practice and Guide to Implementation, 2012. http://www.bicyclinginfo.org/promote/bikeshareintheus.pdf

TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) is a term for strategies that increase overall transportation system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to other means of travel such as transit, bicycling, walking, and ridesharing. This increase in system efficiency can also be achieved by eliminating SOV trips, or by shifting auto trips out of peak periods when roads are most congested. TDM strategies work to reduce reliance on automobiles by:

- Improving travel options
- Providing incentives and information to encourage and help individuals change their travel behavior
- Providing infrastructure to help people change their travel behavior

Categories of TDM Strategies

Improved Transportation Options

- Biking and walking
- Transit and ridesharing

Incentives to Use Alternative Modes

- Universal transit passes
- Telework and flexible work schedules
- Road and parking pricing
- Road space allocation (bike lanes, transit-only lanes)
- Commute Challenges

Parking Management and Land Use

- Parking cash-out programs
- Priority parking for carpools & vanpools
- Land use management
- Mixed-use development
- Increased densities in transit corridors

In the context of public transportation, simply providing transit service is often not enough to encourage people to use transit. TDM strategies—including subsidized transit passes, a Guaranteed Ride Home program, and vanpool options that connect with regional transit service—can provide complementary options to increase the use of transit service.

Universal Pass Program

Universal transit passes are an effective means to reduce the number of car trips in an area. By removing barriers to using transit, including the need to search for cash for each trip, people become more likely to take transit for both work and non-work trips.

Cascade East Transit Group Bus Pass Program

CET provides a Group Pass Program where employers (or other organizations) consisting of 10 or more individuals can purchase transit passes at a discounted cost. The employer enters into an annual contract to purchase a pass for its employees at the discounted rate. The employer/organization can offer passes to employees for free or at a reduced cost. In this way, the cost per person for the service is significantly reduced, and ridership within the group can be expected to increase significantly. COCC is a major user of the group pass program and offers a Zone 1 pass to students for $10 (normally $30) or a Multi-Zone pass for $60 (normally $100).

Guaranteed Ride Home Program

A Guaranteed (or emergency) Ride Home Program typically supplements a TDM program. This type of program provides commuters who regularly carpool, vanpool, bike, walk, or take transit to work with a free and reliable ride home when an unexpected emergencies arises. Guaranteed Ride Home programs help commuters view use of public transit and other non-SOV travel options to get to work as a more dependable option.

Commute Options Programs

Commute Options promotes transportation options in Central Oregon. Its programs include:

- Partnerships with local businesses on various transportation option incentive and promotion programs.
- Rewards from local businesses for commuting completed by modes including walking, biking, car/vanpooling, and public transit.
- Commute Options Week
- Facilitating car/vanpooling, including local administration of the statewide Drive Less Save More campaign. The Drive Less Connect tool (https://drivelesssavemore.icarpool.com) helps facilitate carpool matching.
- Safe Routes to School programs

Vanpool

Vanpools typically work best for employer markets whose commuters travel mid- to long-distances. A national study estimates that nearly 8% of commuters who live more than 15 miles from work and work for employers with 100+ employees are potential candidates for vanpooling.[24]

The impetus for people to join a vanpool depends on several factors, including traffic congestion, land use, and availability/cost of parking. Vanpools can also provide a relaxing way to travel, since the passengers have time to read, work, sleep, and socialize. For regional commutes in Central Oregon, the primary monetary incentive to use vanpools is likely to be the cost of gas.

[24] FDOT Research Center. Vanpool Pricing and Financing Guide. http://www3.cutr.usf.edu/tdm/pdf/Vanpool_values.pdf

There are three basic models for vanpool service

- **Owners/Operators:** Individuals buy/lease a vehicle directly; affordable insurance and adequate coverage are major issues with this type of vanpool.
- **Employers:** Companies buy/lease vehicles for use by their employees.
- **Private Operators**: Third-party vanpool providers such as VSPI and Enterprise operate vanpools for commuters, companies, and government agencies. This is the primary model for vanpools in the U.S., including in Central Oregon.

In Bend, Commute Options and CET could coordinate vanpools with regional Community Connector schedules at the Hawthorne Station (or future secondary transit hubs) to provide service to employment areas in Bend that are not currently served by fixed-route transit, or to dispersed employment sites outside city limits, such as Bend Municipal Airport. The map of work locations in Bend provided in Figure 2-16 illustrates work locations in relation to transit routes.

Transportation Management Associations

Transportation Management Associations (TMAs) are often member-based organizations that offer customized commute planning, commute benefits consultations, and information on ridesharing, transit, and non-motorized transportation to businesses in a defined geographic district. TMAs partner with governments and transit agencies to develop programming, marketing, and incentive programs for employers and employees alike. These organizations represent opportunities to broaden the reach of TDM programs and bolster the effectiveness of individual employer efforts. TMAs typically work best in concentrated geographic areas, such as downtowns, college campuses, or other employment clusters. CET and Commute Options currently provide some of these functions to employers, including travel training, distribution of commuter tax benefit information, and implementation of special transit programs, such as a Group Pass Program.

MARKETING AND BRANDING

This section highlights the importance of marketing and branding elements and offers suggestions for improving marketing and branding of CET services in the Bend area. Marketing for transit generally refers to information and collateral that lets transit customers know how to use—and remember how to use—transit services. Branding relates to a name or logo that identifies the transit services offered in the community. If transit were treated like a commodity, effective branding ensures that the community not only recognizes what the brand represents, but that individuals have positive and memorable experiences with that brand. Marketing then refers to reinforcing the brand and ensuring that information on how to use transit is readily accessible, understandable, and easy to remember.

Marketing and branding is only one feature of a successful transit system. However, good information and strong system legibility is critical for people who may be learning how to use transit for the first time, as well as for long-time users. Because many people in the community may never have used transit, effective branding and marketing of the system might be the only impression they have of transit services available.

Branding of the System

This section provides a high-level assessment of Cascades East Transit's marketing and branding initiatives in the Bend area.[25] Transit services in the Bend area are presented to the public as Cascades East Transit, or CET. The CET logo (shown at right) is colorful and simple, effectively communicating to the public that it is an established part of the transportation system.

The CET brand is used on all printed marketing materials, including on the CET system brochure, individual route schedules, on the website, and on most transit vehicles. The CET brand also portrays a regional system—one that does not just provide service in Bend, but also throughout central Oregon. This is a strength of the CET brand, and like other regional transit providers, will eventually be synonymous with transit in central Oregon—much like TriMet in the Portland area or LTD (Lane Transit District) in Eugene. One recommendation for improvement related to the brand is:

[25] This does not include a full assessment of the entire CET system, but many of the observations and considerations presented for Bend could also be applicable to all CET marketing and branding initiatives.

- **Fully transition to the CET brand system-wide.** While the CET brand is well-used to represent the transit service in Bend, some remnants of Bend Area Transit (BAT) still exist, which could create confusion among some users (new and old). This includes some buses and stops that are still branded as BAT, as well as bus stop signs that have both CET and BAT on the sign (see photos at right and below). It is recognized that completing the transition from BAT to CET will take time, and money, but this should be one of CET's highest priorities related to information and branding. This is reflected in a recent community survey in which 84% of Bend residents surveyed who could name the local transit system identified the services in Bend as BAT.[26]

Figure 8-5 Comparison of CET and BAT Branded Signage and Vehicles

CET or Transitional Branding

BAT Branding

[26] Only 60% of respondents to the Community Preferences Survey conducted for the Central Oregon Regional Transit Master Plan (RTMP) could name the transit system without being prompted. Of those who could name the transit system, 84% said BAT and 16% said CET or Cascades East Transit.

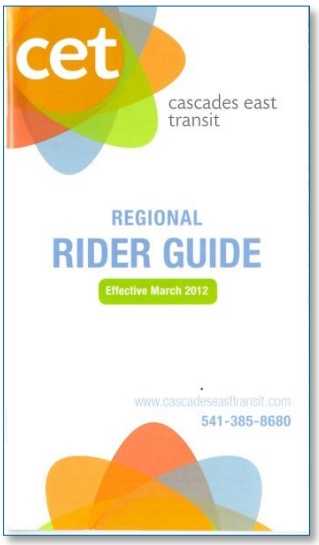
System Information

Perhaps the most visible aspect of the CET system—besides the buses and bus stops—is the printed and electronic information that describes how to navigate the system. This includes all printed materials such as brochures, maps, flyers, fare media, etc. This also includes all information that is available electronically—either through the CET website or another online source (such as Google Transit).

Maps and Schedules

CET's primary source of printed information is its Regional Rider Guide. This 4" x 7" guide provides all relevant information on the fixed-route services in Bend, as well as regional Community Connector service and the local community bus services that CET operates in cities outside of Bend. The Rider Guide is an attractive, easy-to-use reference that is a convenient carrying size. The front section of the Guide includes a fold-out map of the CET services in Bend, followed by individual route maps and schedules for each route.

All route information and schedules are clearly presented in the Guide, along with schedules and key activity centers along each route. Most of the individual routes—identified by numbers—also have a major street associated with that route, which conveys important directional information to passengers. For example, as shown in Figure 8-6, Route 4 is identified as "Route 4 - North 3rd Street, which quickly indicates that this route serves the North 3rd Street corridor. Most of the schedules include a beginning and ending destination, such as Hawthorne Station, Cascade Village, St. Charles Medical Center, etc., and these destinations are clearly indicated on the corresponding route maps. Similarly, most routes and schedules are presented as inbound and outbound segments. This additional information makes it easier for passengers to understand how each route operates and how to read the schedule. Some routes, however, such as Route 3 (see left panel of Figure 8-6) and Route 6, do not include the inbound/outbound designation, nor do they include an end location. Route 3, in particular, has a strong destination at the end of the route (COCC) that could be more clearly identified on the route schedule.



Other information about the route, such as Saturday service hours, snow schedules, and major timepoints, are clearly presented in the brochure. As shown in Figure 8-6, major timepoints listed in the schedules are assigned a letter that is

used to clearly illustrate the timepoint location on the route map. The Rider Guide also includes some basic information in Spanish, such as how to board and alight the bus, pay the fare, and transfer between routes. It is assumed that if a Spanish-speaking rider calls the main number (541-385-8680), they will be able to speak to a Spanish-speaking representative.

Several potential improvements to the Rider Guide include:

- **Include basic Bend Dial-A-Ride information.** Not all people who use the Rider Guide will exclusively be using fixed-route service in Bend, or they could be interested in other transit options in the future (or for friends/family members). As such, including some basic information about the Bend Dial-A-Ride service should be included in the Guide. This could be as simple as a few sentences about the service and eligibility requirements, as well as a phone number for more information (the CET website does provide basic information about Bend DAR).

- **Color-code individual routes and schedules.** Like the CET website, the individual routes should be color-coded (if it is possible to do so cost-effectively) to match the route map on the Bend Service Map and other signage. This would make it easier to identify the appropriate route and will reinforce the color-coding of the system that is already present on bus stop signs and on the system map.

- **Be consistent with route naming conventions.** Not all routes are presented as inbound and outbound segments, and not all routes are associated with a major destination (e.g., St. Charles, Cascade Village, etc.). To be consistent between routes, schedules should be presented as inbound and outbound segments, and each of these segments should include a major destination or terminal point for each segment. For example, Route 3 should have an outbound designation and the major destination at the end could be "to Summit HS/COCC."

- **Be consistent with "micro-information" on all routes.** One nice feature, which is only presented on the Route 6 schedule, is a list of important phone numbers along that route (e.g., Bend Senior Center and Bend Municipal Court). Not only is this information helpful to riders, but it also encourages riders to use the transit guide for other purposes, which could make them consider using transit for trips they may otherwise make on another mode. It is recognized that space in the Guide is limited, and so this could only be provided where space exists.

Electronic Information

The primary source of electronic information for transit services in Bend is the dedicated website www.cascadeseasttransit.com. This fairly comprehensive site includes most of the same information provided in the Regional Rider Guide, as

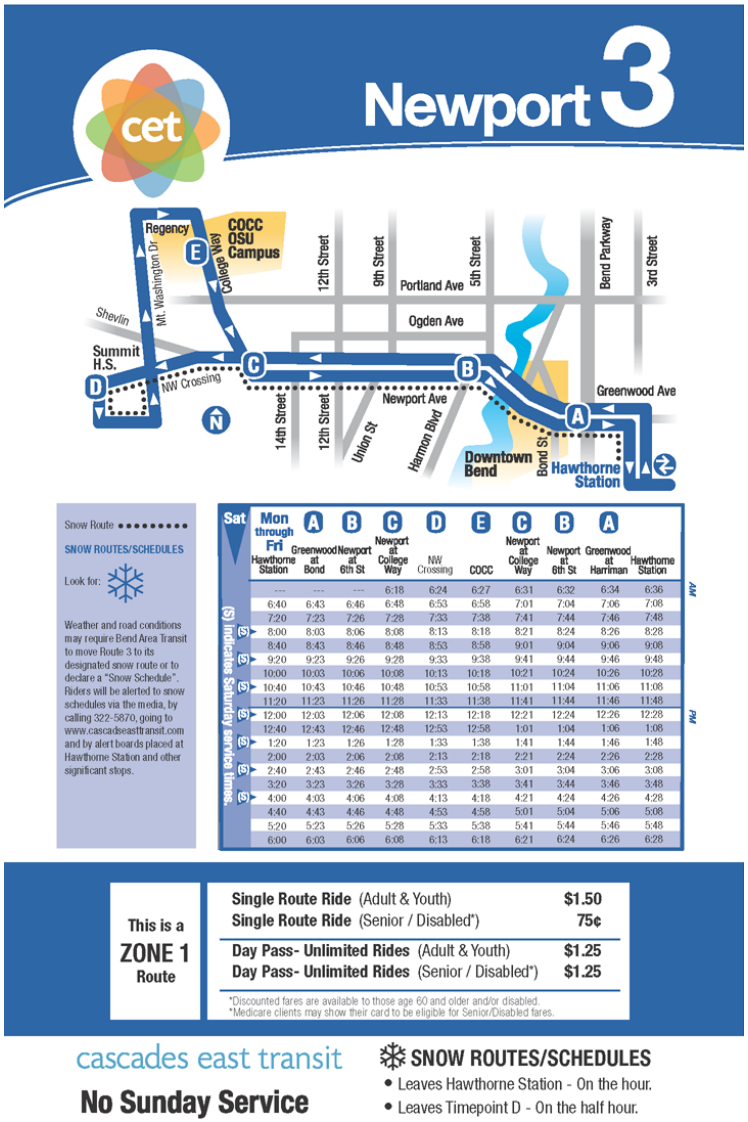
well as additional elements such as news and updates, service alerts, and route-by-route information real-time information about service delays. The website design functions well on a mobile device. The website also includes some basic information on other programs offered by CET or COIC, like the employer group pass program, advertising and travel training. Like the Regional Rider Guide, the website provides some information in Spanish, as well as information about other transportation or transit providers in the region.

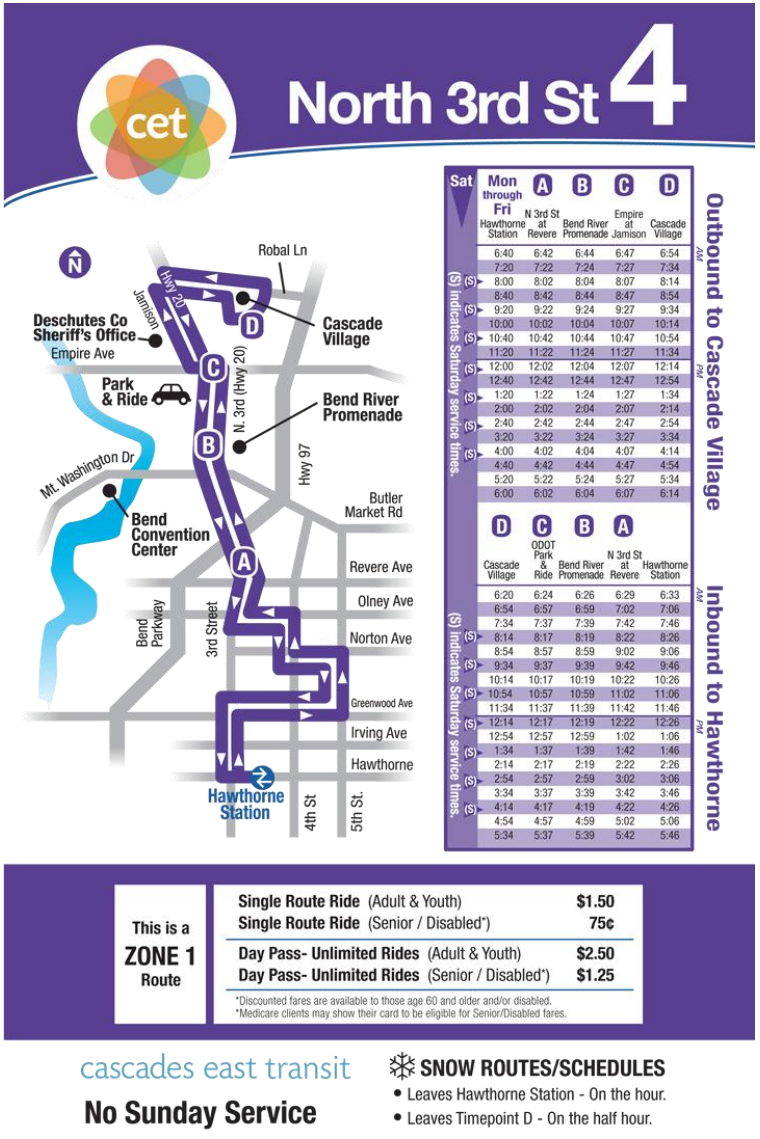
Possible improvements to the website include:

- **Provide links to other regional transportation/transit providers on the Programs → Commute Options page.**[27] Like the link to the Mt. Bachelor Shuttle page, each listing for other services, e.g., the COCC Campus Shuttle, should have a direct website link. In addition, it would be preferable to open these links in a separate window or tab, rather than taking users away from the CET website.
- **Add information to the Programs → Planning page.** Blank pages are generally discouraged on websites. In the case of planning projects, it is better to not provide a page than to provide a page with no information. It is suggested that this page simply be removed until information is available.
- **Explain travel training.** Rather than just provide contact information on the Programs → Travel Training page, it would be helpful to provide a brief explanation of what travel training is and why it is valuable.
- **Consider a Facebook or Twitter page.** Social networking sites are quickly becoming an additional way to reach transit riders. While social networking sites have limitations (they should not be used to replace the basic information on the website), they can be valuable for making service announcements, announcing special events/services, or just communicating with riders. Given that about a third of riders in Bend are age 24 or younger, social media could be a particularly effective means of engaging with this ridership segment. Social networking sites can also provide a more "human" face to the agency by allowing riders to interact directly with CET staff. It should be cautioned that if a Facebook or Twitter page is established, it will require regular attention and monitoring.

[27] http://www.cascadeseasttransit.com/commute-options.html. In addition, it would be helpful to add "Commute Options to the horizontal menu bar drop-down under Programs.

Figure 8-6 Sample of Existing CET Route Maps and Schedules (Website Versions)





Fare Information

Fare information is very clearly presented both in the Regional Rider Guide and on the website. The zonal system and fares associated with the different fare media are clearly presented. No improvements to fare information are necessary.

Accessibility Information

While the type in the Rider Guide is small in order to keep all information in a compact brochure, it may be difficult for some users to read. But, CET should be commended for complying with the ADA by providing information in alternate formats (large print, Braille, audio tape) on request. It is assumed that this information remains up-to-date and is consistent with updates to the Regional Rider Guide.

The website includes some elements that would be easier to access for people who require a text web browser. For example the maps do not appear to have a <title> attribute that provides additional information about an element. The <title> attribute allows users to put their mouse over the map and see information about where that link will take them. This is especially important for text web browsers, which rely on title attribute tags to navigate images.

9 IMPLEMENTATION

OPERATING AND CAPITAL COST ESTIMATES

Operating Costs

Figure 9-1 provides operating costs associated with each set of service options and time frame. The long-term options are designed as a flexible set of service options that can be implemented incrementally based on available funding, future priorities, and service/land use targets. The full long-term cost implies that there is 15-minute service on all primary corridors and 30-minute service (either all-day or peak-hour) on most other routes.

Figure 9-1 Operating Cost Estimates, Total and Increase from Current Costs (2012 Dollars)

Time Frame	Option	Total Annual Fixed-Route Vehicle Revenue Hours	Total Annual Fixed-Route Operating Costs	Total Annual ADA Paratransit Costs	Total Peak Fixed-Route Vehicles
Current	Existing System	20,700	$1.5 M	$1.0 M	7
Short-Term	Route 4, 5, 6 Modifications	Neutral	Neutral	Neutral	7
Near Mid-Term	Route 3/11 Changes All-Day & Sat Route 11 One additional evening trip on all routes (up to 1 hour)	24,100 (+16%)	$1.73 M (+$235,000)	$1.06 M (+$55,000)	7
Mid-Term	Initial 30/60 Restructuring with some enhancements	32,900 (+59%)	$2.37 M (+$880,000)	$1.11 M (+$110,000)	9 (+2)
Long-Term	30/60 Minute Restructuring with all enhancements [1]	78,700 (+280%)	$5.7 M (+$4.2 M)	$1.28 M (+$280,000)	20 (+13)

Notes: Based on planning-level estimates. Cost increases listed are relative to current costs. (1) Long-term improvements are designed to be implemented incrementally and increased service levels (particularly 15-minute service) would be conditioned on service design guidelines.

ADA Paratransit Costs

The Americans with Disabilities Act (ADA) of 1991 requires that complementary ADA paratransit service (i.e., Bend Dial-A-Ride) offer ADA-eligible customers door-to-door service between origins and destinations located within ¾-mile of regular fixed-route transit services. Bend DAR already provides geographic coverage within Bend city limits, exceeding ADA requirements, therefore no increase in ADA costs is assumed for service coverage expansion within Bend city limits. Bend DAR currently operates seven days a week, however, expanding the hours of fixed-route service beyond existing hours of ADA paratransit service will result in increased DAR operating costs beyond the current approximately $1.0 million in annual costs.

Order-of-magnitude estimates of this increase were developed, based on assumptions for the number of DAR vehicles that will need to operate in different time periods. Implementing early evening service is estimated to increase ADA paratransit costs by about $55,000 annually for each additional hour, or a total of $110,000 (+11%). Expanding early morning, later evening, Saturday, and Sunday service hours is estimated to cost about $170,000 annually (+17%), or a total of about $280,000 (+28%). Appendix B provides a more detailed breakdown of the estimated increases in ADA paratransit costs.

Peer Comparison

To assess the current level of service and level of expenditures on transit in Bend, it was compared to a set of peer cities from around the western U.S., ranging from about 50,000 to 150,000 in population and without a large college or university.[28] Bend is approximately in the middle of the group in terms of population density. Although it has a large university, Corvallis was included because it is a comparable city in terms of population and is also located in Oregon. Peer data is summarized in Figure 9-2. Key findings from this comparison include:

- Bend has the second-lowest current transit service hours per capita, the lowest transit operating spending per capita, and the lowest level of current rides per capita.
- Placing Bend's per capita ridership (four rides per capita) in context, national research estimates a range of three to five rides per capita for a new system. This has been achieved with a level of service that is at the low-end of the peer group. With the initial restructuring concept (mid-

[28] With the exception of Corvallis, these cities were originally used in a 2006 service plan to estimate ridership for the initial Bend fixed-route system.

term) level of investment, Bend would still be in the bottom-tier of the peer group in terms of service hours per capita and operating investment per capita.

- Assuming all of the long-term service improvements are implemented by 2030, Bend would be in the top tier of the peer group in terms of service hours per capita (1.03) and operating cost per capita ($74), assuming current population levels. However, assuming population growth to 110,000 (the projected 2025 level) by 2030, Bend would operate 0.72 revenue hours per capita (compared to the current peer average of 0.60) and operating cost per capita of about $52 (compared to the current peer average of $62).

007909

Figure 9-2 Peer Comparison of Bend Transit Service Provision, Utilization, and Operating Spending, 2012 Dollars

	Service Area Population (2010) [1]	Density (Pop. Per Square Mile)	Total Annual Vehicle Revenue Hours	Annual Vehicle Hours per Capita (2010)	Fixed-Route Annual Operating Costs	Annual Operating Costs per Capita (2010)	Annual Ridership (Unlinked Trips)	Annual Rides per Capita (2010)	Operating Cost per Rider (2010)
Bend	76,639	2,395	20,902	0.27	$1,489,094	$19.43	327,904	4.3	$4.54
Route 3/11 + 6-7 pm (near mid-term)	-	-	24,100	0.31 [a]	$1,735,000	$22.64	-	-	-
Initial Restructuring (mid-term)	-	-	32,900	0.43 [a]	$2,369,000	$30.91	-	-	-
Full restructuring (long-term)	-	-	78,700	1.03 [b]	$5,666,000	$73.74 [b]	-	-	-
Medford, OR	150,000	2,586	33,658	0.22	$4,772,691	$31.82	979,124	6.5	$4.87
Redding, CA	117,478	1,175	43,736	0.37	$3,180,273	$27.07	672,379	5.7	$4.73
Pueblo, CO	105,000	2,692	40,430	0.39	$3,478,182	$33.13	951,123	9.1	$3.66
Yakima. WA	92,035	3,287	54,850	0.60	$5,760,027	$62.59	1,312,116	14.3	$4.39
Santa Fe, NM	76,100	1,856	76,988	1.01	$6,053,701	$79.55	838,841	11.0	$7.22
Everett, WA	105,000	3,088	129,830	1.24	$14,240,792	$135.63	2,289,587	21.8	$6.22
Corvallis, OR	55,125	3,938	26,949	0.49	$2,328,937	$42.25	3,388,516	61.5	$0.69
Peer Average (excluding Corvallis) [2]	**107,602**	**2,447**	**58,063**	**0.60**	**$6,247,611**	**$61.60**	**1,490,241**	**11.4**	$5.18

Notes: (1) Service area population from 2010 NTD for all peers, except Bend population from 2010 U.S. Census. (2) Corvallis is excluded from average due to high student population. (a) Assumes 2010 population, but Bend's population would be higher if/when these service levels are realized. (b) Assuming the full set of long-term improvements is realized by 2030 and Bend's population is 110,000 (the current 2025 projection), vehicle hours per-capita would be 0.72 and operating costs per capita would be about $52.

Source: National Transit Database, 2010. U.S. Census, 2010.

Capital Improvements

The primary capital improvements related to each service option include additional vehicles or installation of new stops. Figure 9-3 identifies overall capital cost estimates for each service package and time frame. Appendix B provides a more detailed breakdown of operating and capital cost estimates for individual service elements.

- Short-term costs are related to changes to Routes 4, 5, and 6. Initial implementation can be made using one additional temporary stop and existing temporary stops on 5th Street, but the costs assume permanent infrastructure. CET has an agreement with the ADA community that allows for temporary stops to be implemented contingent on a stop improvement plan for design and construction of permanent, accessible stop infrastructure.
- Near mid-term costs are related to stop infrastructure for restructuring Route 3 and 11 to serve the new OSU facility, but no additional vehicles are required.
- Mid-term (initial restructuring) capital costs include two additional vehicles to operate the new Route 7 (low-floor recommended including for Route 3 interlining) and operate 30-minute peak headways on Route 4, permanent stop infrastructure for Route 7, and stop infrastructure for bidirectional Routes 5 and 6.
- Long-term costs include increased frequency on additional routes and service expansion (Routes 2, 4, and 8).

Figure 9-4 provides a more detailed 10-year capital plan, also addressing vehicle replacement needs.

Figure 9-3 Overall Capital Cost Estimates for Service Packages (2012 Dollars)

Time Frame	Option	Peak Vehicles	Additional Vehicles Required	Estimated Cost of Additional Vehicles[1]	Estimated Non-Vehicle Capital Improvements
Current	Existing System	7	0	None	N/A
Short-Term	Route 4, 5, 6 Modifications	7	0	None	$12,000 [a]
Near Mid-Term	Route 3/11 Modifications	7	0	None	$68,000 [b]
Mid-Term	Initial 30/60 Restructuring with some enhancements	9	2	$540,000 [c]	$116,000 [c]
Long-Term [1]	30/60 Minute Restructuring with all enhancements [1]	20	11	$2.5 M [d]	$266,000 [d]
TOTAL		**20**	**13**	**$3.1 M**	**$462,000**

Notes: Appendix B (Figure B-12) provides unit costs. (1) Intended for incremental implementation over the long-term, conditional on service design guidelines. (a) Assumes 1 major and 3 basic stops. (b) Assumes 6 major and 16 basic stops. (c) Assumes 2 new low-floor buses for Routes 7 and 3. For Route 7, assumes 10 major and 4 basic stops. Additional costs would include a planned crossing at 6th and Greenwood, at least one new protected crossing on Greenwood between 15th and Dean Swift, and a potential signal at Dean Swift. For bidirectional Route 5/6, assumes 11 basic and 4 major stops. (d) Assumes 6 new low-floor and 5 standard mid-size buses. Assumes 10 new major stops, 50 new basic stops, 5 enhanced stops (e.g., secondary hubs), and enhancements at Hawthorne Station.

TRANSIT FUNDING STRATEGIES

Additional information on potential transit funding options is provided in Appendix C

As discussed above, transit operating costs for the existing fixed-route system in Bend are approximately $1.5 million annually, not including about $1 million in costs for ADA Paratransit (Bend Dial-A-Ride). The initial implementation of the restructured system and service improvements proposed for the mid-term time frame (4 to 10 years) is estimated to cost (in 2012 dollars) an additional $880,000 in annual fixed-route operating resources, $110,000 in additional ADA paratransit costs, and $540,000 for additional vehicles (assuming low-floor buses). The short- and mid-term improvements (up to 10 years) would also require an estimated capital investment of about $196,000 (in 2012 dollars) for bus stops and related infrastructure.

A variety of federal and state funding sources are available to help fund these improvements, but in many cases must be leveraged with a local match. The City of Bend currently provides a primary source of local matching funds through its general fund, which the City has committed to providing through September 2015. State funds are also an important source of local matching funds. A number of public-private partnership opportunities (such as advertising, group passes, and sponsorships) each offset only small portions of the cost of operating transit, but collectively are an important component of transit funding.

This section provides an overview of the primary existing and potential funding sources for transit, including federal, state, and local sources as well as public-private partnerships, and summarizes their potential applicability for Bend; Appendix C provides additional details on existing and potential funding sources.

Federal Funding Sources

Federal funding currently comprises about 37% of Bend transit funding. The recently enacted Moving Ahead for Progress in the 21st Century Act (MAP-21) legislation provides a new structure for federal funding programs and is effective from October 1, 2012 through the end of federal fiscal year (FY) 2014. Increased funding for transit is available for local and/or regional transit in the Bend area as a result of population growth (reflected in the 2010 U.S. Census) and MAP-21. The following formula-based programs for urbanized areas in federal FY 2013 are relevant to Bend; unless otherwise noted, these programs require a 20% local

match for capital assistance and a 50% match for operating assistance (if applicable):[29]

- **Urbanized Area Formula Program (FTA Section 5307)**. This program is primarily intended to fund fixed-route operating or capital costs and consolidates several previous programs. The estimated Bend Urbanized Area apportionment for federal FY 2013 is about $1.16 million, an increase of over $450,000 from current 5307 funding, offset by the discontinuation of discretionary grants provided under the Jobs Access Reverse Commute (JARC) program (nearly $90,000 in FY 2013).[30] This reflects the new MAP-21 program structure[31] and apportionment formulas as well as the increase in the Bend-area population based on 2010 Census data. A 20% local match is required for capital and a 50% local match for operating expenditures. Up to 10% of 5307 funds can be applied to preventative maintenance or ADA Paratransit service and matched at 20%.
- **Enhanced Mobility for Seniors and Individuals with Disabilities Program (FTA Section 5310).** This program provides funding for services to seniors and persons with disabilities that go beyond traditional fixed-route services and ADA paratransit. It also consolidates several existing programs and can now be used for operating costs in addition to capital costs. The State of Oregon (ODOT) allocates these funds to small urban areas and the Bend area will receive over $266,000 in 5310 funds for the federal FY 2013 and FY 2014 biennium, an increase of about $57,000 over the two-year period. In general, this funding source requires a 20% local match for capital and a 50% local match for operating expenditures, however only a 10.27% match is required for purchased transportation services, which applies to all current 5310 funding.
- **Bus and Bus Facilities Formula Grants Program (FTA Section 5339).** This is a new funding program that funds capital expenses related to vehicles and facilities, replacing an existing grant-based program. Bend would receive funds based on a formula (making funding more predictable from year-to-year), estimated at about $122,000 for federal FY 2013.[32]

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[29] Funding in federal FY 2013 (10/1/2012 – 9/30/2013) may not correspond directly to the CET FY 2013 fiscal year; it may fund transit in the Bend Urbanized Area during COIC's FY 2014 (7/1/2013 to 6/30/2014).

[30] MAP-21 eliminated JARC as a separate program and JARC funds are now included in the overall 5307 funding allocation; Bend received nearly $90,000 in grant-based JARC funding in CET FY 2013.

[31] Formula funding from the 5340 (Growing States and High Density States) and Job Access and Reverse Commute (JARC) programs is now included in the 5307 program.

[32] Funding for this program is about $6.7 million for all small urban areas in Oregon (allocated by ODOT). Specific allocations are not known at this time but it is estimated that about $122,000 would be available for the Bend area, based on the total Oregon small urban area funding and Bend's share of all Oregon small urban area 5307/5340 formula funds.

Funding may be pooled for multiple years, which would be required for the purchase of some vehicles, e.g., a standard mid-size bus costs over $160,000 while a low-floor bus is estimated to cost about $270,000. This funding source requires a 20% local match and is only eligible for capital expenditures.

Additional federal formula and discretionary programs are also available, including the Small Transit-Intensive Cities program, which allocates $218,747 under MAP-21 to small urban areas for each of six criteria[33] met. Corvallis is the only such area in Oregon to receive these funds and meets two of the six criteria.

Overall, Bend will be eligible for approximately $530,000 in additional federal funds starting in its FY 2014. These federal funds could be utilized for different purposes, i.e., for capital or operating, local or regional, etc.

State Funding Sources

The State of Oregon provides a relatively small share of transit funding for Bend. About 75% of funds from the Oregon Special Transportation Fund (STF) is allocated on a formula-basis (to counties, transit districts, and tribal governments); Bend receives an allocation through Deschutes County based on a local public involvement process to support services for older adults and persons with disabilities. The State also distributes some funds through discretionary grants. STF funds may be used for capital or operating purposes and are eligible as local match for federal funds. A relatively low local match rate of 10.27% is required when delivered in the form of contracts to purchase human transportation services.

Additional discretionary programs through the State of Oregon include:

- Mass Transit Vehicle Replacement Program, which prioritizes the oldest vehicles within each vehicle class statewide for replacement
- Enhance and Fix-IT process, which funds capital improvements (e.g., transit and/or bicycle/pedestrian infrastructure) as well as preservation and maintenance
- Connect Oregon, which funds multimodal transportation improvements

[33] The criteria are: Passenger Miles per Vehicle Revenue Mile, per Vehicle Revenue Hour, and per Capita; Vehicle Revenue Miles and Hours per Capita, and Passenger Trips per Capita.

Local Revenues

Under the City of Bend's operating agreement with COIC, it currently provides operating funding of over $1 million from its general fund[34], the largest overall revenue source, to meet the requirement for local matching funds for Federal section 5307 and 5310 funds. The City's agreement with COIC runs through September 1, 2015, and can potentially be extended for additional one-year periods. The City of Bend funding increases based on the Portland Consumer Price Index (CPI) each September 1.

COIC, which operates CET service, is pursuing a strategy to develop a sustainable, long-term funding source to provide local matching funds to operate local and regional service. This strategy could result in a ballot measure (in Bend and/or other parts of the region) seeking voter approval for a funding levy, such as a property tax, payroll tax, or transportation services fee, that would provide a stable funding source for the overall regional transit system.

Fares, Public Private Partnerships, and Other Sources

A variety of other sources each comprise relatively small shares of transit funding, but can collectively provide a significant supplement to federal, state, and local sources. Fares are the largest such source, comprising about 14% of total revenues including Fixed-Route, Dial-A-Ride, and group pass sales. Advertising currently provides about 1% of revenues. CET already has an innovative partnership that obtains discounts on vehicle maintenance in exchange for allowing the contracted provider to perform other maintenance work in the CET facility during off-hours. Potential public-private partnerships include:

- Educational institutions, including COCC and OSU/Cascades (passes, service partnerships, etc.), as well as Bend – La Pine Schools (opportunities for high school-aged students to attend classes offered at either of the colleges)
- Major employers (passes, stop sponsorship, etc.)
- Commute Options (vanpools)
- Medical institutions, such as St. Charles Medical Center or Bend Memorial Clinic (active transportation)
- Churches (Sunday service)

[34] 1,027,650 for FY 2013. Adjusted based on the Portland Consumer Price Index (CPI) each September 1.

- Chamber of Commerce / Tourism (potential downtown circulator)

FINANCIAL ANALYSIS

This section describes the operating and capital cost projections for CET services in Bend over the next 10 years. It is intended to provide a high-level analysis of the funding required to provide transit service in Bend (both operating and capital costs). This includes the required "local match" to secure federal funding available for the Bend area, maintain the existing service levels and vehicle fleet in the short-term time frame, and implement the identified mid-term service enhancements in the 3 to 10 year time frame, contingent on increased, sustainable transit funding levels. It is assumed that fixed-route service will be maintained at current levels through FY 2015 (short-term) and that near mid-term and mid-term service enhancements will be implemented in FY 2016 and FY 2018, respectively.

The analysis is based on actual figures for 2011/12, the CET FY 2013 budget, and initial CET budget estimates for FY 2014. These figures are projected to 2021/22 (FY 2022) based on a number of assumptions as detailed in this section.

Operating Cost and Revenue Assumptions

Operating Expenses

Figure 9-5 provides projected operating expenses over the next 10 years (Row B). For FY 2013 and FY 2014, these are primarily based on CET budgeted operating costs. Major assumptions used in developing projections for future years include:

- For FY 2014, an additional $50,000 in operating costs above the FY 2013 budgeted level is assumed. The share of costs is assumed to be approximately 60% for fixed-route and 40% for Dial-A-Ride, based on FY 2012.
  - Fixed-Route: Base costs of approximately $69 per service hour are assumed in FY 2013 and $71 per hour in FY 2014. Operating cost increases of 3.5% annually are assumed starting in FY 2015.
  - Dial-A-Ride: Base costs of approximately $63 per service hour are assumed in FY 2013 and $64 per hour in FY 2014. Operating cost increases of 2.0% annually are assumed starting in FY 2015. This lower rate compared to fixed-route service reflects a desire to shift the cost curve for Dial-A-Ride to be lower than the cost of fixed-route on a per-hour basis, similar to peer agencies (see Service Standards in Chapter 7). It assumes that CET will be able to increase the cost-efficiency of

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Dial-A-Ride service over time, e.g., based on periodic evaluation of geographic coverage, hours of service, and eligibility policies that currently exceed ADA requirements.

Ridership Growth

For the purpose of estimating fare revenues and calculating projected performance metrics, this scenario uses the following ridership assumptions.

- **Fixed-Route**. CET fixed-route ridership in Bend has seen over 19% annual ridership increases from 2009-2011. Although this rate may continue, the following more conservative assumptions related to ridership were used:
  - **Population Growth**. The population in Bend grew by just 0.4% from 2010 to 2011. However, population growth is assumed to recover and Bend is assumed to grow at the same rate as is projected for Deschutes County (2.33% from 2010-2015, 2.00% from 2016-2020, and 1.68% from 2021-2025).
  - **Ridership per Capita**. CET carried 4.3 rides per capita (unlinked trips) in 2010 and 5.1 in 2011. This rate is assumed to grow by 5% annually. (A lower-end growth rate of 2% annually is also used, to provide an estimated range.) Additional increases in transit ridership per capita are assumed in 2016 and 2018 responding to service changes (percent increase in service hours), based on an elasticity of 0.3 (2016) and 0.5 (2018); a greater response is assumed for the latter, more substantial change. [35]
  - **Ridership**. Based on the assumed population growth and increase in transit ridership per capita, ridership is estimated to increase by up to 7% annually in non-service change years.
- **Dial-A-Ride**.
  - **Service Hours**. It is assumed that service hours will be held constant (at 2011 levels), except for increases where fixed-route service changes require additional ADA service (in 2016 and beyond).
  - **Productivity**. It is assumed that Dial-A-Ride productivity (number of passengers per hour) will remain constant at 2013 levels – slightly over four trips per service hour.

[35] The concept of elasticity is used to estimate the percent increase in ridership that can be expected based on the percent increase in service. For example, an elasticity of 0.5%, which is an average industry-standard value for changes in service levels, means that there would be a 0.5% increase in ridership for each 1% increase in service levels.

- **Ridership and Ridership per Capita**. Based on the above assumptions, the number of Dial-A-Ride trips would increase slightly, by slightly more than 3% over the 10-year period. Ridership per capita would decline slightly, from 0.8 rides per capita in 2011 to 0.7 rides per capita. Although recent trends in Bend have shown a decline in Dial-A-Ride utilization, the aging of the population over the life of this plan is likely to increase demand for Dial-A-Ride (e.g., the rate of disability generally increases with age).[36] As noted above, CET would need to evaluate measures to maintain Dial-A-Ride service utilization at current levels.

Fares and Fare Revenues

The following fare increases were assumed to keep pace with cost increases:

- **Fixed-route**. The one-way adult fare was assumed to increase by 25 cents in FY 2014 (a 17% increase), from $1.50 to $1.75, and then increase at an average of 5 cents annually (about 3% per year) over the 10-year period. The resulting fare would be $2.15 in FY 2022.[37]
- **Dial-A-Ride**. The one-way non-discounted fare was assumed to increase by 25 cents in FY 2014 and FY 2015, and then increase an average of 10 cents annually (about 3% per year) over the 10-year period. The resulting fare would be $3.70 in FY 2022.[38]

For both fixed-route and Dial-A-Ride, an average fare was calculated based on the projected ridership and FY 2013 budgetary estimates for fare revenue. The average fare was assumed to remain constant as a percentage of a full fare over the 10-year period analyzed. With the assumed fare increases described above, farebox recovery on fixed-route service would increase to the 20-25% range, above the recommended minimum standard of 15%. Dial-A-Ride farebox recovery would be within the 8-10% range recommended as a minimum standard.

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[36] Although beyond the scope of this study, the following method could be used in the future to refine demand estimate for Dial-A-Ride: (1) Segment population by age (city or county-level projections). (2) Determine the number of riders per capita by age group (from dispatch system). (3) Determine the number of trips per rider by age group (from dispatch system). (4) Estimate Dial-A-Ride demand based on projected growth within each age group.

[37] Among six peer agencies, only two have higher fares than Bend: both RVTD (Medford) and Redding, CA have one-way fares of $2.00. The agency with the lowest fares, City of Yakima Transit at $0.75, has significant local revenues through a sales tax. Fares at the other agencies are either $1.00 or $1.10. The average one-way fare is $1.23.

[38] The current one-way fare is 167% of the fixed-route fare and this percentage would increase slightly to 172% at the end of the 10-year period. ADA paratransit fares may be up to double the one-way fixed-route fare. Among the six peer agencies considered, all agencies except for Everett Transit charge an ADA fare that is double the one-way adult full fare cost.

Federal, State, and Local Revenues

The existing FY 2013 CET budget for Bend includes nearly $2.4 million in revenues for operations and maintenance of both fixed-route and Dial-A-Ride service.[39] Figure 9-5 includes the following assumptions for revenue sources and funding levels, based on the existing FY 2013 CET budget for Bend service and known/assumed future sources:

- **Federal.** Increased federal funding (approximately $530,000) will be available to Bend under the 5307/5340, 5310, and 5339 programs starting in its FY 2014, based on the MAP-21 transportation bill; the specific 5339 funding allocation for Bend is not currently known and is estimated to be about $122,000 based on the total Oregon small urban area funding and Bend's share of all Oregon small urban area 5307/5340 formula funds. Although Federal funding in uncertain beyond the two-year duration of MAP-21 (through 2015), it is assumed that MAP-21 funding levels will be maintained with an adjustment for inflation based on the federal CPI (assumed to be 3%). Unobligated Federal funds are assumed as a capital reserve and applied to future year expenses; funds can be deferred for 3-6 years depending on funding program.
- **State**. The level of STF funding is not currently known but is assumed to be maintained at FY 2013 levels in FY 2014 with subsequent increases based on the federal CPI.
- **City of Bend (Local Funds).** The Portland CPI, which is used to adjust the City of Bend funding contribution ($1.03 million in FY 2013) each September 1, is assumed to be 2.5%.
- **Advertising.** Increased advertising revenues are assumed, based on $5,000 per fixed-route vehicle, increased annually based on the Portland CPI.

This plan does not make a specific recommendation on the use of additional federal revenues, but decisions about their use could include consideration of:

- Building capital reserves to help with vehicle capital replacement needs in future years.
- Mitigating potential reductions in funding from other sources, e.g., State STF funds, and potential increases in fuel costs, Bend Dial-A-Ride contract costs, etc.

[39] For past years, total operating costs were stated as approximately $2.5 million (approximately $1.5 million for fixed-route service and $1.0 million for Dial-A-Ride service); these figures were the basis for operating cost estimates for service enhancements. The FY 2013 budget is the first where all transit operations transitioned from the City of Bend to CET.

- Providing a contribution towards regional transit services; Bend residents comprise an estimated 40% of riders on the Redmond-Bend Community Connector shuttle.
- Purchasing low-floor vehicles (or making other capital improvements) at an earlier date than is assumed.

Overall Transit Funding Requirements

The financial scenario shown in Figure 9-5 uses the following assumptions to determine additional requirements for local funds to match available federal funds:

- Federal funds are used to fulfill capital needs identified in this plan (with 20% local match)
- Federal funds are used to provide "purchased" human transportation services (with a 10.27% local match).
- Federal funds are then used to cover operating costs identified in this plan (with a 50% local match).

Based on this scenario, the Bend area has sufficient local funds to leverage federal funds available to it, but will require additional local funding to implement the service recommendations of this plan. The overall future funding requirements for transit in Bend are as follows:

- Prior to the near mid-term service changes recommended for FY 2016, unobligated federal funds are assumed to be used to build a capital reserve (but could be used for other purposes as discussed above).
- In FY 2016 and FY 2017, following the near mid-term service changes (assumed in FY 2016), there would be annual funding deficits of about $50,000 in FY 2016 and $125,000 in FY 2017. *Although there would be cumulative operating surpluses, service increases are not financially sustainable without new local revenue source(s).*
- In FY 2018 and beyond, realizing the recommended mid-term service improvements would require an average of about $525,000 in additional local funding annually; this includes the 30/60 minute service restructuring, new Route 7, evening service until 8 PM, etc.

Potential sources for additional funds could include:

- An increased City of Bend funding contribution
- Service partnerships, such as with OSU or COCC
- Additional revenues from group pass sales
- MPO federal discretionary funds

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- Connect Oregon funding (capital infrastructure)
- New local revenue sources

Appendix C provides additional detail on potential funding sources.

Capital Costs

Figure 9-4 identifies capital costs for the initial ten years of this plan.

- It assumes inflation of 3.5% annually, above unit costs included in Figure B-12 (Appendix).
- Based on the estimated duty-cycle for the fixed-route fleet (200,000 mile/7-year or 350,000 mile/10-year minimum lifetime) a number of vehicles are likely to require replacement, although additional preventative maintenance may be able to further extend vehicle lifetimes. Over the next five fiscal years (FY 2014 – 2018) it is assumed that one fixed-route vehicle will be replaced annually; high-floor vehicles are assumed for cost reasons. Starting with FY 2017 it is assumed that new and replacement fixed-route vehicles will be low-floor buses.
- The typical duty cycle for a Dial-A-Ride vehicle is 150,000 miles/5-year minimum lifetime. It is assumed that one Dial-A-Ride vehicle will need to be replaced each year.

Summary of Analysis Results

Figure 9-5 shows projected operating and capital costs and revenues for fixed-route transit and Dial-A-Ride in Bend over the next ten years, based on the assumptions detailed above. The analysis assumes constant fixed-route service hours in FY 2013 – 2015 and implementation of fixed-route service enhancements in FY 2016 and 2018. Based on the financial scenario presented in Figure 9-5:

- The system would have an annual operating surplus in FY 2014 and FY 2015 (Row V), including unobligated federal funds.
- Although federal funds could make it possible to implement the near mid-term service enhancements in FY 2016, this service level would not be sustainable without additional local funding.
- In FY 2018 and beyond, an average of about $525,000 in additional local funding would be required in order to implement the mid-term service enhancements, including restructuring service to have 30-minute headways on routes serving primary corridors. Total *local* funding of about $1.75 million on average would be needed, not including

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advertising. This assumes that STF funding remains stable at FY 2013 levels and that unobligated federal funding is not used for other purposes.

The bottom portion of Figure 9-5 shows performance indicators for fixed-route and Dial-A-Ride service.

Figure 9-6 shows how the projections for fixed-route operating costs compare to peer agencies, accounting for projected population and ridership growth in Bend. For the mid-term, the resulting estimates of ridership per capita (7.5 to 8.7) are comparable to peer agencies closest to Bend in terms of service hours per capita.

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Figure 9-4 Ten Year Capital Plan

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	10-Year Total
	Estimated	Estimated	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Fixed-Route Vehicle Replacement[1]	$0	$173,067	$178,259	$183,607	$189,115	$194,788	$332,066	$342,028	$352,289	$362,857	$2,308,076
Vehicles for New Fixed-Route Service[2]	$0	$0	$0	$0	$313,004	$322,394	$0	$0	$0	$0	$635,398
Dial-A-Ride Vehicle Replacement[3]	$0	$79,200	$81,576	$84,023	$86,544	$89,140	$91,815	$94,569	$97,406	$100,328	$804,601
Facilities (Stops, Shelters, etc.) [4]	$0	$33,843	$34,858	$98,595	$35,010	$161,555	$37,142	$25,335	$26,095	$26,878	$479,312
Other Capital Programs[5]	$0	$0	$0	$123,806	$0	$0	$0	$0	$0	$0	$123,806
Marketing and Branding[6]	$0	$0	$49,719	$5,628	$0	$5,970	$0	$6,334	$0	$6,720	$74,370
TOTAL CAPITAL EXPENSES	$0	$286,110	$344,412	$495,658	$623,673	$773,848	$461,023	$468,266	$475,790	$496,784	$4,425,564

Notes: Unit costs listed in Figure B-12 of the appendix, inflated by 3.5% annually to account for inflation.

(1) Fixed-route vehicle replacement: 1 high-floor, medium duty buses per year (2014 - 2018). 1 low-floor bus per year (2019-2022). If additional funds are available for capital purchases, low-floor buses could be substituted for high-floor buses.
(2) New fixed-route vehicles: 1 low-floor bus per year, e.g., for Routes 3 and 7 (assumes interlining when Route 7 begins operation) (2017, 2018).
(3) Dial-A-Ride vehicle replacement:1 cutaway vehicle per year (2014 – 2022).
(4) Assumes 4 “basic” and 2 “major” stop enhancements per year. Upgrades to two major transit stops/secondary hubs assumed (2017 and 2019).
(5) Other capital programs includes implementation of an Automated Passenger Counting system (2016).
(6) Marketing and branding includes allowance to complete conversion of BAT vehicles/facilities to CET (by 2015), marketing assessment (2015), and at least biannual marketing campaigns (2016, 2018, 2020, and 2022).

Figure 9-5 Ten Year Operating Cost Projections and Performance Indicators

		FY 2013 Estimated	FY 2014 Estimated	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected
	Number of Service Hours Assumed	20,700	20,700	20,700	24,100	24,100	32,900	32,900	32,900	32,900	32,900
A=B+F	TRANSIT EXPENSES	$2,398,730	$2,734,840	$2,864,027	$3,347,228	$3,559,373	$4,542,762	$4,345,275	$4,471,563	$4,601,960	$4,749,782
B=C+D	**Operating Expenses (1)**	**$2,398,730**	**$2,448,730**	**$2,519,615**	**$2,851,570**	**$2,935,700**	**$3,768,913**	**$3,884,252**	**$4,003,297**	**$4,126,170**	**$4,252,998**
C	*Bend Fixed-Route Service*	*$1,430,858*	*$1,460,684*	*$1,511,808*	*$1,806,610*	*$1,869,841*	*$2,664,054*	*$2,757,296*	*$2,853,802*	*$2,953,685*	*$3,057,064*
D	*Bend ADA Paratransit Service*	*$967,872*	*$988,046*	*$1,007,807*	*$1,044,960*	*$1,065,859*	*$1,104,859*	*$1,126,956*	*$1,149,495*	*$1,172,485*	*$1,195,935*
E	*Potential Regional Service Contribution*										
F	**Capital Expenses (2)**	**$0**	**$286,110**	**$344,412**	**$495,658**	**$623,673**	**$773,848**	**$461,023**	**$468,266**	**$475,790**	**$496,784**
G=H+I+R	TRANSIT REVENUES - Existing Sources (3)	$2,398,730	$3,040,481	$3,151,963	$3,289,529	$3,411,712	$3,639,785	$3,783,220	$3,934,229	$4,090,954	$4,255,884
H=I+J	**Farebox (4)**	**$337,695**	**$411,350**	**$453,389**	**$512,937**	**$557,539**	**$694,809**	**$755,956**	**$822,361**	**$892,099**	**$967,591**
I	*Fixed Route Passenger Fares*	*$259,758*	*$325,620*	*$359,865*	*$414,698*	*$456,130*	*$588,530*	*$646,457*	*$709,642*	*$776,159*	*$848,430*
J	*Paratransit Passenger Fares*	*$77,937*	*$85,731*	*$93,524*	*$98,240*	*$101,409*	*$106,279*	*$109,499*	*$112,720*	*$115,940*	*$119,161*
K=L+K+…Q	**Intergovernmental (5)**	**$2,032,702**	**$2,591,631**	**$2,660,111**	**$2,734,516**	**$2,811,018**	**$2,889,677**	**$2,970,553**	**$3,053,711**	**$3,139,215**	**$3,227,131**
L	*Local Assistance (City of Bend)*	*$1,027,650*	*$1,053,341*	*$1,079,675*	*$1,106,667*	*$1,134,333*	*$1,162,692*	*$1,191,759*	*$1,221,553*	*$1,252,092*	*$1,283,394*
M	*Federal 5310 Operating Funds (6)*	*$87,131*	*$133,409*	*$133,409*	*$137,411*	*$141,533*	*$145,779*	*$150,152*	*$154,657*	*$159,297*	*$164,076*
N	*Federal JARC*	*$89,321*	*$0*	*JARC program sunsets after FY 2014 (formula-based allocation included in 5307/5340 program under MAP-21)*							
O	*Federal Operating or Capital - 5307/5340 (7)*	*$705,913*	*$1,160,068*	*$1,194,870*	*$1,230,716*	*$1,267,638*	*$1,305,667*	*$1,344,837*	*$1,385,182*	*$1,426,737*	*$1,469,539*
P	*Federal Capital - 5339 (7)*	*-*	*$122,126*	*$125,790*	*$129,563*	*$133,450*	*$137,454*	*$141,577*	*$145,825*	*$150,200*	*$154,706*
Q	*State Operating Assistance (STF) (8)*	*$122,687*	*$122,687*	*$126,368*	*$130,159*	*$134,063*	*$138,085*	*$142,228*	*$146,495*	*$150,890*	*$155,416*
R = S+T+U	**Other Local Revenue**	**$28,333**	**$37,500**	**$38,463**	**$42,076**	**$43,155**	**$55,299**	**$56,710**	**$58,156**	**$59,640**	**$61,162**
S	*Advertising*	*$23,333*	*$32,500*	*$33,313*	*$36,772*	*$37,691*	*$49,672*	*$50,913*	*$52,186*	*$53,491*	*$54,828*
T	*Sponsorships*	*$5,000*	*$5,000*	*$5,150*	*$5,305*	*$5,464*	*$5,628*	*$5,796*	*$5,970*	*$6,149*	*$6,334*
U											
	OPERATING BALANCE										
V=A-G	Annual Surplus / Deficit - Operating & Capital (existing funding) (9)	$0	$305,640	$287,935	($57,698)	($147,661)	($902,976)	($562,055)	($537,333)	($511,005)	($493,898)
W	*Previous year reserves applied (if required) (10)*	*$0*	*$0*	*$0*	*$57,698*	*$147,661*	*$388,216*	*$0*	*$0*	*$0*	*$0*
X	*Additional local (or other) new revenues needed (11)*	*$0*	*$0*	*$0*	*$0*	*$0*	*$514,760*	*$562,055*	*$537,333*	*$511,005*	*$493,898*
Y	**Annual Operating Balance (Capital or Operating Reserve)**	**$0**	**$305,640**	**$287,935**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Z	***Cumulative Operating Balance (Capital or Operating Reserve)***	***$0***	***$305,640***	***$593,575***	***$535,877***	***$388,216***	***$0***	***$0***	***$0***	***$0***	***$0***

Fixed Route Performance Indicators										
Cost Per Rev Hrs	$69.12	$70.56	$73.03	$75.59	$78.24	$80.97	$83.81	$86.74	$89.78	$92.92
Cost Per Passenger	$3.16	$3.00	$2.89	$3.08	$2.98	$3.38	$3.26	$3.16	$3.06	$2.96
Fare Box/Recovery	18.2%	22.3%	23.8%	23.0%	24.4%	22.1%	23.4%	24.9%	26.3%	27.8%
Average Fare Per Passenger	$0.57	$0.67	$0.69	$0.71	$0.73	$0.75	$0.77	$0.78	$0.80	$0.82
Average Subsidy Per Passenger	$2.59	$2.33	$2.21	$2.38	$2.25	$2.63	$2.50	$2.37	$2.25	$2.14
Passenger Per Rev Hrs	21.9	23.5	25.2	24.5	26.2	24.0	25.7	27.5	29.4	31.3

Dial-A-Ride Performance Indicators										
Cost Per Rev Hrs	$62.76	$64.06	$65.34	$66.65	$67.98	$69.34	$70.73	$72.15	$73.59	$75.06
Cost Per Passenger	$15.22	$15.54	$15.85	$16.17	$16.49	$16.82	$17.16	$17.50	$17.85	$18.21
Fare Box/Recovery	8.1%	8.7%	9.3%	9.4%	9.5%	9.6%	9.7%	9.8%	9.9%	10.0%
Average Fare Per Passenger	$1.23	$1.35	$1.47	$1.52	$1.57	$1.62	$1.67	$1.72	$1.77	$1.81
Average Subsidy Per Passenger	$14.00	$14.19	$14.38	$14.65	$14.92	$15.20	$15.49	$15.79	$16.09	$16.39
Passenger Per Rev Hrs	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1

Notes:

(1) Operating expenses from Operating Assumptions or Op Alt 1 Worksheets, based on 2012 average cost of $72 per hour, assuming 3.5% annual increases (due to inflation) for FR and 2% for DAR. Assumes increased service in FY 2016 and FY 2018.

(2) Capital expenses from Capital Alt 1 Worksheet, includes assumed vehicle replacement needs and other facilities\infrastructure needs. Includes additional vehicles to support increased service in FY 2018.

(3) FY 2013 and 2014 base revenues from FY 2013 CET Proposed Budget (with revisions) and/or new ODOT or MAP-21 allocations. Additional local funds will be required to fully match the federal dollars included in FY 2014 and later years.

(4) Assumes a $0.25 fare increase in FY 2014 on fixed-route and Dial-A-Ride. In subsequent years, assumes 5 cent annual fare increases on fixed-route and 10 cent annual fare increases on Dial-A-Ride.

(5) City of Bend funds assumed to increase based on Portland CPI. MAP-21 funding levels assumed for federal sources starting in FY 2014, and assumed to increase annually at federal CPI, which is assumed to be 3% .

(6) Federal 5310 funds require a local match of 10.27% , based on use for purchased services.

(7) It is assumed that federal funds are first used to fulfill capital needs (20% local match), then operating costs (50% local match). It is assumed that 10% of 5307 funds can be applied to preventative maintenance or ADA service and matched at 20% .

(8) State (STF) operating assistance is not currently known, but is assumed to continue at FY 2013 levels in FY 14, and to increase at Federal CPI subsequently.

(9) Does not include operating surplus from past years (assumed to be held as a capital reserve). Assumes current funding sources/levels.

(10) Operating surplus (reserves) from past years includes previous years' unobligated Federal funds (can be deferred for 3-6 years depending on funding program) that will require adequate local match.

(11) Identifies the level of additional local or other new revenues sources that would be required to operate transit in Bend, after any previous years' reserves are exhausted.

Figure 9-6 Projected Mid-Term Fixed-Route Operating Costs and Performance Measures Relative to Peers

			Fixed-Route						
	Service Area Population	Density (Pop. Per Square Mile)	Total Annual Vehicle Revenue Hours	Annual Vehicle Hours per Capita	Annual Operating Costs [2]	Annual Operating Costs per Capita	Annual Ridership (Unlinked Trips) [6]	Annual Rides per Capita (2010)	Operating Cost per Rider (2010)
Actual, 2010									
Medford, OR	150,000	2,586	33,658	0.22	$4,772,691	$31.82	979,124	6.5	$4.87
Redding, CA	117,478	1,175	43,736	0.37	$3,180,273	$27.07	672,379	5.7	$4.73
Pueblo, CO	105,000	2,692	40,430	0.39	$3,478,182	$33.13	951,123	9.1	$3.66
Yakima. WA	92,035	3,287	54,850	0.60	$5,760,027	$62.59	1,312,116	14.3	$4.39
Santa Fe, NM	76,100	1,856	76,988	1.01	$6,053,701	$79.55	838,841	11.0	$7.22
Everett, WA	105,000	3,088	129,830	1.24	$14,240,792	$135.63	2,289,587	21.8	$6.22
Peer Average	107,602	2,447	58,063	0.60	$6,247,611	$61.60	1,490,241	11.4	$5.18
Bend	76,639	2,395	20,902	0.26	$1,489,094	$19.43	327,904	4.0 (5.1 in 2011)	$4.54
Projected, Adjusted for Inflation									
Bend – Near mid-term (Projected – 2016)	86,000 [a]	2,531 [b]	24,100 [c]	0.28	$1,936,000 [f]	$22.50	507,000 – 586,000 [g]	5.9 – 6.8	$3.31 - $3.82
Bend - Mid-Term (Projected – 2018)	89,500 [a]	2,797 [b]	32,900 [d]	0.37	$2,854,000 [f]	$32.00	647,000 – 788,000 [g]	7.5 – 8.7	$3.62 - $4.41
Bend – Long-Term (Projected – 2030)	110,000 [a]	-	78,700 [e]	0.72	-	-	-	-	-

Notes:

(a) Assumes that Bend's population increases at the same annual rate as Deschutes County is projected to increase overall, starting with 2011 estimate, and that Bend will attain the projected 2025 population of 110,000 by 2030.
(b) Assumes no change in existing city limits.
(c) Near mid-term includes Route 3/11 restructuring, all-day and Saturday service for Route 11, and 1 additional evening trip on all routes; assumed for 2016.
(d) Mid-term includes initial restructuring for 30/60 minute service, near mid-term enhancements, evening service until 8 PM on all routes, new Route 7, etc.); assumed for 2018.
(e) Long-term includes the full set of potential improvements. Operating costs and ridership were not projected for the long-term.
(f) Operating costs assume increase in costs of 3.5% annually, from FY 14 budget estimates.
(g) Projected ridership based on annual increase in rides per capita of 2.0% to 5.0%, with additional increases due to service changes.

Source: National Transit Database, 2010. U.S. Census, 2010.

IMPLEMENTATION ACTIONS AND PHASING

Figure 9-7 provides a matrix listing implementation actions, including likely responsibility and phasing.

- Implementation responsibility identifies lead versus supporting role in implementation.
- Phasing is based on the following time frames: first year (early short-term), short-term (years 1-3), mid-term (years 4-10), and/or ongoing.

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Figure 9-7 Implementation Actions and Phasing

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
	Goal 1: Develop public transportation services for the transportation disadvantaged					
1.1	**Ensure that local funding for Bend Dial-A-Ride service is maintained beyond the City of Bend's current funding commitment (through September 2015).**	BMPO[1], CET[1], City of Bend[1]		✓	✓	
1.2	**Acquire low-floor buses as part of new/replacement vehicle purchases and prioritize on routes with high levels of wheelchair boardings and/or ridership.**	CET[1]		✓	✓	
1.3	**Assess balance between fixed-route and Dial-A-Ride services on a periodic basis, based on available financial resources and as fixed-route service is enhanced in the future.** This could include evaluation of the costs and cost-effectiveness of providing Dial-A-Ride service that exceeds ADA requirements in terms of: (1) , geographic coverage beyond the required ¾ distance from fixed-route service (currently within city limits); (2) service at days and times when fixed-route service does not operate (e.g., on Sundays); (3) eligibility for low-income seniors.	CET[1], City of Bend[2]		✓		✓
	Goal 2: Reduce reliance on automobiles and develop public transportation facilities					
	Funding					
2.1	**Identify a source(s) for local matching funds (as needed) to secure additional transit funding under MAP-21. This could include assessment of City of Bend's willingness to increase its funding commitment**	CET[1], BMPO[2], City of Bend[2]	✓	✓		
2.2	**Ensure that local funding for fixed-route transit is maintained beyond the City of Bend's funding commitment (through September 2015).** Develop local funding sources sufficient to support the mid-term service improvements recommended in the PTP.	BMPO[1], CET[1], City of Bend[1]		✓	✓	
2.3	**Renegotiate terms of the bulk ticket discount program with COCC, with the aim of developing a group pass program.** Demand for the existing program has exceeded the levels for which it was designed/intended.	CET[1], COCC[2]	✓	✓		

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
	Facilities & Infrastructure					
2.4	**Adopt bus stop amenity design standards, e.g., based on Figure 8-4**. This should include standards for new bus shelters that enhance transit visibility and meet passenger needs for weather protection. This could also be addressed in the community-oriented design process described in item 2.4 (below). Pursue opportunities to integrate advertising or sponsorships as part of the funding package for shelters or other stop enhancements.	CET[1], City of Bend[2], BMPO[2]		✓		
2.5	**Develop specifications for new/replacement vehicles that modernize the fleet in order to be more appealing and attractive to a broad range of users and align vehicle capacity to passenger demand/needs on each route.** This could include transit signal priority, real-time passenger information, and other ITS capabilities, e.g., automated passenger counters (APCs). In the mid-term time frame (or beyond) this could include a community-oriented process to design vehicles (and other system elements) to community specifications (e.g., similar to Boulder, where such a process was embraced in development of the Hop, Skip, Jump, etc., local transit services; see footnote for details[40]).	CET[1]			✓	
2.6	**Develop a program of transit-supportive capital improvements.** This program should be coordinated with the City's Capital Improvement Plan (CIP), to identify and prioritize transit-supportive capital improvements around major transit nodes, primary transit corridors, and planned routes including: • Bus stops at major intersections (both sides of the street) and amenities at the most highly used stops (using stop amenity thresholds in Figure 8-1 as a guideline). • Bicycle/pedestrian improvements (e.g., street crossings serving stops and activity centers along arterial transit streets such as 3rd Street and Greenwood Ave.) • Transit signal priority to allow buses to better maintain schedule on congested corridors.	City of Bend[1], CET[1], BMPO[2], ODOT[2]	✓	✓	✓	Review/ update every 2 years
2.7	**Develop a sidewalk repair and infill program**, with a specific emphasis on access to transit facilities.	City of Bend[1], BMPO[2], CET[2]		✓	✓	

[40] http://www.ctaa.org/webmodules/webarticles/articlefiles/ct/fall98/boulder.pdf

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
2.8	**Evaluate pedestrian safety and transit operational improvements for the on-street bus transfer facility at Hawthorne Station. This could include consideration of:** (1) converting Hawthorne Avenue to exclusive transit and pedestrian use between 3rd and 4th Avenue, e.g., east of the Safeway driveway; (2) providing a mid-block crossing for use by passengers (e.g., raised pavement surface, pedestrian-activated lighting, etc.). A "neck-down" could be included in the design of the mid-block crossing, assuming it does not impact bus movements; (3) on-street parking on 4th Avenue between Hawthorne and Greenwood, given current and future transit operations.	City of Bend[1], CET[2], , BMPO[2]		✓	✓	
2.9	**Evaluate locations and opportunities for major transit stops in north and south Bend, at existing or future stop locations.** These locations may serve as secondary transit hubs, facilitating connections between local or regional routes (based on future service enhancements identified in this plan or the RTMP), as well as ride sharing. See Figure 8-1 and Figure 8-2 for locations and potential stop features.	CET[1], City of Bend[2], BMPO[2]		✓	✓	
2.10	**Develop bike parking facilities, preferably covered, at secondary hub locations and other outlying stop locations.** Recommended locations are identified in Figure 8-2.	CET[1], BMPO[2], City of Bend[2], ODOT[2], Commute Options[2]		✓	✓	
2.11	**Evaluate feasibility of a bicycle-sharing program**. Implement as feasible (based on an appropriate service model, partnerships, etc.). Bicycle sharing can serve "last-mile" connections to destinations beyond walking distance of transit stops and relieve capacity limitations for transporting bicycles in racks on buses.	BMPO[1], City of Bend[2], Commute Options[2]			✓	
2.12	**Implement speed & reliability improvements on 3rd Street**. Such investments could include signal timing, transit signal priority, and evaluating stop placement to minimize delay to buses. Bus routes on 3rd should be able to complete a round trip within the scheduled time (currently 40 minutes; in the mid-term time frame, 30 minutes for south 3rd Street [Route 1] and 60 minutes for north 3rd Street [Route 4]).	City of Bend[1], ODOT[1], BMPO[2], CET[2]			✓	

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
	Service or Service-Related					
2.13	**Implement short-term service improvements to Routes 4, 5, and 6.** Conduct additional outreach to Route 5 and 6 passengers who will be affected by the changes. Create a temporary stop for outbound Route 6/inbound Route 5 on eastbound Greenwood at Purcell. Add this stop and existing temporary stops on 5th Street to the program for developing permanent stops.	CET[1]	✓			
2.14	**Implement near mid-term service and infrastructure improvements on Routes 3 and 11, timed with and contingent on a new OSU facility on SW Colorado with a projected enrollment of 5,000 students within the next several years.** Pursue partnerships with OSU (and/or others) to fund the increase in operating costs for all-day Route 11 service as well as additional early-evening service.	OSU[1], COCC[1], CET[2], City of Bend[2]			✓	
2.15	**Secure funding for and implement pedestrian access corridors from Bear Creek Road to Greenwood Avenue to support implementation of Route 7.** This should include required traffic signals and/or protected pedestrian crossings (e.g., rapid flashing beacon) to connect access corridors to future stop locations. A map of existing/planned accessways is provided in Appendix B, Figure B-16.	City of Bend[1], ODOT[2], CET[2]			✓	
2.16	**Review priorities for eliminating at-grade railroad crossings including consideration of when transit service on a corridor may be feasible/likely and whether the potential for delay at railroad crossings could preclude future transit service.** For example, Cooley Road in northeast Bend and Reed Market Road in southeast Bend; the COACT Report on Central Oregon Rail Planning (2009) prioritized both the Cooley and Reed Market Road crossings as "High."	City of Bend[1], CET[2], BMPO[2]		✓		

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
	Goal 3: Increase mobility, accessibility, and visibility of transit throughout the urban area					
	Regional Service Enhancements					
3.1	**Utilize the Bend-La Pine Community Connector (Route 30) to provide a stop in Deschutes River Woods.** Identify potential locations (e.g., Riverwoods Baptist Church initially and/or Riverwoods Country Store in longer-term) amenable to a stop location, assess feasibility, and negotiate a joint-use agreement. Secure funding for any infrastructure improvements needed at the Riverwoods Country Store (e.g., pave rear portion of parking lot) if this location is pursued in the longer-term. Note: Service to Riverwoods Baptist Church started on 11/26/2012.	CET[1], BMPO[2]	✓		✓	
3.2	**Evaluate a Bend-Redmond Community Connector (Route 24) stop in the north part of Bend.** An initial location could be the ODOT Park & Ride near the DMV office on 3rd Street. In the longer-term, the stop could be co-located with a future major transit hub / secondary hub location in north Bend (see 2.9).	CET[1], BMPO[2]		✓	✓	
3.3	**Evaluate a Bend-La Pine Community Connector (Route 30) stop in the south part of Bend.** An initial location could be the existing Route 1 stops near Walmart. In the longer-term, the stop could be co-located with a future major transit hub / secondary hub location in south Bend (see 2.9).	CET[1], BMPO[2]		✓	✓	
3.4	**Promote vanpools to dispersed employment sites.** Identify opportunities for promoting vanpools to employment sites not currently served by the fixed-route system or located outside of Bend city limits (e.g., Bend Municipal Airport). Assess demand for such vanpools to serve regional demand in coordination with Community Connector routes as well as local demand.	Commute Options[1], CET[2], BMPO[2]	✓	✓		
3.5	**Develop a region-wide volunteer driver program to fill a need for transportation connections not served by transit, i.e., outside service area or service days/times.**	Commute Options[1], CET[2]	✓	✓		
	Marketing and Branding					
3.6	**Market regular interlining of routes to passengers as a convenience feature.** Initially, this item refers to marketing existing route interlining practices (e.g., route 1-3, 2-4, 5-6).	CET[1]	✓			✓

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
3.7	**Build upon the "open" transit data published in Google Transit.** Make trip planning capabilities available on the CET, City of Bend, and Commute Options websites. Provide real-time transit arrival information including on mobile devices (when available). Market enhancements to online trip planning and real-time information to current and potential riders.	CET[1], City of Bend[2], BMPO[2], Commute Options[2]	✓	✓	✓	
3.6	**Develop capabilities for targeted communication with customers including on their mobile devices (via text messages, e-mail, social media, etc.), such as to provide updates on delays or snow routes.**	CET[1]		✓		
3.7	**Develop a plan to complete the transition from BAT to CET in all system branding, including vehicles and stops.**	CET[1], City of Bend[2]		✓		
3.8	**Conduct a comprehensive assessment of CET's marketing and branding and develop action plan.** This could include an assessment and update of the Rider Guide, website, social media, bus stop materials, etc.	CET[1], BMPO[2]	✓	✓		
3.9	**Review / update marketing materials on a regular basis.** This could include recommended improvements outlined in the Marketing and Branding section of Chapter 8, such as enhancements of the Rider Guide and increased development of social media (assuming staff is able to monitor and keep sites up-to-date). In addition, consider marketing regular interlining of routes to passengers as a convenience feature.	CET[1], Commute Options[1]				Every 2 years
3.10	**Develop marketing materials for service between Bend and Redmond Airport.** Coordinate service with major flight departure/arrival times to the extent possible and place marketing materials at strategic locations.	CET[1]		✓		Annually
	Performance Standards					
3.11	▪ **Evaluate use of automatic passenger counters (APCs) to enhance data collection capabilities.** Based on outcome of evaluation, include APC technology in new vehicle acquisitions.	CET[1]		✓	✓	
3.12	**Develop strategies to reduce the high rate of cancellations (potentially related to the large number of subscription trips).**	CET[1]		✓		

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

Action #	Recommended Actions	Lead Implementer(s)	First-year	Short-Term	Mid-Term	Ongoing/ Monitor
	Goal 4: Provide infrastructure and land use planning to support transit					
4.1	**Adopt a Primary Transit Corridors policy.** This policy should identify corridors with the highest potential ridership (see Primary Transit Corridors map, Figure 7-4) where the City, BMPO, and CET will prioritize the highest level of transit service over time and where major transit-supportive land uses are encouraged to locate. This policy should be reviewed periodically to ensure the primary transit corridors reflect current and planned land use intensity.	City of Bend[1], BMPO[2], CET[2]	✓	✓		Every 5 years
4.2	**Develop a transit overlay zoning ordinance and adopt it around primary transit corridors and/or major transit nodes (e.g., Hawthorne Station).** The Future Opportunities memo provides a more in-depth discussion of elements that could be addressed in such as ordinance and other opportunities to incorporate transit-supportive elements into the existing City code.	City of Bend[1], BMPO[2]		✓		
4.3	**Require review of transit service needs as part of the development review process.** Develop a protocol for integrating assessment of transit requirements (including involvement of CET staff, and funding contribution for staff time) into early review of development/land use proposals, particularly those with potentially significant impact on transit ridership and/or where the proposed use is located away from transit.	City of Bend[1], BMPO[2], CET[2]		✓		
4.4	**Coordinate public facility master plans (e.g., sewer, water, etc.) with priorities/opportunities for intensifying land use along primary transit corridors.** In particular, consider prioritizing facility upgrades that would relieve capacity constraints and enable development.	City of Bend[1], BMPO[2], CET[2]		✓		
4.5	**Evaluate a mechanism to formalize developer contributions to funding for transit infrastructure.**	City of Bend[1], BMPO[2]		✓		

Responsibility: 1=Lead, 2=Support

Time Frames: First Year=First year of short-term time frame, Short-Term=Years 1-3, Mid-Term=Years 4-10

APPENDICES

Appendix A Land Use and Transit Demand

Appendix B Future Service Concepts – Supporting Detail

Appendix C Funding Options

Appendix D Updated Bend Urbanized Area Map

Meeting Agenda

Residential Technical Advisory Committee – Meeting 9
Tuesday July 21, 2015 10 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 provide feedback on preliminary amendments to housing-related policies in the General Plan
- Review and approve residential land use efficiency measures to advance towards adoption

The first main agenda item for this meeting is to discuss an initial set of amendments to housing-related General Plan policies. These amendments are intended to support the 2015 update to the Housing Needs Analysis (HNA) conducted in response to the UGB remand. Many of the General Plan housing policies are out of date – the amendments include a general clean-up (deletion) of outdated policies for consideration by the TAC. Revisions based on TAC feedback will be brought back in August. In addition, residential land policies may be brought forward for TAC review as part of the urbanization policies to be discussed in the fall.

The other main item on the agenda for this meeting is to review proposed residential land use efficiency measures. The project team has conducted a detailed review of how the various efficiency measure concepts are addressed in the code today, including recent amendments, and the "how and when" of efficiency measure adoption. The Residential TAC's role is to provide advice on: (1) whether the measures identified in the attached tables are the right measures to achieve the City's needed housing mix and density, and efficient use of land inside the current UGB; and (2) which measures are most important and the highest priority for adoption.

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.

Agenda

1.	**Welcome** a. Welcome and convene b. Where we are in the process – a brief look back and look forward c. Review and approve minutes	10:00 AM Chair Joe Dills, Brian Rankin
2.	**Proposed Amendments to Residential Policies** *Information and discussion* a. Presentation: highlights of proposed policy amendments b. TAC discussion: are there questions or concerns regarding any of the proposed policy amendments?	10:10 AM Damian Syrnyk & Mary Dorman, APG
3.	**Residential Land Use Efficiency Measures** *Information, discussion and action* a. Presentation: highlights of proposed residential efficiency measures – legal context, adoption strategies, and priorities b. TAC discussion and action: • are the measures identified the right measures to achieve the City's needed housing mix and density, and efficient use of land inside the current UGB? • which measures are most important and the highest priority for adoption?	11:10 AM Becky Hewitt, APG
4.	**Public Comment**	12:15 PM
5.	**Project News and Adjourn**	12:25 PM

City of Bend
Residential Lands Technical Advisory Committee
Meeting Notes
Date: February 23, 2015

The Residential Lands TAC held its regular meeting at 10:00 am on Monday, February 23, 2015 in the Council Chambers of Bend City Hall. The meeting was called to order at 10:02 am by Joe Dills of the Angelo Planning Group (APG).

Roll Call (members present)

☐ Kristina Barragan	☐ Gordon Howard	☐ Kirk Schueler
☐ Gary Everett	☐ Thomas Kemper	☐ Don Senecal
☐ David Ford	☐ Katrina Langenderfer	☐ Sidney Snyder
☐ Laura Fritz	☐ Michael O'Neil	☐ Stacy Stemach
☐ Allen Johnson	☐ Kurt Petrich	

Agenda

1. Welcome

Joe called the meeting to order at 10:02 am. He mentioned that the purpose of today's meeting is to forward the TAC's recommendations to the UGB Steering Committee (USC) for their March 19, 2015 meeting. The TAC is being asked to forward bookends as some working conclusions of Phase 1 of the project. The package of materials for this meeting make up the bookends. Brian concluded with a comment that the TAC should look at what we – TAC and team – accomplished in Phase 1.

2. Draft Phase 1 Growth Scenarios

a. Presentation

Andrew Parrish of APG gave a power point presentation on the Draft Phase 2 Growth Scenarios, which is enclosed with these minutes (enclosed). The scenarios created to date include three (3) maps, each analyzed with three (3) different efficiency measure packages; this represents a 3 x 3 grid of scenarios. Scenarios 1, 2, and 3 were paired with Efficiency Measure packages A, B, and C to create the grid. Scenario 1 represented the Base Case; Scenario 2 represents an "intensify" scenario, and Scenario 3 represented an "intensity and increase mixing" scenario. He presented a Phase 1 Growth Scenario Map based on two spatial scenarios and two efficiency measure packages. One version of the scenario is now identified as Scenario 4b; the second scenario, Scenario 5c, is essentially the same as 4b with the exception of housing added at the City's Juniper Ridge property.

He went on to describe the scenario components. The Scenario Components include the buildable lands inventory (BLI) designations, painting of development types, development type assumptions, the Urban Form Map (Handed out to the TAC), and the capacity analysis presented in Tables 10 and 11 of the meeting packet. He discussed the differences in land use at Juniper Ridge in the three main scenarios (Base, 4b, 5c), and highlighted that an estimated 4,079 units were included on infill lands.

With respect to Employment, he highlighted the difference between the three scenarios, and compared the capacity of the UGB to the need for employment. He concluded his presentation by discussing how accessory dwelling units (ADU's) were accounted for in the modeling, including a presentation of historical trends from 2001 to 2014 and a recommendation to the TAC for adding 165 ADU's to the capacity of the land inside the current UGB to help meet the need for Single Family Attached housing.

b. TAC discussion

The TAC discussion following this presentation raised the following questions, points, and comments:

- The difference between Scenarios 4b and 5c is the addition of housing in Scenario 5c.
- Packages B and C are the respective efficiency measure packages
- The ADU's are based on an historic trends; does not include any efficiency measures that would have the effect of increasing the number of ADU's.
- Table 2 shows the capacity for buildout
- CCR's – this work should be wrapped now; and included as a development type.
- For those lots identified as having CCR's, their assumed development is one unit per lot
- OSU Cascades new location – painting includes institutional, some housing, some mixed use
- Single family detached units in the RH Zone (See Table 2 and Page 11 of packet).
- Juniper Ridge – whether it can be developed during the planning period, discussion with Employment TAC; agreements with ODOT over improvements; Sewer improvements in the works, whether JR should be included as land for the capacity estimate, whether it should be removed from UGB. Is the industrial land it is intended to provide still needed? Serviceability of JR during the planning period.
- Include JR in the inventory, but don't take it out of the UGB. Consider Barker's 5 case and LCDC's and Metro's decision on including Stafford triangle in the urban reserve. If JR were removed and additional and brought in to replace it the City still needs to have public facilities planned for serving the new land brought into the UGB.
- Efficiency measures – have to be adopted at the time the City submits the proposal to the state; Table 4 on page 13 of the packet includes a capacity of the current UGB for housing, of which 30% is included as infill – 4,079 lots – with a total capacity of 12, 477 units. Question of how many lots could be redeveloped, what if land owner preferences do not result in further infill or redevelopment. Does the city get locked into building infrastructure to support development that may not happen in the planning period?

Joe brought the discussion to a closure by clarifying that because we have public facility plans for improvements to serve Juniper Ridge, this capacity should be included in the estimate. This can be considered down the road. One of the decisions before the TAC was defining the bookends for Phase 1 as 4b and 5c, and approving an Urban Form Map as one of the components. The TAC further discussed the proposed recommendations shown on page 21 of the packet, which are reproduced below for reference:

RECOMMENDATION FROM TAC TO USC

The project team recommends that the TAC approve the Phase 1 Growth Scenarios and recommend them to the UGB Steering Committee, as follows:

1. The Phase 1 Growth Scenarios is comprised of the package of:
a. Phase 1 Growth Scenario Map
b. Efficiency measures (listed in Appendix C)
c. Capacity analysis
d. Urban Form Map

2. The Phase 1 Growth Scenarios are subject to further refinement in Phase 2.

The TAC discussion that followed addressed:

- Land west of Summit High School – how its colored in scenario map
- Land due east of the high school
- Pages 12 and 13 of the meeting packet; numbers for Scenarios 4b and 5c
- Medical employment – included in employment numbers for Office category
- Employment numbers presented on pages 14 – 15 – no further comments after this discussion
- Pages 16 through 17 of the packet – include Table 7 on housing units added by opportunity area and included in capacity
- System Development Charges (SDCs) – not factored into estimates and whether they current level would affect further development under the capacity estimate.
- Pages 18 through 21 of the memo – efficiency measures, such as those for encouraging ADU's – need to be done right.
- Haven't focused on transit corridors yet. City still has requirement in remand to reduce vehicle miles traveled (VMT). This will likely include completing an integrated land use and transportation plan.
- Consider non-transportation facility strategies, such as transportation demand management (TDM), as St. Charles and OSU/COCC.

c. Motions

Following the TAC discussion of the motions proposed on page 21 of the meeting packet, Joe asked for a motion. He clarified that we can add financial incentives to the potential list of things to consider in Phase 2 for efficiency measures. Al moved approval of 1(a) through 1(d), Sid provided a second to the motion, with the acknowledgement that additional efficiency measures are possible. The motion passed unanimously.

Following this motion and vote, Joe asked for a motion on #2 – "The Phase 1 Growth Scenarios are subject to further refinement in Phase 2." These refinements include four bulleted items presented at the top of page 21, and reproduced below for reference:

- Further analysis of efficiency measures and a revised set of recommended measures
- Potential spatial refinements, including a recommended scenario for Juniper Ridge and other possible changes that would be compatible with different boundary scenarios.
- Conversion of needed housing units and jobs to acres of land and identification of specific recommended Plan designations both inside and outside the UGB.
- Estimate of land needed for other purposes outside the UGB such as schools, parks, "other lands," roads, and other infrastructure.

In addition to these four (4) bullets, Joe recommended adding additional bullets for the Phase 2 analysis to consider transit, further analysis of ADU's for yield, not precluding new efficiency measures from coming into the conversation, and additional financial incentives:

- 5th bullet: Specific analysis of VMT/capita, including potential for transit;
- 6th bullet: Accessory Dwelling Units (ADU's)
- 7th bullet: Further analysis of likely yield of efficiency measures during planning period.
- 8th bullet: Open table for more efficiency measures
- 9th bullet: Explore additional incentives (parks SDCs)

Sid moved approval of recommendation two with the four bullets proposed on page 21 and the additional bullets proposed above. Gary seconded the motion. The motion passed unanimously.

3. Proposed TAC Structure for Phase 2

Brian asked for those TAC members who are interested in continuing to serve on the TAC in Phase 2 to contact him. Al mentioned he was not interested. The Residential TAC will reconvene in Phase 2 as needed to handle certain follow up work. The goal is to shoot for April of 2016 to submit the proposed UGB amendment to the Department of Land Conservation and Development (DLCD).

4. Public Comments

There was no public comment to the TAC.

5. Project New and Adjourn

There was no additional project news. Joe adjourned the meeting at 11:53 am.

Action Items/Next Steps

Action	Assigned To
1. Approve Phase 1 Growth Scenarios package, comprised of: **a. Phase 1 Growth Scenarios Map** **b. Efficiency Measures (listed in Appendix C)** **c. Capacity Analysis** **d. Urban Form Map**	✓ **Done**

2. Approve motion that Phase 1 Growth Scenarios are subject to further refinement in Phase 2, including the following five (5) bullets: • **Further analysis of efficiency measures and a revised set of recommended measures** • **Potential spatial refinements, including a recommended scenario for Juniper Ridge and other possible changes that would be compatible with different boundary scenarios.** • **Conversion of needed housing units and jobs to acres of land and identification of specific recommended Plan designations both inside and outside the UGB.** • **Estimate of land needed for other purposes outside the UGB such as schools, parks, "other lands," roads, and other infrastructure.** • **Specific analysis of VMT/capita, including potential for transit;** • **Accessory Dwelling Units (ADU's)** • **Further analysis of likely yield of efficiency measures during planning period.** • **Open table for more efficiency measures** • **Explore additional incentives (parks SDCs)**	✓ **Done**

Memorandum

July 15, 2015

To: Residential TAC
Cc: Project Team
From: Angelo Planning Group and Bend Growth Management Department Staff
Re: Proposed Amendments to Bend General Plan - Residential Policies

OVERVIEW

General Plan Context

According to state law (ORS 197.010(1)), all cities must have properly prepared and coordinated comprehensive plans that are intended to ensure livability in Oregon. These comprehensive plans must achieve the following objectives:

- be adopted by the appropriate governing body at the local and state levels
- be an expression of public policy in the form of policy statements, generalized maps and standards and guidelines
- be the basis for more specific rules and land use regulations which implement the policies expressed through the comprehensive plans
- be prepared to assure that all public actions are consistent and coordinated with the policies expressed through the comprehensive plans
- be regularly reviewed and, if necessary, amended to keep them consistent with the changing needs and desires of the public they are designed to serve.

A variety of court cases establish that a comprehensive plan is the comprehensive land use planning instrument for a city and must be implemented through zoning ordinances which conform to the plan. Policy language should provide a clear foundation for future actions and subsequent code language. It should also not be overly specific; detailed language with precise standards should be reserved for the zoning code. This helps to avoid frequent updates to the policy language.

Prior decisions of the TAC associated with needed housing mix and densities and potential code amendments to support more efficient use of residential lands should ideally be represented in the form of policy direction in the Plan so they can be implemented. A new Urbanization Chapter will be written for the Plan to consolidate policies relating to urban form, opportunity sites, and expansion areas. Policies specific to residential and mixed use areas may

be repeated in the Residential Lands Chapter, and a first cut at new policies is included with this memo.

Residential Policies

This memo presents proposed amendments to Chapter 4 (Population and Demographics) and Chapter 5 (Housing and Residential Lands) of the Bend General Plan. The intent of these amendments is to update policy language to achieve the following objectives:

- Delete outdated policy language. Many existing policies refer to actions or programs that have been completed or are no longer relevant.
- Support the 2015 update to the Housing Needs Analysis (HNA) conducted in response to the UGB remand. Specifically, the HNA calls for a needed housing mix that is not currently reflected in the Chapter 5 policies.
- Remove Chapter 4 from the General Plan and relocate population and demographic information to the Housing Needs Analysis, which would be an appendix to the General Plan. This reflects approved legislation[1] assigning coordinated population forecasting to the Population Research Center (PRC) at Portland State University (PSU). The PRC will provide coordinated forecasts with a 50-year forecast horizon for Oregon counties and cities no less than once every 4 years.
- Establish a policy framework to support new efficiency measures for Residential lands and other aspects of the UGB Remand project.

This memo does not include changes to the background information contained in Chapter 5; it is focused only on policy language. Updates to the background information in Chapter 5 will be presented to the Residential Technical Advisory Committee (Residential TAC) at the August 25 meeting, using the new template for the Bend General Plan as described below. Proposed amendments do not suggest a substantial shift in policy direction or approach. This emphasis is important: updated policies are targeted to supporting the UGB decision; they are not intended to be comprehensive updates of General Plan chapters.

The framework for the proposed policy changes is based on input from city staff, a set of proposed amendments from a 2008 General Plan update to Chapter 5 that was adopted but not acknowledged, and policy direction indicated in the draft HNA (2015), which is currently in internal review with the project team and will be provided to the Residential TAC for review in August.

New Template for Bend General Plan

The Phase 2 scope for the UGB Remand Project includes a task for APG to prepare a template for updates to General Plan text, policies and graphics to make the document more graphically appealing and user friendly. The template will be used for updates to General Plan background text and policies for housing, employment, urbanization, public facilities, and transportation that

[1] House Bill 2253, effective July 1, 2013.

will be needed to support the UGB decision. Future updates to other General Plan chapters following the UGB decision will also use the new template. Updates to the background text and policies for the Housing and the Economy chapters will be presented in the new template format for the August 25 TAC meeting. Other chapters will likely be reorganized to match the new overall format of the document, and outdated policies may removed. However, they will not be subject to the same level of revision as the housing, employment, and urbanization chapters.

Bend's 1998 General Plan includes a substantial amount of very dated background information (25 pages of text) in Chapter 5. As part of the current work under the Remand, the City is proposing to adopt the 2015 BLI and HNA as "ancillary" documents to the General Plan and include them in an Appendix. The background section of the General Plan Chapter will be much shorter (roughly 3 pages instead of 25 pages) and will draw on highlights from the 2015 BLI and HNA to focus on key trends and set the context for the policies.

The 1998 General Plan also includes a substantial amount of overlap and redundancy between policies that are located in different chapters. Discussion is on-going regarding the appropriate location for policies in the updated General Plan, particularly new policies relating to urbanization strategies, efficiency measures, opportunity sites and urban form. The project team is considering consolidating these policies in a new Urbanization Chapter of the General Plan, which would focus on the city's growth strategy and urban form goals. Drafts of the Urbanization Chapter policies (in the new template) will be shared with the Residential TAC in the fall/winter.

Guidance from the Remand

The Remand includes detailed guidance to the City on additional work needed on the Buildable Lands Inventory (BLI), the Housing Needs Analysis (HNA) and Efficiency Measures to meet the requirements of the goals, statutes and rules relating to Housing and the UGB. The Remand also requires that the city revise its findings and chapter 5 of its comprehensive plan consistent with the additional work. Beyond that, the Remand does not provide specific directives relating to General Plan policies.

Formatting of Proposed Policy Changes

Proposed amendments are presented in an annotated table with language in underline/strikeout format; underlined text indicates new policy language and ~~strikeout~~ text indicates deleted language. The left column contains the amended policy language and the right column provides a brief explanation for the change. Policy language that has not been amended is retained in plain text. Policies will need to be renumbered as appropriate for final adoption.

The Residential TAC will also be discussing efficiency measures at the July 21 meeting. It is anticipated that additional housing policy changes may be needed based on the TAC direction

on the efficiency measures and/or strategies related to the Integrated Land Use and Transportation Plan, if one is required[2].

[2] An Integrated Land Use and Transportation Plan (ILUTP) will be required of the city under OAR 660-012-0035 (the Transportation Planning Rule) if the proposed UGB expansion is projected to result in an increase in Vehicle Miles Traveled (VMT) per capita at the end of the planning horizon (2028).

PROPOSED POLICY AMENDMENTS

Chapter 4 Population and Demographics

Proposed Policy Amendment	Rationale for Amendments
POLICIES • ~~The city shall review and update the urban area population forecast every five years.~~ • ~~The city shall update income levels, household size, and other demographic information for the urban area after every U.S. census, or when other data for the City of Bend are available.~~	Deleting this chapter reflects approved legislation assigning coordinated population forecasting to the Population Research Center (PRC) at Portland State University (PSU). The PRC will provide coordinated forecasts with a 50-year forecast horizon for Oregon counties and cities no less than once every 4 years.

Chapter 5 Housing and Residential Lands

Proposed Policy Amendment	Rationale for Amendments
GOALS *"Throughout the public workshops, visioning exercises, and committee meetings, one of the common themes was the desire to keep our neighborhoods livable. Bend will continue to offer a variety of living styles and residential choices, creating attractive neighborhoods located close to schools, parks, shopping and employment. It is a goal of the General Plan to accommodate the varied housing needs of citizens with particular concern for safety, affordability, open space, and a sense of community.* *A transportation system of streets, bicycle ways, and trails that connect our neighborhoods to schools, parks, shopping and employment and to other neighborhoods is an important factor in building and maintaining a sense of community. It is a goal that these neighborhood transportation linkages shall provide ways to move about the*	These existing goals are presented in paragraph format at the beginning of Chapter 5. Amendments to the format and substance of the goals may be needed to reflect UGB Remand requirements and findings, new policy direction on efficiency measures, and TAC input.

community, and also create a positive community image through design elements that provide for safe and attractive neighborhoods. *The need for more housing in the urban area and the ever-increasing price of land can both work against preserving natural features in new developments. It is a goal that the General Plan policies and development standards that promote more flexible and creative subdivision designs will help preserve natural features, while containing development within the Urban Growth Boundary."*	
POLICIES ***Population Forecasts*** • The City will coordinate with and provide data to Portland State University for their preparation of a coordinated 50-year forecast for the urban growth boundary as scheduled by Portland State University. • The city should consider updating the Housing Needs Analysis after the release of a final population forecast for Bend by Portland State University. This update will include any needed data, including but not limited to household size, income levels, and demographic characteristics. • The city should use the regular updates of the population forecasts and Housing Needs Analysis to monitor housing trends relative to the planned housing mix and densities assumed within the Urban Growth Boundary.	New policy language to reflect the new approach to regular updates to population forecasts and related updates to HNA. Population forecasts and HNA will be updated every 4-5 years and adopted as ancillary documents to the General Plan. Updating the HNA may drive the need to amend the UGB. This is more of a policy choice by the City Council, than a technical study. Policies directing analysis would be fine, but not necessarily the HNA.
Housing mix, density and affordability • The City will apply plan designations, zoning districts, and development code regulations to allow and encourage the mix of housing assumed in the adopted HNA. 21. The purpose of maximum densities recommended on the Plan Map ~~shall be recognized in order~~ is to maintain proper relationships between proposed public	These policies have been moved up earlier in Chapter 5. Renumbering of policies will be done later. New policy to recognize and implement the updated HNA. Policy 21 revised to articulate the purpose for minimum and maximum densities and

facilities and services and population distribution. The purpose of minimum densities is to assure efficiency of land use, particularly for larger sites.	provide policy support for proposed efficiency measures relating to minimum densities.
~~22. In developing a subdivision, Planned Unit Development, or multifamily housing project the following uses and natural conditions may be deducted from the gross acreage of the property for the purpose of density calculations:~~ ~~• areas dedicated for public park use or public open space;~~ ~~• areas developed for active recreational uses such as golf courses, tennis courts, swimming pools, and similar uses;~~ ~~• land in excess of 25 percent slope that is not developed;~~ ~~• natural wetlands and riparian areas that remain in a natural condition; and,~~ ~~• "Areas of Special Interest" designated on the General Plan Land Use Map.~~	Policy 22 is more appropriate as code language and may conflict with existing code provisions. Additional discussion will be needed regarding calculation of minimum/maximum densities (gross/net acres), particularly for master plan areas.
~~23. The city shall rezone residential lands to the designated General Plan densities when sewer service is available to the area.~~ • The City will create incentives and remove barriers to development of a variety of housing types in low- and medium-density residential zones, consistent with the density ranges and housing types allowed in the zone. • The City will apply innovative and flexible zoning tools to allow for a mix of housing types and densities, including but not limited to development code language that allows for accessory dwelling units and small lot (cottage) development and incentives for housing in mixed use developments.	Policy 23 is overly broad and compels the city to upzone when it may not be supported by the residents. Without a policy, the city would process zone changes per the development code. Instead of being deleted, it could use permissive language such as "will encourage." New policies to generally support efficiency measures and achieve housing mix identified in the updated HNA.
~~24. Accessory dwellings to a single family home may be allowed in new subdivisions or Planned Unit Developments, provided that the maximum General Plan density is not exceeded. The city will calculate accessory dwelling density using the same fraction of a full dwelling unit provided in the Systems Development Charges resolution~~. 25. The city and county will work with public and non-profit organizations that provide	Policy 24 deleted - accessory dwellings are considered a housing type in the MMA and therefore do not need to be called out in policy.

affordable housing within the urban area.	
~~26. The city shall evaluate the community's housing mix and density levels every five years beginning in 2000.~~	Policy 26 replaced with new policies under Population Forecasts above. Trying to avoid reference to specific years in the General Plan that are quickly out of date.
• <u>The City will require master planning for large development sites (+20 acres) to ensure that a mix of housing types and densities will be provided.</u>	New policy to implement efficiency measures and achieve the housing mix/densities identified in the updated HNA through master planning.
~~27. When new commercial centers are created in developing residential areas, the city and county may allow up to 20 acres of medium-density residential housing within one-eighth of a mile of the commercial center.~~	Policy 27 is old and more multi-family housing may be needed on a case by case basis.
28. Existing low-density residential areas that are adjacent to commercial or mixed use development at the south or north ends of the commercial corridor may be re-designated for medium-density development.	
• <u>The City will support redesignation of suitable low density areas that are adjacent to transit corridors for medium-density development.</u>	New policy to support transition to transit-supportive densities where appropriate.
29. The city shall provide special redevelopment standards for manufactured home parks as an incentive to develop affordable housing.	
30. Density bonuses may be considered as an incentive to providing affordable housing.	
• <u>The City will monitor parking needs for residential uses and set parking requirements to the lowest standards that will meet the community's needs in order to reduce land utilized for parking, reduce the cost of housing development, and encourage a more walkable development pattern.</u>	New policy to support efficiency measures related to reduced parking.
• <u>The City will assist in identifying, obtaining and leveraging funding sources for the development of new housing for very low, low, and moderate - income residents, as determined by appropriate percentages of Area Median Family income in the Housing Needs Assessment.</u>	New policy to implement efficiency measures and achieve the housing mix/densities identified in the updated HNA. The City Council recently extended the

• The City will monitor the results of actions and programs funded through the use of the city's Affordable Housing Fee Trust Fund.	sunset date for the Affordable Housing Fee. It makes sense to monitor the results of all adopted efficiency measures, but the details and schedule for monitoring do not need to be specified in the plan policy.
Residential compatibility ~~1. Future development and local development standards shall recognize and respect the character of existing areas.~~ ~~2. In areas where existing urban level development has an established lot size pattern, new infill subdivision or PUD developments shall respect have a compatible lot transition that respects the number of adjoining lots, lot size and building setbacks of the existing development while developing residential densities within the range for the underlying zone. New developments may have smaller lots or varying housing types internal to the development.~~ ~~3. The development of infill areas may, as an alternative to the standard subdivision review process, proceed through a public involvement process that would allow the maximum flexibility of design and provide for neighborhood participation.~~ 4. Private and public nonresidential uses are necessary and ~~should~~ will be permitted within residential areas for the convenience and safety of the ~~people~~ residents. Such facilities shall be compatible with surrounding developments, and their appearance should enhance the area. 5. Of necessity, nonresidential uses will have to abut residential areas in different parts of the community. In these instances, any nonresidential use ~~shall~~ will be subject to special development standards in terms of setbacks, landscaping, sign regulations, and building design. 6. Class A manufactured homes ~~shall~~ will be permitted either in ~~as part of~~ a	Policies 1 - 3, along with implementing Development Code standards in 2.1.300(G), have inhibited infill development inside the UGB. Code amendments before the Planning Commission in June included significant revisions to the residential compatibility standards to apply them only to lots abutting RL land and to affect only setbacks (removing lot size restrictions).

manufactured home park, ~~or part of a planned unit development,~~ or on individual lots. Non-Class A manufactured homes may be allowed in manufactured home parks or as replacement for non-conforming manufactured homes subject to conditional use approval. 7. Manufactured homes located on individual lots in areas already developed with conventional housing shall be subject to special siting standards. 8. Neighborhood commercial shopping areas may be located within residential districts and ~~shall~~ have development standards that recognize the residential area. 9. In many cases, ~~home occupations~~ small home-based businesses are a legitimate use within residential areas, and ~~shall~~ will be permitted subject to design standards in the Development Code. ~~provided that the use displays no outward manifestations of a business.~~ 10. Certain private recreational uses, such as golf courses or tennis courts, can be successfully integrated into residential areas provided the location, design, and operation are compatible with surrounding residential developments. 11. Residential areas ~~shall~~ will offer a wide variety of housing types in locations best suited to each housing type. ~~12. Rehabilitation or redevelopment of older residential areas shall be encouraged.~~	Policy 12 deleted because it is so broad and doesn't provide guidance for planning or land use decisions.
Neighborhood Appearance (See related policies in Chapter 9, Community Appearance.) 13. Above-ground installations, such as water and sewer pumping stations, power transformer substations or natural gas pumping stations, shall be screened and designed to blend with the character of the area in which they are located. 14. All new developments shall include trees, as practical, in the planter strip between the curb and sidewalk. ~~Such trees shall be consistent with the city's Urban~~	Revise Policy 14 - City does not have an Urban Forestry Plan.

~~Forestry Plan.~~ 15. Walls and fences along arterial or collector streets shall be subject to special design standards. The fence or wall, and the area between the fence or wall and the curb or pavement, shall be landscaped and maintained by abutting property owner(s) or homeowners association. ~~16. Walls and fences in the setback area between the front of the house and the adjacent street shall not exceed 3½ feet in height.~~ 17. All residential development ~~should~~ will respect the natural ground cover of the area ~~insofar as possible,~~ and existing and mature trees within the community ~~should~~ shall be preserved to the greatest extent practicable. 18. The city encourages flexibility in design to promote safety, livability and preservation of natural features. ~~Lot sizes as small as 4,000 square feet may be applied for in the RS zone to meet these objectives.~~ The City will provide development code standards to allow flexibility on dimensional standards, such as lot size and setbacks, to achieve these objectives. ~~19. To encourage flexibility in design and preservation of natural features in areas planned for medium density housing, lots as small as 2,500 square feet shall be allowed in the RM-10 and RM zoning districts.~~ 20. Hillside areas shall be given special consideration in site design by both the developer and local regulations. Building sites, streets, and other improvements shall be designed and permitted in a manner that will minimize excessive cuts and fills and other erosion-producing changes. (Note: see related policies in Chapter 10, Natural Forces.)	Policy 16 deleted because it is not policy language and is more appropriate for code standards (implemented in 3.2.500) Policy 18 revised to support efficiency measures and remove development standards (lot sizes) from the policy language. Policy 19 deleted and replaced with more general language in Policy 18.
Transportation connectivity (See related policies in Chapter 7, Transportation Systems, and Chapter 3, Community Connections.) 31. Medium-and high-density residential developments ~~shall~~ should be located ~~where~~	Policies revised by staff to streamline and clarify language.

~~they~~ within ¼ mile of transit corridors ~~have good access to arterial streets~~ and ~~be near~~ commercial services, employment and public open space to provide the maximum ~~convenience~~ access to the highest concentrations of population. 32. Street widths on ~~public~~ residential local streets shall be as narrow as possible to preserve safety, and limit the effects of surface runoff and excess speed. ~~may vary depending on topography, anticipated traffic volumes, natural features that warrant protection, and existing street patterns in the neighborhood. Narrower streets may have limited on-street parking to ensure emergency vehicle access.~~ 33. The city may require adjustments to the street design ~~pattern or installation of traffic calming devices~~ in order to discourage high speed traffic on local residential streets. 34. In all residential areas the city should ~~shall~~ encourage the use of open space amenities such as landscaped traffic islands or extra-width planting strips. 35. Schools and parks may be distributed throughout the residential sections of the community, and ~~every~~ dwelling units ~~in the area~~ should ~~be within convenient distance of~~ have safe and convenient access to ~~a~~ schools ~~or~~ and ~~a~~ parks based on the standards of the school and park districts. 36. Sidewalks ~~shall~~ will be required in all new ~~residential~~ developments. Separated sidewalks ~~shall~~ will be required~~, as practical,~~ on all new streets ~~that provide or will provide access to schools, parks, or commercial areas~~. However, an alternative system of walkways ~~and trails~~ that provide adequate pedestrian circulation may be approved. 37. Per the city's Transportation Systems Plan ~~Efforts shall the city shall continue to~~ the City will complete or connect ~~existing walks along~~ priority walkways on routes to schools, parks, or commercial areas. 38. Bikeways shall be considered as ~~both a circulation and recreation~~ a transportation element ~~in the Plan~~, and adequate facilities ~~should~~ shall be ~~obtained for this~~	

~~purpose~~ ~~in all~~ provided as a part of new development. 39. Efforts ~~shall~~ will be made to extend trails, pedestrian ways, and bikeways through existing residential areas. Existing trails, pedestrian ways, and bikeways will be extended through new developments to allow further extension and promote alternative modes of travel. 40. To encourage connectivity and pedestrian access, residential block length ~~shall not exceed 600 feet except for topographic constraints~~ standards shall be included in the Development Code. When existing conditions or topography prevent a cross street, a pedestrian accessway to connect the streets shall be required. 41. Residential local streets shall be developed whenever practicable to increase connectivity within and between neighborhoods. 42. Cul-de-sac and "hammer-head" residential streets may be allowed only where existing development, steep slopes, open space, or natural features prevent connections, or when the objectives of connectivity are met within the neighborhood. 43. The need for emergency ~~Emergency~~ equipment access shall be considered during any new ~~residential~~ development.	
Public utilities and services (See related policies in Chapter 1, Plan Management and Citizen Involvement and Chapter 8, Public Facilities and Services.) 44. All residential areas ~~shall~~ will be provided with community water and sewer services and other facilities necessary for safe, healthful, convenient urban living consistent with the density of development. 45. Residential development ~~shall~~ will be coordinated with other land use elements and community facilities which are consistent with projected housing densities. 46. Electric power, telephone, and cable TV distribution and service lines ~~shall~~ will be	Policy 46 revised and Policy 47 deleted

located underground in new developments. ~~Efforts shall be made to place existing utility lines underground in established residential areas.~~ ~~47. Street lighting shall be provided in all new subdivisions at the time of development. Street light fixtures shall be shielded to direct light down.~~ 48. Street names shall be unique within the county.	because they are implemented through the Development Code.
Destination Resorts ~~49. In addition to lands excluded from eligibility for destination resort siting under state law, the following lands within the Urban Area Reserve shall not be mapped as eligible for destination resort siting:~~ ~~(a) All lands owned by public agencies.~~ ~~(b) All lands zoned for surface mining.~~ ~~(c) All lands zoned SR 2 ½ and all lands platted for subdivisions.~~ ~~(d) Land for which contiguous area not otherwise removed from eligibility is less than 160 acres, except where adjoining land under the same ownership outside the Urban Area Reserve is mapped with the Deschutes County destination resort (DR) overlay.~~ ~~(e) Single parcels, or adjoining parcels in the same or related ownership (including lands outside the Urban Area Reserve) of less than 160 acres.~~ ~~(f) Lands not adjacent to either (1) F1 zoning, or (2) Deschutes County destination resort (DR) overlay adjoining F1 zoning.~~ ~~50. Destination resorts, as defined by state law, shall only be allowed in areas designated for such use as shown on the adopted destination resort map. An exception to statewide goals relating to agricultural lands, forestlands, public~~	Policies 49 and 50 deleted: Destination resorts in the UAR are regulated by Deschutes County, and are therefore not under the City's jurisdiction. These policies are not required in the Bend UGB. Same explanation applies to policies 52-55.

~~facilities and services or on the eligible lands in the urban area.~~ 51. A destination resort within the Urban Area Reserve ~~shall~~ may be served by municipal water and sewer service or an approved community water and sewer service for domestic use. • Properties that are eligible for destination resort development will lose that eligibility upon annexation into the City. ~~52. No destination resort master plan shall be approved in the Urban Area Reserve until the county, pursuant to its management agreement with the city, has adopted destination resort development standards that, at a minimum, satisfy the standards in state law.~~ ~~53. Any destination resort developed within the Urban Area Reserve shall provide a sufficient open space buffer between any development and the Deschutes National Forest lands to protect against wildfires and to protect the scenic values and wildlife values of the forest.~~ ~~54. Destination resorts shall provide for any arterial or collector streets that are shown on the transportation system plan map to be extended through the site, or as needed as a result of a traffic study.~~ ~~55. Destination resorts shall provide for pedestrian and bicycle access through the development from the urban area to the National Forest and/or other public lands such as parks, scenic areas, and designated trails.~~	Policy 51 revised because destination resort developers may not want urban services. New policy language to preserve urban land for urban uses rather than at rural levels of density. Policy allows urban land to develop at urban densities as assumed in the UGB Remand.
Refinement Plan Areas (See related policies in Chapter 1, Plan Management and Citizen Involvement.) 56. A refinement plan that includes residential areas may prescribe residential density limits on specific properties which differ from the density range provided for in the General Plan. However, the average density of residential development allowed within a refinement plan area shall comply with the density limitations of the	

General Plan. ~~57. The Lava Ridge Refinement Plan is adopted as part of the Bend Area General Plan.~~ ~~58. If the city and county do not adopt refinement plans for the two study areas shown on Figures 22A and 22B by January 2000, the RL zoned land in those areas shall be rezoned to RS.~~	Policies 57 and 58 no longer necessary because refinement plans have been adopted.

Memorandum

July 15, 2015

To: Residential Lands Technical Advisory Committee

Cc: UGB and Growth Scenario Technical Advisory Committee

From: Angelo Planning Group Project Team

Re: Efficiency Measures – Refined Code Concepts and Recommended Priorities

INTRODUCTION

Purpose and Background

The purposes of this memorandum are to:

1. Present efficiency measures that have been refined since they were last discussed by the Technical Advisory Committees and Steering Committee; and
2. Identify those that are a high priority for adoption.

In Phase 1 of the Remand project, the Residential Lands Technical Advisory Committee (Residential TAC) worked through a series of concepts and opportunities for increasing the efficiency of land use in Bend – examining ideas for both map-related efficiency measures and code-related efficiency measures. Initially, the Residential TAC was 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 and housing choice on large blocks of vacant land were explored in the "Land Use Efficiency Measures Context and Opportunity Sites" memorandum dated October 7, 2014. A November 10, 2014 memorandum discussed 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.

Overview

The project team has conducted a detailed review of how the various efficiency measure concepts are addressed in the code today, including recent amendments, and the "how and when" of efficiency measure adoption. The City has already adopted some of the efficiency measures identified in previous memos. Others are already in process. The team has identified additional measures that can be advanced through code clean-up efforts or through their own process with the Planning Commission. Others will be packaged with the UGB adoption

decision. And some may require further study or be linked to the outcomes or recommendations of other planning projects currently underway.

The efficiency measures in the attached table include both text amendments and map amendments. They are focused on residential uses, but include amendments related to encouraging housing in commercial and mixed use zones. Many of the amendments proposed are similar to concepts that have been shared with the Residential TAC before, but they have been refined through discussions with the city's current planning staff. Other amendments are new ideas to implement a concept that was identified previously.

Role of the Residential TAC

The Residential TAC's role is to provide advice on: (1) whether the measures identified in the attached tables are the right measures to achieve the City's needed housing mix and density, and efficient use of land inside the current UGB; and (2) which measures are most important and the highest priority for adoption.

In addition to describing the efficiency measures, the attached tables identify the project team's preliminary recommendations on how each of the specific measures identified might be advanced towards adoption and some initial ideas and issues related to adoption strategy. These recommendations and ideas are informational only; the process for and timing of adoption of the efficiency measures will be determined by the City Council.

LEGAL AND REMAND CONTEXT

Previous memos regarding efficiency measures have included the legal and Remand requirements relevant to efficiency measures; they are summarized in brief here as a reminder.

Statutory and Administrative Rule Requirements

State statute and administrative rule require the following:

- Cities must consider land use efficiency measures if the housing needs analysis finds that the City may not meet identified housing needs. Specifically, the city must "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."[1]
- Prior to expanding the UGB, a local government must demonstrate that the estimated needs cannot reasonably be accommodated on land already inside the UGB.[2]

[1] ORS 197.296(7)

[2] OAR 660-024-0050(4)

Remand Requirements

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 a number of efficiency measures, drawn from the city's own Residential Lands Study. That list 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. Measures identified specifically include the following:

- Measures to encourage needed housing types within additional areas of the city"[3]
- Strengthening the minimum density provisions in the existing RS and RM zones to encourage development of needed housing types[4]
- Need to determine if raising the minimum densities of the residential zones is necessary to encourage the development of needed housing[5]
- Given the apparent market demand for increasing density 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.
- Evaluating the infill capacity (including plan and zone changes) of residential lands with more than five acres that are vacant or partially vacant.[6]
- Consider measures to encourage needed housing types within additional areas of the city, including rezoning of areas along transit corridors and in neighborhood centers;[7]
- 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; [8]
- In areas where the city is planning significant public investments, consider upzoning as a means to help spread the costs of such investments; [9]
- 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.[10]

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

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

[5] Bend UGB Remand, pages 50-53.

[6] Bend UGB Remand, pages 53-54.

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

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

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

[10] DLCD Director's Report, pages 55-56.

The Remand also provides guidance on what is required regarding adoption of efficiency measures:

- 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.
- 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 [the Central Area Plan and rezoning lands along transit corridors], it must:
  - 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.
  - 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. [11]

Transportation Planning Rule

Oregon's Transportation Planning Rule (TPR) includes requirements to analyze impacts to the transportation system for certain land use actions (OAR 660-012-0060). This is a very detailed and complex section of the TPR. It has been revised multiple times and has been the subject of many appeals. In general, it requires that if an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility (e.g. by changing its functional classification, allowing access inconsistent with the functional classification, and/or degrading performance so that adopted performance standards are not met), then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the transportation facility through one of several identified remedies. Transportation analysis is generally required in order to make the required findings to address this section of the TPR if it is deemed to be applicable, though there are several exceptions specified in the rule.

The Goal 14 rule (OAR 660-024-0020(1)) provides the following option to defer application of the TPR to UGB expansion areas. The Remand did not address the applicability of OAR 660-012-0060 to the UGB decision, presumably because the City's 2008 UGB proposal did not include robust plan or code amendments for efficiency measures inside the existing UGB.

[11] Bend UGB Remand, page 56.

The project team assumes that the text amendments in the Efficiency Measures table generally will not trigger applicability of section -0060 of the TPR because the amendments do not change the maximum densities or types of development allowed under existing zones. Zoning map amendments that implement the existing plan designations are also generally expected to avoid triggering this section of the TPR. Other proposed plan/zoning map amendments in the Efficiency Measures table clearly trigger the applicability of -0060, and will require transportation analysis, likely at a level of detail beyond what is needed to support Goal 14 findings and UGB adoption. The project team is working under the assumption that the -0060 analysis can be deferred to follow UGB adoption with the adoption of a strong policy commitment to support and enable the opportunity sites to transition to higher density/mixed use development.

Integrated Land Use and Transportation Plan

The Transportation Planning Rule has another section (-0035) that addresses planning for reducing dependence on the automobile. This section generally requires Oregon's cities to take measures to reduce vehicle miles traveled (VMT) per capita. In order to comply, the city may need to identify additional land use and/or transportation policies or measures to help reduce dependence on the automobile over time. These may relate to and overlap with the efficiency measures the city is required to consider under Goal 14. The Remand also describes specific steps for the City to undertake related to related to VMT evaluation and land use policy.

The VMT requirements will be the subject of discussion at meetings of the Residential and Employment TACs in the fall and/or winter, but they are mentioned in brief here because of their relationship to the efficiency measures, and because some newly proposed efficiency measures begin to anticipate the types of land use policies that may be needed to comply with this section of the TPR (e.g. increasing density along transit corridors). Additional land use measures may be identified as the VMT results of the UGB expansion scenarios become known; these will be brought to the Residential and Employment TACs in October.

ADOPTION STRATEGIES

As noted above, the Remand provides for some flexibility on adopting efficiency measures. Given the complexities and level of analysis required to address section -0060 of the TPR, the city may choose to take advantage of this flexibility to defer some of the analysis that would be required in order to adopt all recommended efficiency measures with the UGB. Possibilities for advancing the efficiency measures include:

Adoption Strategy	Potential Suitability
Adopting text and/or map amendments directly along with the UGB adoption	Measures that are fairly straight-forward and important to UGB capacity

Adoption Strategy	Potential Suitability
Adopting policy language with the UGB adoption that is fairly specific as to what will be done, and by when	Measures that are important to UGB capacity but require further evaluation, TPR analysis, or other study that is not yet programmed
Providing recommendations to the Community Development Department (CDD) to advance through their on-going code clean-up work program, either before or after UGB adoption as they are able	Measures that do not have a major impact on capacity but are valuable and remove obstacles to achieving planned mix and density
Providing input and recommendations to other on-going or planned studies	Measures that are complex and/or highly site-specific, where a more detailed study is on-going or planned

The preliminary recommendation on adoption strategy is noted in the attached table for each efficiency measure. This is subject to change based on direction from the City Council.

EFFICIENCY MEASURE PRIORITIES

The attached table identifies a priority level for each of the proposed efficiency measures. The priority level has been assigned by the project team based on the rough magnitude of the anticipated impact and on its importance to DLCD. The highest priority items are summarized in brief below, with references to their number in the attached table.

- Increase minimum density in the RS & RM zones (RTA 1a-b)
- Revise exemptions to density standards (RTA 2)
- Increase minimum required density for master planned developments (RTA 3b)
- Reduce multifamily parking requirements for all affordable housing and all multifamily housing near transit (RTA 4)
- Change the plan designation and rezone Opportunity Area 7 (SE 15th Street) to provide a greater mix of uses and housing types and higher density, or write a policy to implement this change prior to development (RMA 1)
- Change the plan designation on Opportunity Area 9 (the COID property) to allow for housing development, or write a policy to implement this change prior to development (RMA 2)
- Adopt Bend Central Multi-modal Mixed Use Overlay Zone, or write a policy to advance implementation within a specified time frame (ETA 1a & EMA 1b)

- Create university-serving mixed use community with housing component in Opportunity Area 4 (SW Century Drive / OSU Cascades area) through implementation of the Central Westside Plan (EMA 2)

Additional measures that are relatively less important individually but are still expected to have an important cumulative effect include:

- a package of changes to dimensional standards, such as lot size and lot coverage (RTA 5a-b and RTA 6a-e);
- a set of map amendments to up-zone infill and redevelopment opportunity areas along transit corridors, or write a policy to implement this change (RMA 4-7); and
- a package of text amendments to make it easier to create duplexes, triplexes, and ADUs in the RS and RL zones (RTA 10b-d, RTA 11a-b).

Key measures that the city has already adopted or that are currently before the Planning Commission include:

- allowing duplex units outright on corner lots in RS and RL (RTA 10a);
- allowing cluster / cottage housing in the RS and RM zones (RTA 9a-b);
- reducing parking requirements for affordable housing located within 660 feet of a transit corridor (RTA 4); and
- eliminating or substantially revising residential compatibility standards for infill that limit lot sizes (RTA 7a).

MEASURING IMPACT

As the team has indicated in the past, it is difficult, if not impossible, to isolate the impact of many of the individual efficiency measures recommended, particularly the text amendments. The impact of the two packages of efficiency measures recommended for consideration by the Residential TAC was tested in January 2015. The range of impacts (excluding the effect of allowing residential uses at Juniper Ridge) was estimated at roughly 3,400 to 4,300 additional units, a 38% to 48% increase over base case. The basis for current UGB expansion scenarios is a package of efficiency measures similar to “Package C” from the January work in that they include assumptions about minimum densities, but they do not include assumed parking reductions. The recommended efficiency measures in the attached tables have been refined slightly from the package included in current modeling work (some parking reductions are now recommended, though they are targeted); however, it offers a reasonable approximation of the aggregate impact of the recommended measures: roughly 4,000 additional units relative to the base case (roughly 43%). Estimates are provided below for a few selected measures.

- The measures that the city has already adopted are estimated to yield, at most, about 300 to 500 additional units city-wide relative to the base case (roughly 3% to 5% over base case), depending on how the market responds.

- The difference in capacity on the Ward property from the combination of the proposed zone changes (approximately 10 acres RH, 30 acres RM, and 10 acres CC) and the proposed changes to the master-plan requirements is roughly an additional 700 to 750 units and roughly 100 to 150 additional jobs.
- On the Rivers Edge property, the proposed changes to the master-plan requirements (and the zone change to RS, which would be required prior to development in any case) would create greater flexibility in the amount of development on the site because of the difference in the way that sensitive land areas are treated. The allowed maximum would increase by roughly 100 units but the required minimum would decrease by roughly 170 units.

Residential Efficiency Measures: Refinement and Implementation Strategies

Recommended Code and Map Amendments, Priorities, Adoption Strategy, and Comments
TAC Review Draft: July 15, 2015

Key:

- RTA = Residential Land Potential Text Amendments
- RMA = Residential Land Potential Map Amendments
- ETA = Employment Land Potential Text Amendments
- EMA = Employment Land Potential Map Amendments
- CDD = Community Development Department
- EDD = Economic Development Department
- PC = Planning Commission
- CWP = Central Westside Project
- TPR = Transportation Planning Rule

★ = High priority item

Table 1: Residential Lands Efficiency Measures, Potential Text Amendments

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 1a ★	Increase minimum density standards in RS and RM zones	**Set minimum gross density to 4 DU/acre for RS** (vs. 2 now); max density same (7.3).	**High**	UGB project	2.1.600 Residential Densities	Would not trigger TPR since still consistent with comprehensive plan. Specifically identified in Remand. Generally would not affect existing development (see RTA 2)
RTA 1b ★		**Set minimum gross density to 12 DU/acre for RM** (vs. 7.3 now); max density same (21.3).	**High**	UGB project	2.1.600 Residential Densities	Generally would not affect existing development (see RTA 2). Most areas planned for RM are close to transit and/or commercial services. 12 units per acre is generally considered a transit-supportive density. Would not trigger TPR since still consistent with comprehensive plan. Specifically identified in Remand.
RTA 2 ★	Limit and clarify exceptions to minimum density standards	**Revise exemptions to density standards.** Rather than exempting any redevelopment or infill within an existing pattern of development: • allow replacement of an existing single family home in any residential zone; • exclude sensitive lands (including wetlands, significant trees, steep slopes, floodplains, Areas of Special Interest, and Goal 5 resources) from land area used to calculate minimum, but not maximum, density (requires revising definition of density) • exempt development on vacant lots in approved subdivisions; and • exempt infill and redevelopment on already-developed lots under an acre, provided that it does not decrease density.	**High**	UGB project	2.1.600.B Exceptions to Residential Density (paragraphs 7 and 8) and 2.1.600.A (intro text); Chapter 1.2 (definitions); 4.5.400.C.3	Because existing exemptions to density standards are broad and loosely worded, without these changes, stronger minimum density provisions may be undermined and have little impact. This will become more important as minimum density standards are increased. Needs to accompany minimum density increase so people can understand how the changes work together.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 3a	Adjust requirements for master planning to further promote desired housing types and densities	Reduce threshold to require master planned neighborhood development per 4.5.400 from 40 acres to 20 acres	Moderate to High	CDD/UGB project collaboration	4.5.400A	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.
RTA 3b ★		**Increase minimum required density for master planned developments from 60% of maximum density to 70% of maximum density for the zone** (calculated excluding acres used for non-residential development and acres of sensitive lands).	**High**	CDD/UGB project collaboration	4.5.400 C.3	This could have a fairly large impact on capacity. It is less important (and also less onerous) for the RS zone. It has more impact, but is potentially more challenging for developers, on sites with significant areas zoned RM or RH, where recent development has generally not been at the upper end of the allowed density range.
RTA 3c		Add provisions to address sites with multiple zoning districts, clarifying that the total required number of units is 70% of the maximum total that could be built, given the amount of land in each zone, but limiting ability to transfer density among zones.	Moderate	CDD/UGB project collaboration	4.5.400 C	With certain large opportunity sites potentially having multiple residential zones, it should be clear how the density standards apply, and ensure that a mix of housing types will be provided.
RTA 3d		Revise limitation on maximum density on area developed with housing to exclude land developed with non-residential uses, but not land preserved as open space, in order to make clustered residential development more feasible.	Moderate to High	CDD/UGB project collaboration	4.5.400 C.3	Current standards limit the maximum density of the area developed with housing to 110% of the maximum gross density. Implementing the clustered concept around the edges of the UGB may require additional flexibility to increase net residential density while keeping the maximum gross density the same.
RTA 4 ★	Reduce residential parking requirements to reduce development cost and allow more efficient use of land	Multifamily housing: **reduce parking requirements for all affordable housing and all multi-family within a quarter-mile of transit** 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)	Partially Done; **High** for remainder	UGB project / parking study	Table 3.3.300D	New provision adopted 05/05/15 reduced parking for affordable housing located within 660 feet of a transit corridor to one space per unit regardless of size. Parking ratios are a limiting factor on development density today.
RTA 5a	Decrease minimum lot size and dimensions in order to allow building at higher densities with single family (attached or detached) homes	Decrease minimum lot size in RM zone (and/or RM-2) for Single Family Detached from 3,000 to 2,500 square feet	Moderate	UGB project	Table 2.1.500	Smaller lot sizes make it easier to reach the upper range of the density. If not palatable everywhere, at least apply in proposed new RM-2 zone where minimum density is higher.
RTA 5b		Decrease minimum lot size in RH zone for Single Family Attached from 2,000 to 1,600 square feet	Moderate	UGB project	Table 2.1.500	The current minimum lot size limits single family attached to the very bottom end of the allowed density in the RH zone if there is very little right-of-way, but because the minimum density is a gross density standard, it may not be possible to meet the minimum density with single family attached housing in RH without including some multifamily housing as well unless the minimum lot size is decreased. With the minimum lot dimensions of 80'x20' (which relate to minimum block length), 1,600 sf is the smallest lot that would meet the width and depth standards.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 6a	Revise lot coverage and setback standards to allow greater utilization of small lots	In the RH zone, eliminate maximum lot coverage requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage	Moderate	UGB project	Table 2.1.700	Common open space of at least 10% of site area (in addition to required setbacks and required private open space) is required for multifamily developments over 20 units.
RTA 6b		In the RM zone, increase maximum lot coverage for Single Family Attached and Single Family Detached dwellings from 40% to 60%	Moderate	UGB project	Table 2.1.700	Lot coverage on small lots may need to be higher in order to allow single family homes or townhomes at a typical size.
RTA 6c		In the RS zone, increase maximum lot coverage for two-story Single Family Attached dwellings from 35% to 50%	Low	UGB project	Table 2.1.700	Minimum lot area in the RS zone is 2,000 sf for single family attached housing. This limits townhomes on 2,000 sf lots to 1,400 square feet, which is fairly small. Allowing larger townhomes would have a minor impact on the feasibility/desirability of building townhomes in the RS zone. Single story already at 50% lot coverage.
RTA 6d		Modify floor area ratio limitations on new single family detached homes and expansions: • Apply to all lots under 6,000 square feet in all residential zones, regardless of plat date or adjacent land plat date, except as modified through the Master Plan provisions (for simplicity) • Set maximum floor area to 2,000 square feet or half the lot area, whichever is greater (to ensure development is still feasible on the smallest lots)	Low to Moderate	CDD	2.1.400	The floor area ratio is more restrictive on smaller lots; in the RM zone, it would limit a home on a 2,500 square foot lot (if the reduced lot size is approved) to 1,250 square feet, which is fairly small.
RTA 6e		Reduce front setback from 10' to 5' in RM (and/or RM-2) zone for Single Family Detached and Single Family Attached, except where fronting on Collector or Arterial streets. Retain garage setback of 20' to ensure any parking of vehicles does not extend into public rights of way (sidewalk).	Low	UGB project	Table 2.1.300 and text in 2.1.300C	Would make it easier to build on smaller lots. If not palatable everywhere, at least apply in proposed new RM-2 zone where minimum density is higher.
RTA 7a	Revise or eliminate standards that restrict the development potential of infill sites	Eliminate the residential compatibility standards under 2.1.300(G) entirely or remove all restrictions on lot size.	In progress; Moderate	CDD	2.1.300G	This provision was intended to protect properties outside the UGB from incompatible development at urban levels on the inside of the boundary. It was debated by council at the time and expanded to apply to any property inside the boundary as well. This should be repealed and possibly replaced by the provisions to buffer for fire protection at the edge of the UGB. Code amendments before the Planning Commission in June include significant revisions to the residential compatibility standards to limit them to apply only to lots abutting RL land and to affect only setbacks (removing lot size restrictions).

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 7b		Change building height threshold for increased side & rear setbacks in RH & RM zones: • Increase height threshold from 20' to 30' • Apply only to buildings abutting the RS zone, not existing single-family housing in other zones	Low	CDD	Table 2.1.300 and text in 2.1.300E	This was not modeled explicitly but is a "supportive" measure. As currently written, the code would require a 2-story building in the RH or RM zone abutting any existing single family home (even in the same zone) to be set back more than the 5' minimum from the shared lot line (setbacks increase by 0.5 ft for each foot by which the building height exceeds 20 ft. when abutting single family housing or the RS zone). The RS zone height limit is 30'. When buildings in abutting higher density zones will be taller than this, it is reasonable to require those buildings to be set back more than the minimum, but buildings that are under 30' should not have to be set back more than they would be in the RS zone. May get compatibility argument in older neighborhoods.
RTA 7c		Allow exceptions to minimum lot width and depth in conformance with BDC 4.5.200 (Infill Options)	Low to Moderate	CDD	Table 2.1.500; 4.5.200	Table 2.1.500 already notes an exception to minimum lot width in the RS and RM-10 zones for "flag lots and lots served by private lanes (see BDC 4.5.200)". This does not appear to apply to lot depth or to the RM zone. Enabling the type of infill described in 4.5.200 may flexibility on lot width and/or depth, depending on the option selected.
RTA 8	Preserve the RH zone for attached housing types	Prohibit new Single Family Detached housing in the RH zone (existing single family homes would be permitted and would be allowed to be replaced)	Moderate	UGB project	Table 2.1.200 Land Uses;	There is relatively little RH-zoned land in the current UGB and many places to build single family housing other than the RH zone; multifamily capacity could be eroded if RH land is developed with single family homes. 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. This was originally proposed in 2006 when the Dev Code was updated and was not successful. If prohibiting single family detached in RH is not palatable now, consider decreasing the minimum lot size for single family detached in the RH zone to 2,000 sf (from 2,500 sf) and other modifications to development standards (e.g. reducing front setbacks and eliminating maximum lot coverage) to make it possible to meet the minimum density with Single Family Detached housing, and add a footnote in Code table to make it clear that SFD has to meet minimum density requirements for the zone.
RTA 9a	Allow cluster / cottage housing development	In RS zone, allow cluster / cottage housing up to max density in RS zone, otherwise same standards as for NW Crossing	Done	Done	New Chapter - 4.5.600 adopted 5/6/2015	New code amendments adopted 5/6/2015. Minimum density for RS was set at 4 units/acre. Will allow density bonus for affordable housing.
RTA 9b		In RM zone, allow cluster / cottage housing at gross densities allowed in the RM zone, otherwise same standards as for NW Crossing	Done	Done	New Chapter - 4.5.600 adopted 5/6/2015	New code amendments adopted 5/6/2015. Minimum density for RM was set at 12 units/acre. Will allow density bonus for affordable housing.
RTA 10a	Make it easier to develop duplexes and/or triplexes	Allow duplexes outright rather than conditionally on corner lots in the RL zone & throughout the RS zone, subject to existing standards	Done	Done	New Chapter provisions change to table 2.1.200 adopted 5/6/2015	New Code Amendments allow duplex units on corner lots in RS and RL.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 10b		Allow conversion of an existing structure to a duplex or triplex outright in RS and RL if there is no modification to the building footprint and parking requirements can be met (waive minimum lot size for duplex – subject to SFD min lot size)	Low to Moderate	CDD	Table 2.1.200	This would allow an increase in density and mix in existing neighborhoods with minimal impact. Converted units are more likely to be small and affordable than new construction. The parking requirements may limit the applicability of this option, especially if they are not reduced as recommended elsewhere in this table. This may not comply with maximum density standards – may need exception in order to enable this.
RTA 10c		For subdivisions creating 10 or more new lots, allow creation of duplex and triplex lots that meet lot size standards for those housing types in locations other than corners (require recording on plat). Allow duplex and triplex outright on lots that were identified for those uses on the plat at land division.	Low to Moderate	CDD	Table 2.1.200, Chapter 4.3? Also see 2.1.600.A	This would make it easier to build new duplex and triplex units in new neighborhoods where they can be designed to fit in from the beginning.
RTA 10d		Change parking requirements for duplexes and triplexes to regulate based on the number of bedrooms: 1 for 1 bedroom and 2 for 2 or more bedrooms	Moderate	CDD	Table 3.3.300	This is consistent with how multifamily housing parking requirements are structured and would reduce parking requirements for smaller units.
RTA 11a	Make creation of Accessory Dwelling Units (ADUs) easier	Permit ADUs outright rather than conditionally in SR 2 1/2, RL and RS zones on lots created prior to December 1998; create and apply new ADU design standards	Low to Moderate	CDD with Planning Commission	Table 2.1.200 Land Uses; Chapter 3.6	This change affects a relatively limited amount of land and would generate a relatively small number of additional units. The existing residential design standards applicable to ADUs are not working, according to current planning staff. ADUs should have their own, new easy-to-apply design standards. Creating those is outside the scope of the UGB project.
RTA 11b		ADUs: waive off-street parking requirement for ADUs added to an existing developed lot where existing home meets or will be made to meet off-street parking requirements	Low	CDD	Table 3.3.300 and development standards in 3.6.200B	Supportive measure that could remove barriers to adding ADUs to existing homes. Little potential impact on capacity.

Table 2: Residential Land Efficiency Measures, Potential Map Amendments

Ref #	Efficiency Measure Concept	Area[1]	Priority Level	Changes to Zoning Map	Changes to General Plan Map	Adoption Strategy	Comments / Notes:
RMA 1 ★	Create complete and efficient new neighborhoods on large vacant residential sites	**Opportunity Area 7: SE 15th St**	**High**	RS to a mix of RS, RM, RH, CC, and ME	RS to a mix of RS, RM, RH, CC, and ME	UGB project – policy language	Will likely require TPR analysis. Owners' master plan includes ME on the northern end, adjacent to the railroad. This may be appropriate to create a more complete community. If adoption of the plan and zone amendments is not feasible with UGB adoption due to TPR issues, an alternative may be to identify the area as an opportunity area and write policy language describing the long-term vision for the area and the general mix of uses and housing types envisioned there. Because this area will be required to undergo master-planning, and because the master plan requirements include findings of consistency with the General Plan, development on the site would have to be consistent with a General Plan policy to this effect.
RMA 2 ★	Make efficient use of constrained sites while preserving natural areas near the river through clustered housing	**Opportunity Area 9: COID Property**	**High**	None	PF to RS	UGB project – policy language	Although this has existing residential zoning, its plan designation is PF, which will have to be changed before development can occur. Will likely require TPR analysis.
RMA 3		Opportunity Area 8: River Edge	Low	RL to RS	None	Development application	Site has an existing plan/zone conflict. Current city regulations would require rezoning prior to development through a fairly simple review process. Would not trigger TPR analysis
RMA 4	Up-zoning for transit-supportive residential development and to encourage infill	Reed Market & 15th (SW corner)	Moderate	RS to RM & CC	RS to RM & CC	UGB project – policy language	Total of 16 acres; over 12 acres under common ownership. Adjacent to transit; potential for small, walkable commercial area to serve adjacent neighborhoods. Would require TPR analysis.
RMA 5		Brosterhous corner	Moderate	RS to RM	RS to RM	UGB project – policy language	Total of 27 acres; over 10 acres under common ownership. Adjacent to transit. Would require TPR analysis.
RMA 6		Bear Creek & 27th area	Low to Moderate	RL and RS to RM and/or RH	RL and RS to RM	UGB project – policy language	Would require TPR analysis. Area is adjacent to transit and walkable to commercial areas. Vacant parcels are relatively small but cumulative effect over time could be meaningful. Little infill/redevelopment likely within 2028 planning horizon, but may be relevant for ILUTP.
RMA 7		Boyd Acres area	Low to Moderate	RM to RH	RM to RH	UGB project – policy language	Total of roughly 25 acres; over 18 acres under common ownership. Largely vacant. Adjacent to transit. Would require TPR analysis.

[1] See attached map for locations referenced.

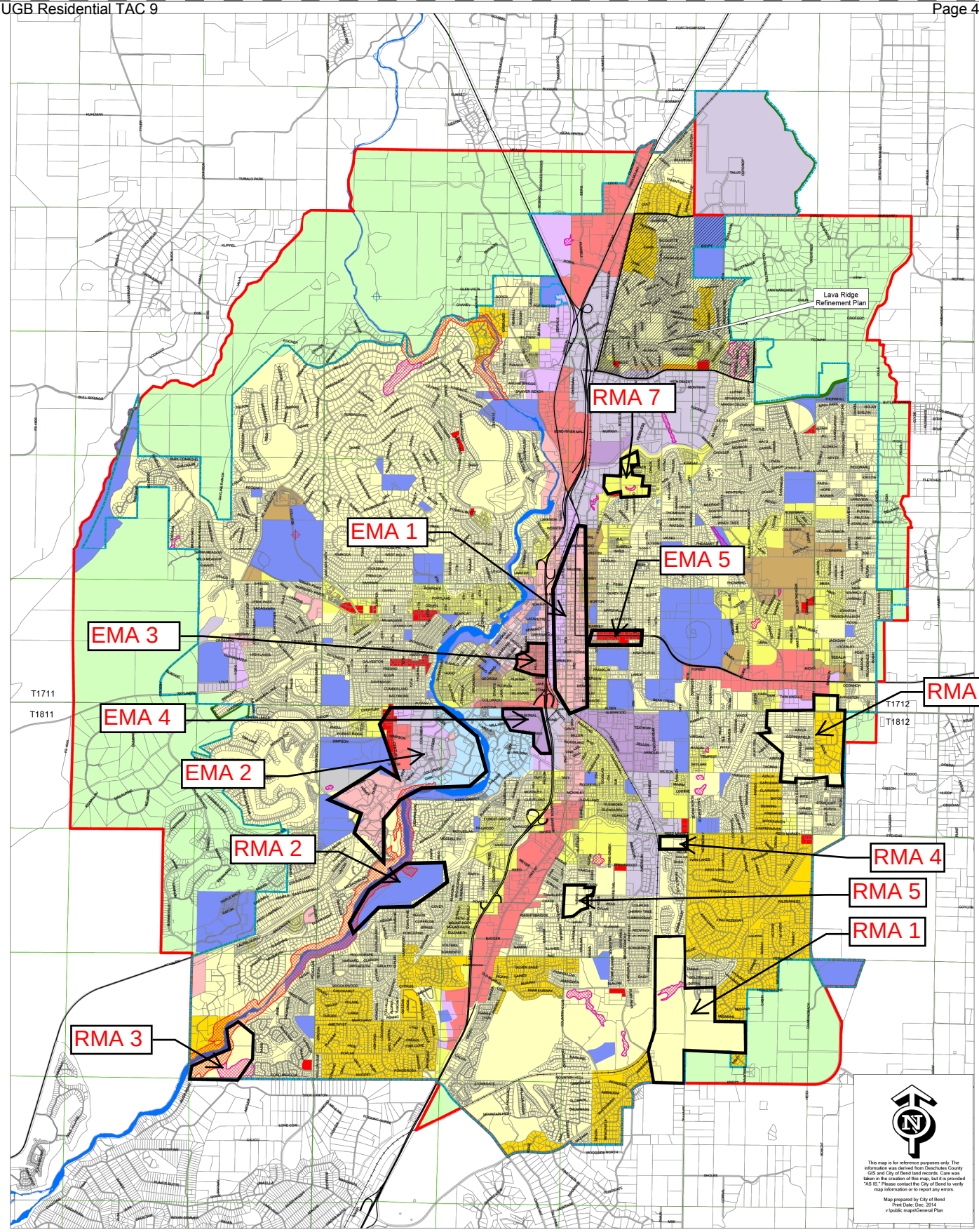
Table 3: Employment Lands Efficiency Measures, Potential Text Amendments (selected amendments relevant to housing in commercial and mixed use zones)

Ref #	Efficiency Measure Concept	Description	Priority Level	Affected Code Provision	Adoption Strategy	Comments / Notes:
ETA 1a ★	Encourage vertical mixed use in commercial and mixed use areas	**Adopt Bend Central Multi-modal Mixed Use Overlay Zone**	**High**	Chapter 2.7	UGB project, CDD & EDD collaboration	Modeling work assumes mixed use generally consistent with the MMA recommendations. Adoption of the Central Area Plan and 3rd Street MMA may require a financing strategy to pay for infrastructure improvements. Some provisions may be pulled out of the MMA overlay for use more broadly; code amendments would need to be adjusted accordingly. In addition, a few questions remain in the proposed code amendments for the MMA; these will need to be resolved prior to adoption.
ETA 1b		Create a new mixed use zone or overlay. Require mixed use or more strongly encourage than in current commercial zones.	Moderate	Chapter 2.7 or Chapter 2.3	Evaluate and refine through Central Westside Project	We have assumed a new mixed use designation that has more residential emphasis than the current commercial designations do in certain limited areas, including along part of Highway 20 near downtown and along certain commercial corridors in the central west side of the city. The CWP may make recommendations for mixed use zones or overlays for that area – if one is developed that would be appropriate for Highway 20 area, it can be applied there as well. If the CWP does not identify any new mixed use zones or overlays, this would be applied in such a limited area that it may not be worth pursuing. UGB project could identify key ideas from MMA code recommendations that should be considered for broader application in walkable, mixed use areas.
ETA 1c		Allow a reduction in total parking requirements for vertical mixed use developments (by 5% to 25% depending on the area, e.g. 5% baseline, additional 5% if within a quarter mile of transit, additional 5% if certain pedestrian amenities are provided, etc.)	Moderate	3.3.330.C.4	Evaluate and refine through parking study	If a walkable commercial areas overlay is created, this would be an appropriate incentive to apply in those areas. (Originates from MMA recommendations.)
ETA 1d		Allow 10' height bonus for residential on upper floors (as part of vertical mixed use) in the MR District	Moderate	Table 2.3.300	UGB project	This would be consistent with a provision in the commercial zones (see 2.2.400.B.1) and would provide an incentive for vertical mixed use. If controversial based on view concerns, consider limiting to certain areas of the MR District.
ETA 1e		Revise Convenience Commercial Development Standards to create an exception to maximum building size standards for vertical mixed use	Low to Moderate	2.2.400.C	CDD	Existing standards for the CC zone restrict building size. They do not contain an exception for residential uses. The CC zone is often used in areas where mixed use would be appropriate; making it easier to build residential above commercial in these areas could remove a barrier to vertical mixed use (though this is likely not the main reason why vertical mixed use is not common in those areas).

Table 4: Employment Lands Efficiency Measures, Potential Map Amendments

Ref #	Area[2]	Description	Priority Level	Changes to Zoning Map	Changes to General Plan Map	Adoption Strategy	Comments / Notes:
EMA 1a	**Opportunity Area 1: Central District Mixed-Use Multimodal Area (MMA)**	Rezoning some areas to ME	Moderate to High	IL to ME between Hwy 97 and 2nd street in certain areas	None	UGB project	Consider as interim solution to allow broader range of uses and greater flexibility for near-term.
EMA 1b ★		Apply MMA overlay	**High**	Apply special plan district Hwy 97 to 4th street south of Revere	None	UGB project, CDD & EDD collaboration	Adoption of the Central Area Plan and 3rd Street MMA may requirees a financing strategy to pay for infrastructure improvements.
EMA 2 ★	**Opportunity Area 4: SW Century Drive**	Area becomes university-serving mixed-use community with housing component.	**High**	TBD	TBD	Evaluate and refine through Central Westside Project	UGB project will roll in land use designations and recommended map amendments from preferred scenario selected through CWP.
EMA 3	Opportunity Area 2: East Downtown	Becomes an extension of downtown	Moderate to High	CG to CB	CG to CB	UGB project – policy language	Likely triggers TPR analysis. Would require text amendments to CB zone development standards to apply appropriate height limits (2.2.800.H.2) and consider whether all design standards/guidelines should apply to the blocks facing Hwy 97. Current zoning and parcelization does not allow economics to work in favor of redevelopment. More intensive designation may be required to incentivize redevelopment.
EMA 4	Opportunity Area 5: Mill District/Core Pine	Becomes new designation, similar to Mixed Riverfront in character, to create a new mixed use, multi-story, retail, office, housing, entertainment district.	Moderate to High	IG to MR or ME	IG to MR or ME	UGB project – policy language	If MR designation is applied, height limits for that designation may need to be revisited to allow taller buildings in this area. Big redevelopment opportunity. Large property close in. Current industrial use is not a good fit for surrounding uses.
EMA 5	Opportunity Area 3: Central Highway 20	Becomes Neighborhood Mixed Use corridor with limited multifamily attached.	Low to Moderate	Mixed use overlay from 4th to 10th along Hwy 20	None	UGB project – policy language	Depending on approach to encouraging mixed use (see ETA 1b & 1c), an overlay may or may not be needed for the commercial zoning along Hwy 20. Could support a greater mix of retail, or small scale mixed use.

[2] See attached map for locations referenced.



BEND OREGON 1905

Bend Area General Plan

0 0.25 0.5 1 1.5 2 Miles

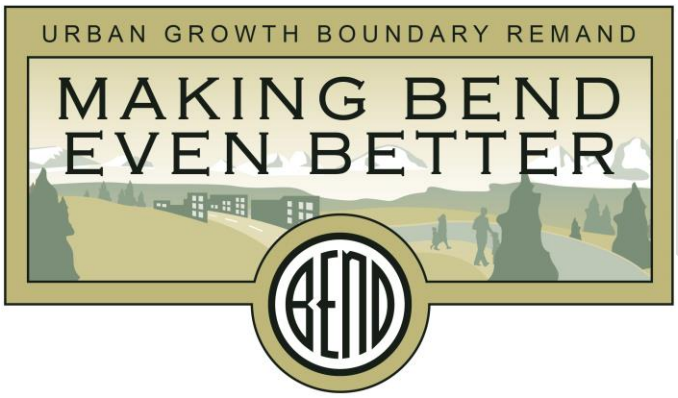
- Township Line
- Section Lines
- Railroads
- Highway
- Special Planned Districts
- Upland Areas of Special Interest
- River Areas of Special Interest
- City Limits
- Urban Reserve Boundary
- Urban Growth Boundary
- Future Park
- Commercial Convenience
- CB- Central Business District
- CC- Commercial 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

Residential TAC Meeting Packet
Part 1

August 25, 2015

Contents:

- Draft Bend Buildable Lands Inventory (BLI)
- Draft Bend Housing Needs Analysis (HNA)



Bend Buildable Lands Inventory

Bend's Land Base and Growth to 2028

Draft Document: August 14, 2015

Draft

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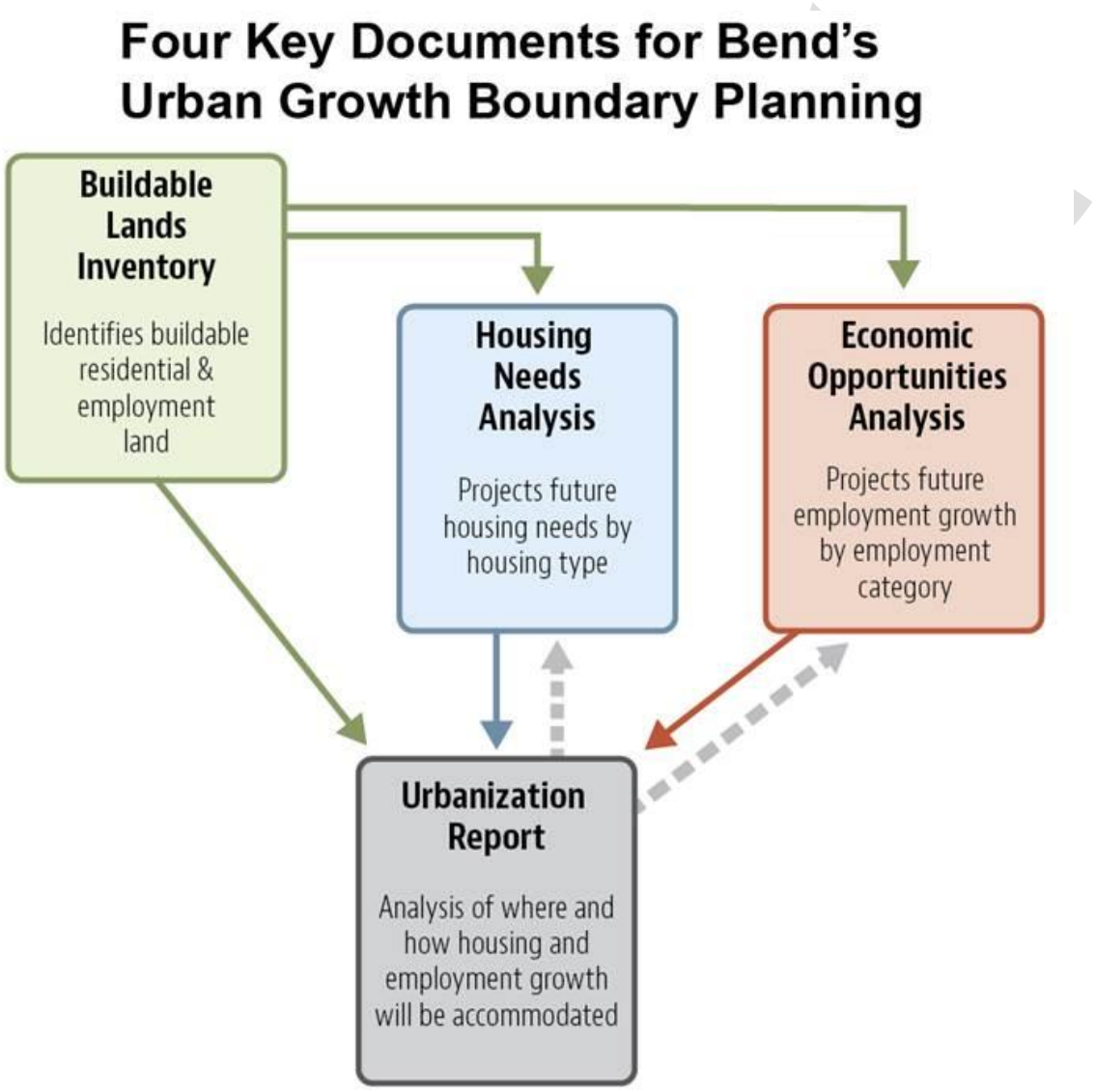
EXECUTIVE SUMMARY

The Bend Buildable Lands Inventory (BLI) describes the land within the Bend Urban Growth Boundary (UGB) that can be developed to accommodate future residential and employment growth. The determination of developable land in the BLI is a key input for the Housing Needs Analysis, the Economic Opportunities Analysis, and the Urbanization Report, as shown in Figure EX-1.

Figure EX-1. Role of the BLI



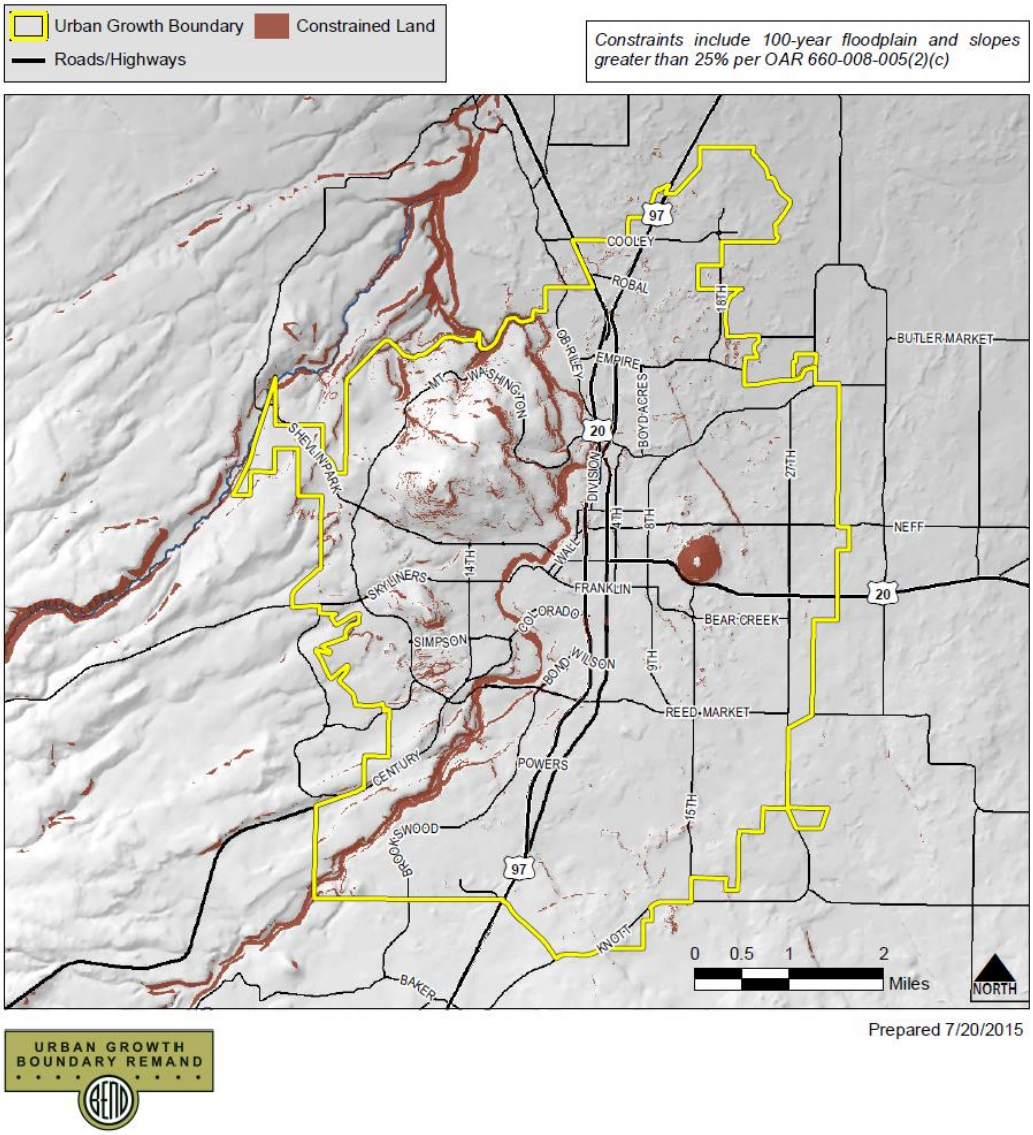
There are four steps to the BLI. Each will be discussed in detail in this report:

Step 1 – Calculate Physical Constraints
Step 2 – Define Residential Land
Step 3 – Define Employment Land
Step 4 – Assign Developable Acreage to Each Parcel

Step 1: Calculate Physical Constraints

Land that is physically constrained is not assumed to be "buildable".[1] "Constrained Acres," or areas with 25% or greater slopes and areas within the Federal Emergency Management Agency (FEMA) 100-year floodplain, were calculated for each tax lot in Bend. Bend's Areas of Special Interest (ASIs) are not allowed to be excluded as unbuildable as they are not acknowledged Goal 5 resources And the development code allows density transfer for residential lands. There are roughly 1,216 acres of constrained land within the UGB, 975 of which lies within tax lots.

Figure EX-1. Physical Constraints (Deschutes County GIS)



[1] OAR 660-008-0005 (2) describes land generally not considered "suitable and available" for development, including areas with slopes of 25% or greater and areas within the 100-year floodplain.

Steps 2 & 3: Define Residential and Employment Land

The categorization of Residential Land and Employment Land and is described in table EX-2. Descriptions of comprehensive plan designations and zones are included in Appendix A.

Table EX-2. Residential and Employment BLI Categories

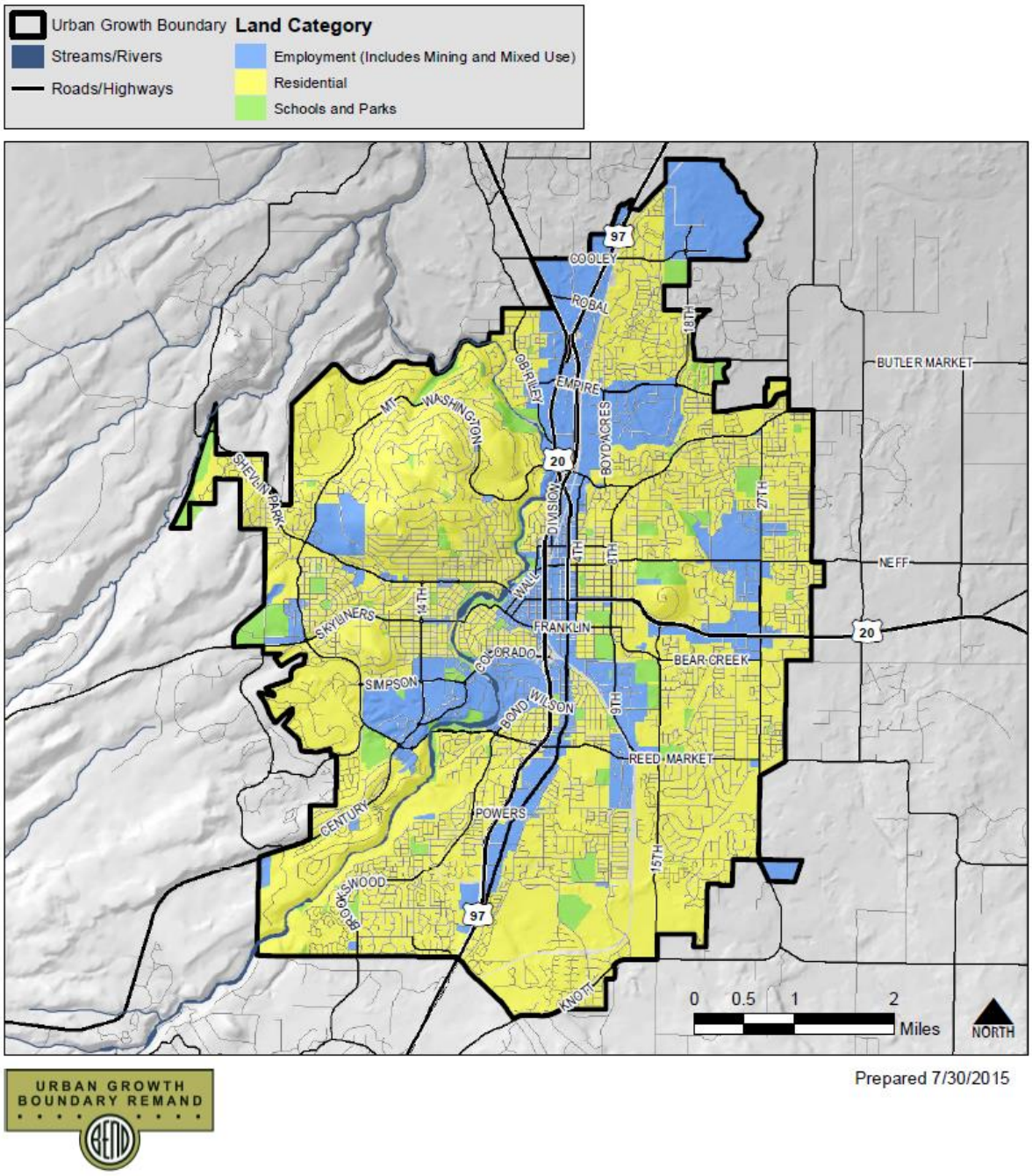
Residential BLI Categories	Employment BLI Categories
Residential Land has a Residential plan designation (RL, RS, RM, RH) or a residential zone category (RL, RS, RM, RH, SR2.5)*, with a few exceptions for special cases *(See Chapter 3 for details).*	**Employment Land** has a plan designation of CC, CG, CB, CL, MR, ME, PO, SM, IL, IG, or PF*, with a few exceptions for special cases *(See Chapter 3 for details)*.
Vacant – Land planned (per Comprehensive Plan map) or zoned (per zoning map) for residential use with no improvements. **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. Residential land that contains an employment use is also considered "Developed." **Lots Large Enough for an Additional Unit under Current Zoning *("Partially Vacant")*** – Land planned or zoned for residential use that contains fewer dwelling units than permitted in the zone, but the lot is not large enough to divide under current zoning. **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.	**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 as developed.[2]

* See Appendix A – Glossary.

[2] Developed employment land identified in this BLI includes all employment land that is not vacant, rather than land with a likelihood of redevelopment (as it is defined under Goal 9).

Figure EX-2 depicts the locations of residential and employment lands within the City.[3] Table EX-2 and Table EX-3 show the BLI designation of residential and employment land within the City of Bend.

Figure EX-2. Bend Residential and Employment Land



[3] Some properties have a zoning designation that is different from their comprehensive plan designation. For example – many properties with a "PF" plan designation have "RS" zoning. In these cases, residential zoning designations and residential uses put the property into the "Residential Land" category.

Table EX-2. BLI Designation of Residential Tax Lots

BLI Designation of Residential Tax Lots	Number of Tax Lots	Total Acres
Developed	25,845	7,733
Lots Large Enough to Divide Under Current Zoning *("Developed with Infill Potential")*	4,572	2,555
Lots Large Enough for Additional Units under Current Zoning *("Partially Vacant")*	828	93
Publicly Owned (excludes schools and parks)	177	413
Vacant	2,859	1,846
TOTAL	**34,281**	**12,640.6**

Table EX-3. BLI designation of Employment Tax Lots

BLI Designation of Employment Tax Lots	Number of Tax Lots	Total Acres
Developed	3,452	2775
Vacant	247	1,048
Total	**3,699**	**3,823**

Step 4: Assign Developable Acreage to Each Parcel

Each parcel within the City of Bend was assigned vacant acreage and developed acreage, based on its BLI designation. The methodology for assigning vacant acreage to infill categories is described in detail in Chapter 3 of this document. Table EX-4 lists the amount of vacant and developed acreage by plan designation for employment and residential land. These acreages are the basis for the jobs and housing capacity estimates used in the Housing Needs Analysis, the Economic Opportunities Analysis, and the Urbanization Report.

Table EX-4. Vacant and Developed Acres by Plan Designation

Plan Designation	Vacant Acres	Developed Acres
CB	0	39
CC	12	66
CG	117	614
CL	87	304
IG	8	185
IL	643	606
MDOZ*	73	177
ME	96	200
MR	36	162
PF	344	513
PO	6	0
PO/RM/RS	0	6
RH	24	114
RL	178	1,404
RM	287	899
RS	1,971	6,951
SM	19	0
URA	0	115
Grand Total	**3,899**	**12,355**

**Land within the Medical District Overlay Zone (MDOZ) is primarily within residential plan designations, but the overlay encourages development of medical and office uses. It is treated separately within the BLI where possible.*

Conclusion

The primary outcome of the Buildable Lands Inventory is a GIS dataset with values for vacant and developed acres for each parcel within the City of Bend UGB. These values provide a basis for estimating future development and redevelopment. The assumptions that have been applied to this inventory to estimate capacity are documented in the Urbanization Report, which estimates the potential for growth of housing and jobs within the current UGB based on existing conditions, as well as alternate growth scenarios involving changes to the Comprehensive Plan map and development code.

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CHAPTER 1. INTRODUCTION

This report is the City of Bend's Buildable Land Inventory (BLI), as defined and required by Oregon Administrative Rule (OAR) 660-024-0050, the Bend Urban Growth Boundary (UGB) Remand[4], and other relevant law. This report provides information pertaining to the background, process, and results of the Bend Buildable Lands Inventory; detailed maps and methodology are provided as appendices.

Role of the BLI

The BLI is a supporting document of the City of Bend Comprehensive Plan[5]. In simplest terms, the BLI documents the urban land supply of Bend, and estimates the growth capacity for housing and jobs within the existing UGB. It is a key part of the factual base for growth management policy in Bend. The BLI also serves a very specific role, required by law, in analyzing and documenting specific categories of buildable land and providing the basis for estimating capacity for growth within Urban Growth Boundary (UGB). The BLI is one of four inter-related documents that are central in the City's planning related to the UGB. The purpose and major components of each of these documents are summarized in **Error! Reference source not found.**.

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[4] Remand and Partial Acknowledgement Order 10-Remand-Partial Acknow-001795, November 2, 2010.

[5] The City of Bend is in the process of updating its General Plan, which includes changing the name of the document to the "Comprehensive Plan." These terms are synonymous and used interchangeably.

Table 1: Four Key Documents for Bend's Urban Growth Boundary Planning

Document	Buildable Land Inventory (BLI)	Housing Needs Analysis (HNA)	Economic Opportunities Analysis (EOA)	Urbanization Report (UR)
Purpose	Identify buildable residential & employment land by category	Address the requirements for planning for needed housing, including analysis of national, state, and local demographic and economic trends, and recommendations for a mix and density of needed housing types	Document historical employment and demographic trends, the projection of employment growth, identification of target industries, and evaluation of site characteristics needed to accommodate target industries	Analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas
Primary Legal Standards[6]	ORS 197.296 OAR 660, Divisions 8 and 9	Statewide Planning Goal 10: Housing ORS 197.296 and 197.303 OAR 660, Division 8	Statewide Planning Goal 9: Economic Development OAR 660, Division 9	Statewide Planning Goal 14: Urbanization ORS 197.298 OAR 660, Division 24
Key Subject Matter	Development status categories and definitions Methodology for assigning categories and conducting inventory Inventory results: acres by plan designation and development status	Projection of population and total housing growth Housing market and development trends Demographic characteristics and trends Analysis of affordability Estimate of needed housing (mix and density) Comparison of housing capacity to need	Existing policy and vision National, state, local trends Employment projections Target industries Site needs and characteristics Special site needs Redevelopment analysis Comparison of employment capacity to need and characteristics	Methodology for capacity estimates Pre-policy ("base case") capacity estimate for current UGB Efficiency measures (EMs) proposed Current UGB capacity with EMs UGB alternatives evaluation methodology and results Proposed UGB expansion and summary of Goal 14 evaluation results

[6] OAR = Oregon Administrative Rules; ORS = Oregon Revised Statutes

Framework for a Buildable Lands Inventory

The following section describes Oregon's requirements for a BLI and some key concepts necessary for understanding the BLI.

State Statues and Administrative Rules: Residential Land

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."[7]

State statute identifies the following categories of buildable lands:[8]

> *(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:"[9]

> *(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*
>
> *(C) The presence of a single family dwelling or other structure on a lot or parcel.*

The State administrative rules further define buildable land in the context of a Residential BLI as follows:[10]

> *(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;*

[7] OAR 660-008-0010, effective February 14 2012

[8] ORS 197.296(4)(a), effective 2003

[9] ORS 197.296(4)(b), effective 2003

[10] OAR 660-008-0005(2), effective February 14 2012

(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.

State Statues and Administrative Rules: Employment Land

A similar inventory is required for employment land as part of the preparation of an Economic Opportunities Analysis (EOA). The categories used in the EOA inventory differ from those used for residential lands, and are as follows:[11]

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

(14) "Vacant Land" means a lot or parcel:

(a) Equal to or larger than one half-acre not currently containing permanent buildings or improvements; or

(b) Equal to or larger than five acres where less than one half-acre is occupied by permanent buildings or improvements.

(3) Inventory of Industrial and Other Employment Lands. Comprehensive plans for all areas within urban growth boundaries must include an inventory of vacant and developed lands within the planning area designated for industrial or other employment use.

Prior BLI and Remand Issues

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 BLI and the way the capacity of that land was estimated (Sub-issue 2.2). The City has done a significant amount of work to address the issues raised in the remand related to the BLI, summarized below.

Definitions and Categories

DLCD provided the following definitions to use while conducting a GIS parcel-based analysis of residentially planned or zoned land in the Bend UGB.[12] Where definitions were not provided in

[11] OAR 660-009-0005, effective [date].

[12] E-mail from Gloria Gardiner, DLCD, to Damian Syrnyk, October 21, 2010 and e-mail response from Gloria Gardiner, DLCD, to Karen Swirsky, dated June 9, 2011.

rule or statute, the Department provided one consistent with the terms outlined in ORS 197.296(4)(a).

- **Vacant** – Land planned or zoned for residential use that shows no improvement value in the assessor's data.
- **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.
- **Lots Large Enough for an Additional Unit under Current Zoning** ("Partially Vacant") – Land planned or zoned for residential use that contains fewer dwelling units than permitted in the zone, but the lot is not large enough to divide under current zoning.
- **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.
- **Redevelopable Land -** 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." Note that the planning period in this UGB Remand process is between 2008 and 2028.

These definitions and their operationalization within the BLI are further detailed in "Step 2 – Defining Residential Land" later in this document.

Exclusions

In 2008, the city identified certain categories of tax lots 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.

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.[13]

This update of the BLI complies with these requirements. The City has included vacant lots and parcels under 0.5 acres and to exclude only the portion of a lot that has physical constraints on

[13] LCDC Remand Order, page 26.

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. Restrictive CC&Rs have been addressed specifically in the BLI and Envision Tomorrow model.[14] A description of how CC&Rs have been addressed can be found in Step 2 – Defining Residential Land.

Time Periods and Data used in the Buildable Lands Inventory

Timing of Data

The City of Bend originally prepared a BLI in 2008 to support the 2008 UGB expansion proposal. It was refined in 2011 to use new definitions without updating the underlying data. This BLI is a new inventory, applying new definitions to a new parcel dataset from July 2014.

Source Data

This BLI is based on July 2014 assessors data from Deschutes County augmented with information from city GIS and building permit data. The underlying data and its sources are summarized below.

Tax lots and Assessor's Data. Deschutes County GIS tax lot data dated July 27, 2014 was used to create a base layer of all properties inside and within 3 miles of the existing Bend UGB. General property information from the Deschutes County Assessor's Office was included, containing attributes such as:

- ownership information (including public agency ownership, e.g. City, County, State, Federal, College District, Irrigation District, Parks District, School District, and Other Special District);
- property classification (for tax assessment purposes),
- structure information (including building square footage and number of structures); and
- improvement value (real market improvement value according to the tax assessors office).

Physical Constraints. County data for areas with 25% or greater slopes and within the FEMA 100-year floodplain were used to determine the constrained acreage of Bend tax lots.[15]

Zoning and Comprehensive Plan Designation. These designations were applied to each tax lot. If the tax lot contained two or more zones, they were split into multiple polygons so they could be accounted for individually.

[14] Envision Tomorrow is a scenario planning tool used to model growth and redevelopment. It has been used extensively in the Bend UGB Remand work to evaluate growth scenarios and identify land capacity. See Appendix D for additional description.

[15] Bend's Areas of Special Interest (ASIs) are not allowed to be excluded as unbuildable as they are not acknowledged Goal 5 resources.

Property Use and Type. These attributes indicate the general property use (e.g. Single Family Residential, Employment, Open Space) and specific type (e.g. Duplex, Office, Golf Course) on the tax lot. These were identified through a combination of Assessor's Office data, City building permit data, aerial photography, and existing City tax lot inventory data.

Number and Type of Existing Housing Units. The number of dwelling units on each property by type of dwelling unit was established, as with the property use and type, through a combination of Assessor's Office data, City building permit data, aerial photography, and existing City tax lot inventory data.

Zoned Development Potential (Residential Land Only). The maximum number of units allowed by current zoning based on lot size and maximum density for the applicable zone/plan designation, and whether the lot size is more than double the minimum lot size (for single family detached housing) for the zone.

2008 BLI data. Data from previous BLI work was used as a reference and to provide context for specific tax lots.

CHAPTER 2: BUILDABLE LANDS INVENTORY

Overview

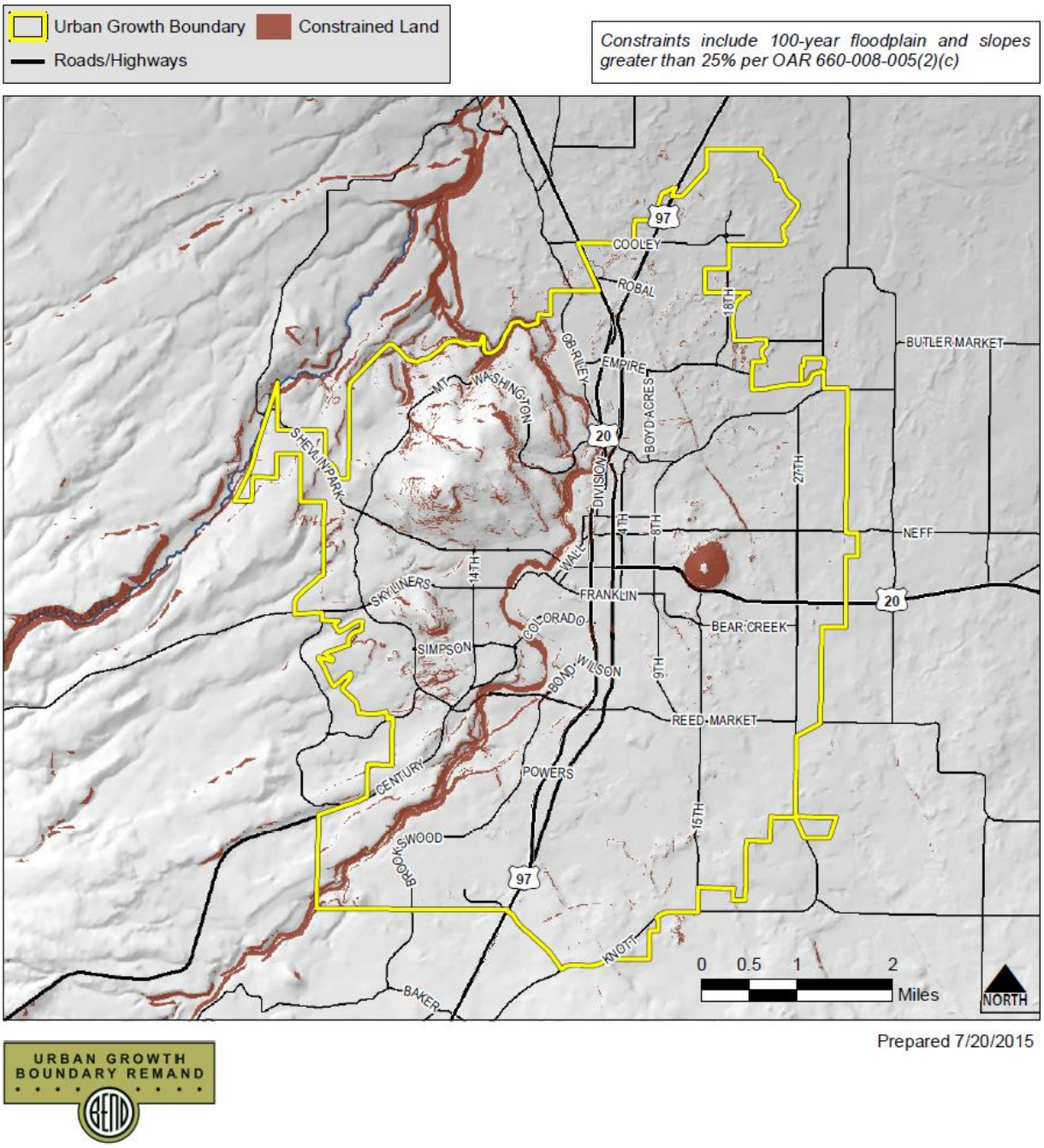
The methods used, and inventory results, are described in this chapter and organized into the four steps used to prepare the BLI. The four steps are:

- **Step 1 –** Calculate Physical Constraints
- **Step 2** – Define and Categorize Residential Land
- **Step 3** – Define and Categorize Employment Land
- **Step 4** – Assign Developable Acreage to Each Parcel

Step 1 – Calculate Physical Constraints

Land that is physically constrained per state requirements and definitions is assumed to be not "buildable" for the purposes of this inventory. "Constrained Acres," or areas with 25% or greater slopes and areas within the FEMA 100-year floodplain, were calculated for each tax lot in Bend. Bend's Areas of Special Interest (ASIs) are not allowed to be excluded as unbuildable as they are not acknowledged Goal 5 resources. There are roughly 1,216 acres of constrained land within the UGB, 975 of which lies within tax lots.

Figure 1. **Physical Constraints (Deschutes County GIS)**



Step 2 - Define and Categorize Residential Land

Following is a detailed description of how different categories of residential land were defined for purposes of the inventory, as well as tables summarizing the total acres of land in each category.

Definition

Lands with a Residential plan designation (RL, RS, RM, RH), and lands with a residential zone category (RL, RS, RM, RH, SR2.5), are categorized as Residential Land, except for the "Special Cases" listed below.[16]

- **Land within School District or Park District Ownership** was considered unavailable for residential development.
- **Land in the Medical District Overlay Zone (MDOZ)** with a residential plan category was identified as "Mixed Use" and treated as part of the Employment land supply, but with the ability to accommodate some housing.[17]
- **Land with an employment plan designation but zoned Urban Area Reserve** (UAR), which is primarily a holding zone and does not indicate availability for urban residential development, was identified as Employment land.[18]
- **Land planned or zoned for surface mining** (SM) was identified as Employment land.[19]

Other land in mixed-use and commercial designations (not zoned for residential use) that allow residential development were treated as part of the Employment land supply, but with the ability to accommodate some housing, based on past trends.[20]

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[16] There are over 200 parcels with residential zones and non-residential plan designations; however, the vast majority are developed. Those that are vacant are mostly identified as "special cases".

[17] The 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." (Bend Development Code, Section 2.7.510.A.) The residential, public, and institutional uses permitted or conditionally allowed in the base residential zones are subject to the same regulations , but 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.

[18] There are roughly 51 acres on two tax lots designated ME but zoned UAR.

[19] There is one taxlot with a RS plan designation and a SM zone, and one with a SM plan designation and an RS zone. In total, these two taxlots cover roughly 35 acres inside the UGB, with both currently mined (one extends outside the UGB, with the mining operations located outside the current boundary).

[20] 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. In addition, 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.

BLI Status

Pursuant to the statues and administrative rules and guidance from DLCD summarized in Chapter 1 (see pages 3 and 4), each tax lot was assigned a BLI status corresponding to one of the following categories:

- Vacant
- Developed
- Lots Large Enough for an Additional Unit under Current Zoning ("Partially Vacant")
- Lots Large Enough to Divide Under Current Zoning ("Developed with Infill Potential")

Details of the way the definitions provided by statute, rule, and DLCD were operationalized for the purposes of this analysis are provided below.

Vacant: Land planned or zoned for residential use that has $0 in improvement value. Tax lots 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.[21] Publicly owned land is also excluded.[22]

Developed: Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the zone. Residentially zoned land that is currently developed with an employment or institutional use is also categorized as Developed. Properties with restrictive Covenants, Conditions, and Restrictions (CC&Rs) and containing a dwelling were categorized as fully developed, even where minimum lot sizes are large enough to allow land division under the current zoning.[23]

Lots Large Enough for an Additional Unit 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 (not considering limiting factors such as setback and frontage requirements, lot coverage, or location

[21] Private Open Space, including common areas that are part of an approved subdivision and/or owned by a Homeowners Association, unbuildable fragments, canal right of way, cemeteries, private roads, RV parks, and developed golf courses were identified as developed. The only exception is the undeveloped portion of the Back Nine golf course at Mountain High, which was considered vacant.

[22] As stated in ORS 660-008-005(2), publicly owned land is generally not considered available for residential uses. Publicly owned land was identified and designated "Public Land" and not considered vacant for residential purposes, unless information was available indicating otherwise.

[23] CC&Rs were reviewed to determine whether they limit or preclude infill and redevelopment. Only those parcels subject to CC&Rs that restrict addition of units to the lot and/or restrict land division were identified as having restrictive CC&Rs and categorized as fully developed. Note that vacant, platted lots subject to CC&Rs were categorized as vacant, but were also assumed not to have the potential for more than one dwelling unit. See the Urbanization Report for additional detail.

of existing structures), additional units could be built on the site, but the lot is not large enough to further divide.[24]

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.[24]

Note that redevelopable land is not identified as a BLI category. Theoretically, the developed portions of parcels that have additional zoned development potential (those that are identified as partially vacant or developed with infill potential) could allow for redevelopment; however, 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."[25] Redevelopment potential is addressed in the Urbanization Report.

[24] To identify partially vacant lands and land developed with infill potential, the maximum number of units that could be built on each residential tax lot was calculated, based on the maximum density allowed per the development code (which is expressed as a gross density) and the tax lot size. The number of existing units was then subtracted from the maximum number of units allowed. If one or more new units would be allowed based on the maximum density allowed by the zoning, the lot size was compared to the minimum lot size for single family detached housing in the zone. If the lot was more than double the minimum lot size, it was categorized as developed with infill potential. If it was not (but the maximum density of the zone would allow one or more additional units), the tax lot 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.)

[25] OAR 660-008-0005(7), effective February 14 2014.

Figure 2. **BLI Status of Residential Lands Map (2015)**

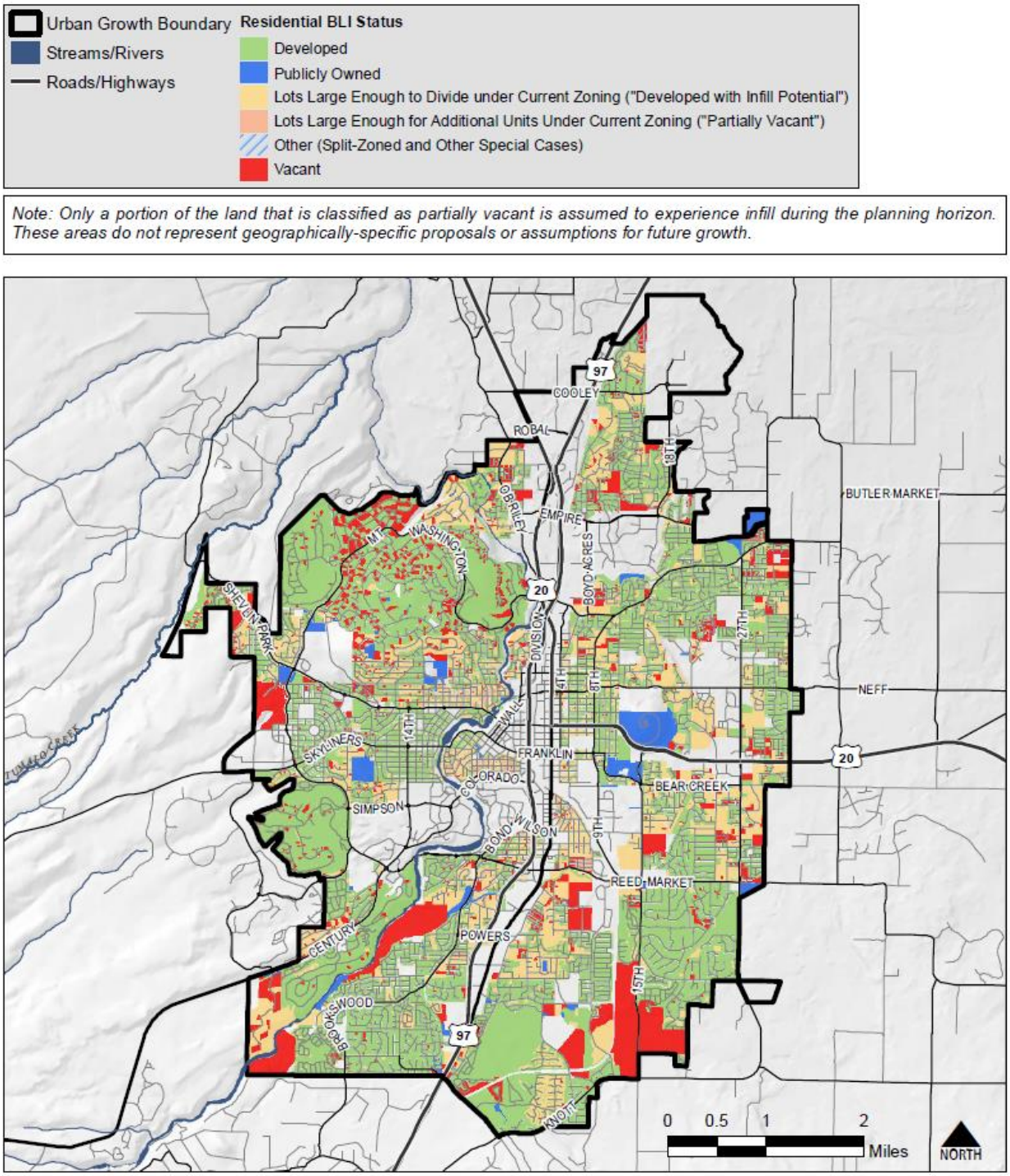


Table 1. BLI Designation of Residential Tax Lots

BLI Designation of Residential Tax Lots	Number of Tax Lots	Total Acres
Developed	25,845	7,733
Lots Large Enough to Divide Under Current Zoning *("Developed with Infill Potential")*	4,572	2,555
Lots Large Enough for Additional Units under Current Zoning *("Partially Vacant")*	828	93
Publicly Owned (excludes Schools and Parks)	177	413
Vacant	2,859	1,846
TOTAL	**34,281**	**12,640.6**

Figure 3. **Size Distribution of Tax Lots by Residential BLI Status**

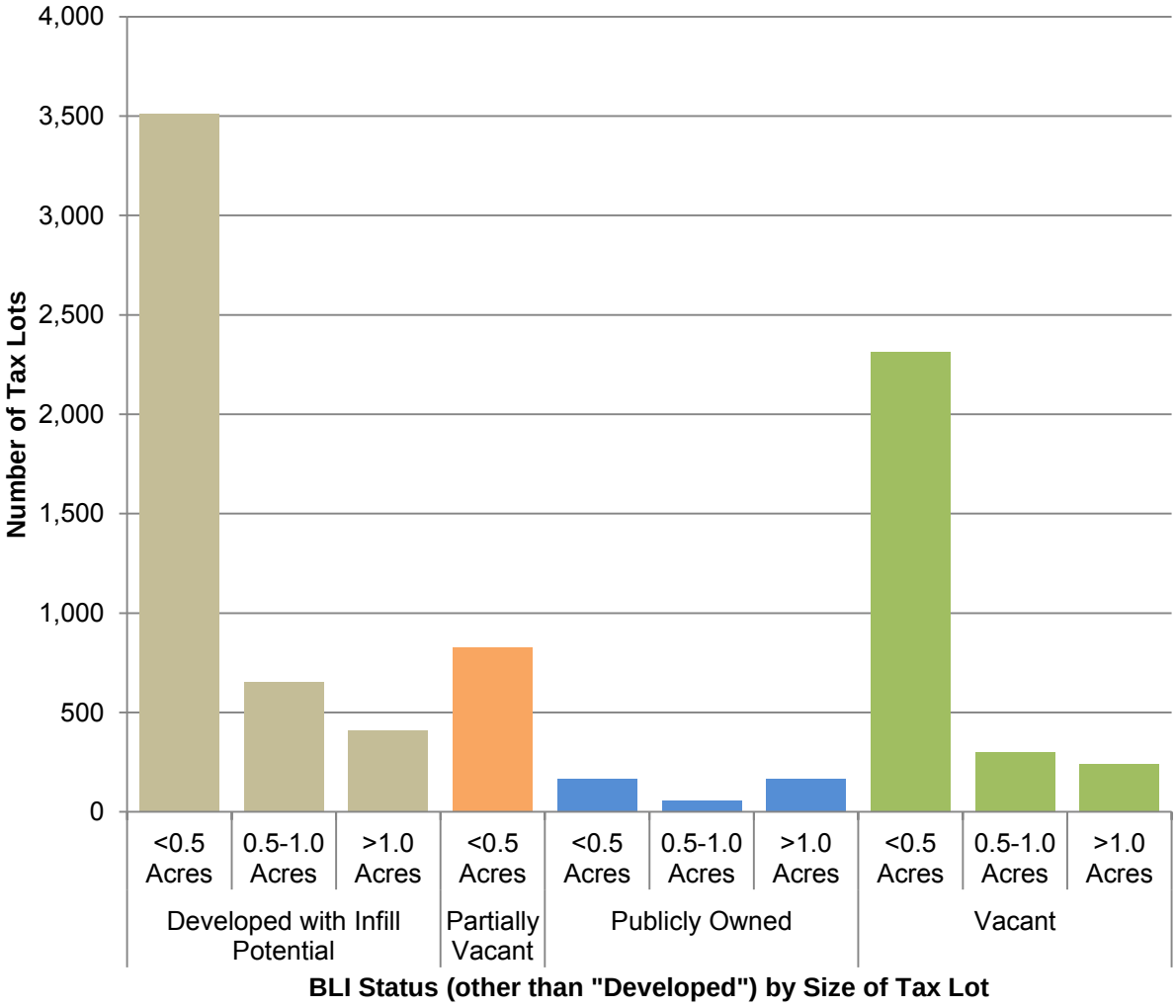


Table 2. BLI Status for Residential Land by Comprehensive Plan Category

Comprehensive Plan Designation	Number of Taxlots	Total Acres
Commercial / Industrial Designation*	**54**	**8.0**
Developed	53	6.8
Developed with infill potential	0	0.0
Partially Vacant	0	0.0
Vacant	0	0.0
Publicly Owned	1	1.2
PF	**164**	**427.5**
Developed	68	47.2
Developed with infill potential	2	0.6
Partially Vacant	0	0.0
Vacant**	69	153.3
Publicly Owned	25	226.3
RH	**526**	**136.9**
Developed	200	45.6
Developed with infill potential	164	46.2
Partially Vacant	64	6.3
Vacant	88	19.5
Publicly Owned	10	19.3
RL	**3,019**	**1,613.0**
Developed	2,835	1,366.7
Developed with infill potential	98	184.9
Partially Vacant	1	0.5
Vacant	70	54.0
Publicly Owned	15	6.9
RM	**4,891**	**1,225.7**
Developed	1,977	336.8
Developed with infill potential	1,614	597.0
Partially Vacant	750	85.1
Vacant	518	184.2
Publicly Owned	32	22.5
RS	**25,614**	**9,176.1**
Developed	20,702	5,909.1
Developed with infill potential	2,694	1,726.1
Partially Vacant	13	1.6
Vacant	2,112	1,434.9
Publicly Owned	93	104.5

Comprehensive Plan Designation	Number of Taxlots	Total Acres
UAR	**13**	**53.4**
Developed	10	20.7
Developed with infill potential	0	0.0
Partially Vacant	0	0.0
Vacant	2	0.1
Publicly Owned	1	32.5
Grand Total	**34,281**	**12,640.6**

** These lands have a comprehensive plan designation of CC, CG, CL, or IL, but have a zoning designation of RS or RM and are considered part of the Residential inventory.*

*** The vacant land that has a PF designation and is included in the residential BLI is zoned RS and includes land platted as part of residential subdivisions, one large parcel (roughly 14 acres in southeast Bend) under common ownership with adjacent vacant RS-designated land, and the Central Oregon Irrigation District (COID) site that the COID has indicated should be considered available for residential uses.*

Step 3 – Define and Categorize Employment Land

Following is a detailed description of how different types of employment land were defined for purposes of the BLI and tables summarizing the total acres of land in different categories.

Definitions

The BLI status for all land planned or zoned for employment use (including mixed use designations & zones) was assigned using the statutory definitions for employment land, with the exception of school and park land.[26]

- 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).

A map of BLI status of employment lands is shown in Figure 6. Detailed maps are provided in Appendix A.

[26] OAR 660-009-0005(1) and (14)

Table 3. Tax Lots and Acres by Employment BLI Status

Employment BLI Status	Number of Tax Lots	Total Acres
Developed	3,451	2,761.8
Vacant	245	1012.7
Other*	3	48.3
Grand Total	**3,699**	**3,871.2**

** "Other" designations are addressed in Special Cases the Urbanization Report. These taxlots are related to OSU and one parcel partially within the UGB.*

Figure 4. **Developed and Vacant Employment Land by Number of Tax Lots**

Table 4. Employment Land by Comprehensive Plan Designation

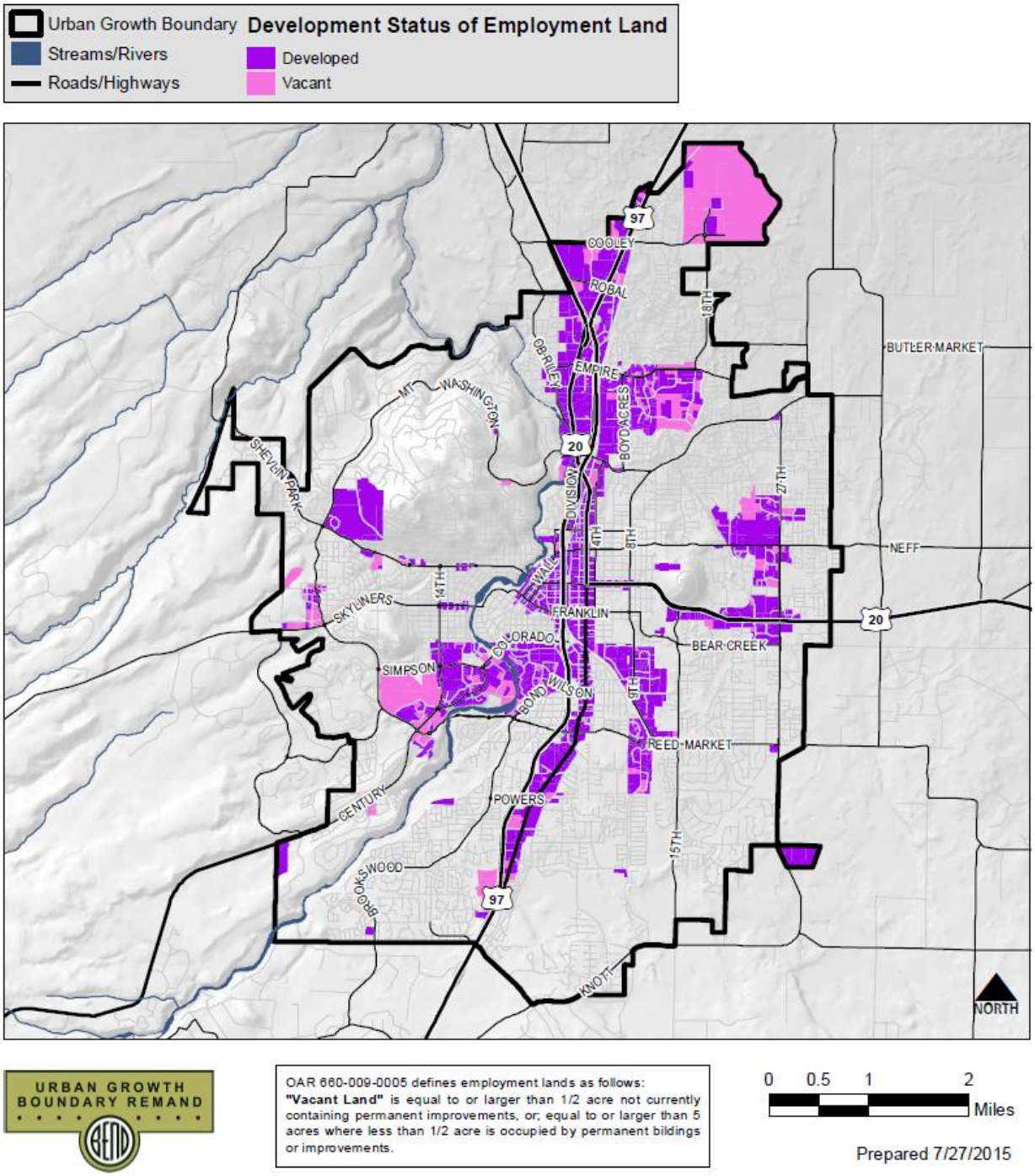
Comprehensive Plan Designation	Number of Taxlots	Total Acres
CB	**322**	**38.5**
Developed	322	38.5
Vacant	0	0.0
CC	**180**	**77.8**
Developed	173	65.8
Vacant	7	12.0

Comprehensive Plan Designation	Number of Taxlots	Total Acres
CG	**564**	**724.8**
Developed	515	627.8
Vacant	49	97.0
CL	**763**	**374.1**
Developed	734	305.1
Vacant	29	69.0
IG	**152**	**194.1**
Developed	146	185.7
Vacant	6	8.4
IL	**669**	**1247.5**
Developed	579	647.0
Vacant	90	600.5
MDOZ*	**186**	**250.7**
Developed	126	75.9
Vacant	20	55.2
ME	**335**	**297.1**
Developed	318	259.0
Vacant	17	38.1
MR	**453**	**202.6**
Developed	435	162.2
Vacant	18	40.3
PF	**45**	**355.2**
Developed	38	269.3
Vacant	7	86.0
PO	**2**	**6.1**
Developed	0	0.0
Vacant	2	6.1
PO/RM/RS	**25**	**5.8**
Developed	25	5.8
Vacant	0	0.0
RS	**1**	**5.3**
Other**	1	5.3
SM	**2**	**43.1**
Other**	2	43.1
Grand Total	**3,699**	**3822.7**

** Land within the Medical District Overlay Zone (MDOZ) is primarily within residential plan designations, but the overlay encourages development of medical and office uses. It is treated separately within the BLI where possible.*

*** "Other" designations are addressed in Special Cases the Urbanization Report. These taxlots are related to OSU and one parcel partially within the UGB.*

Figure 5. **Employment BLI Status Map (2015)**



Step 4 – Assign Developable Acreage

After assigning a BLI category to residential and employment land, the next step is to identify how much of the land that has some remaining development potential is available. To this end, this BLI uses three attributes related to development capacity for each parcel: "Vacant Acres," "Developed Acres," and "Constrained Acres". "Vacant Acres" are available for development; "Developed Acres" are developed but may potentially undergo redevelopment[27]; and "Constrained Acres," such as steep slopes or floodplains, are undevelopable. The assignment of acreages to these three categories was done based on the BLI categories described in the previous sections. The Urbanization Report describes how this capacity, measured in acres, is translated into projected housing units and jobs.

Constrained acres are identified first, based on the physical constraints listed in Step 1 (see page 7). The remaining acreage of each parcel is classified as vacant or developed as described below.

Developable Acreage: Residential Land

The methodology for assigning vacant and developed acres for residential land is summarized below by BLI category.

- **Vacant –** All unconstrained acreage was coded as vacant. Developed acreage was set to zero.
- **Developed** – All unconstrained acreage was coded as developed. Vacant acreage was set to zero.
- **Lots Large Enough for an Additional Unit under Current Zoning** ("Partially Vacant") and **Lots Large Enough to Divide Under Current Zoning** ("Developed with Infill Potential") – The overall assumption is that a lot in this category is made up of a mix of developed and vacant land. The amount of land that is committed to existing structures was estimated based on building footprint information (where available) and/or zoning requirements. Where there was less than ½ acre available after accounting for land committed to existing structures, the unconstrained portion of the tax lot was coded as Developed. Where there was greater than ½ acre available, the land committed to existing structures was coded as developed, and the estimated remaining available amount was coded as Vacant. [28]

[27] See Chapter 2 of the Urbanization Report for methodology used in forecasting redevelopment.

[28] Methodology for "Partially Vacant" and "Developed with Infill Potential" is as follows:

1. Calculate Zoning Required Acres - Methodology was based on Table 2.1.500 from Bend's Zoning Code. The area that is "committed" based on the existing zoning equals the number of units times the minimum lot size or the area required for each unit. The remaining acreage that is "available" under the existing zoning is then subtracted from the constrained land.
2. Calculate Building Footprint Area - Using a 2004 building footprint layer plus a 10-foot buffer from all mapped buildings, summed the total square feet of building footprint and buffer by tax lot. For tax lots with development but no building footprint information, used average building footprint +

Table 5. Developed and Vacant Acres on Residential Land

Plan Designation and Development Status	Vacant Acres	Developed Acres
Commercial / Industrial Designations*	**0.0**	**8.0**
Developed	0.0	8.0
PF	**153.2**	**53.0**
Developed	0.0	14.4
Developed with infill potential	0.0	0.6
Publicly Owned	0.0	38.1
Vacant	153.2	0.0
RH	**24.3**	**112.4**
Developed	0.0	45.5
Developed with infill potential	4.5	41.6
Partially Vacant	0.3	6.0
Publicly Owned	0.0	19.2
Vacant	19.5	0.0
RL	**177.8**	**1,404.4**
Developed	0.0	1,359.3
Developed with infill potential	126.6	41.0
Partially Vacant	0.0	0.5
Publicly Owned	0.0	3.8
Vacant	51.2	0.0
RM	**287.0**	**869.4**
Developed	0.0	310.9
Developed with infill potential	119.0	467.2
Partially Vacant	0.0	84.4
Publicly Owned	0.0	8.6
Vacant	168.0	0.0
RS	**1,965.5**	**6,857.7**
Developed	0.0	5,777.8
Developed with infill potential	639.7	994.3
Partially Vacant	0.0	1.6

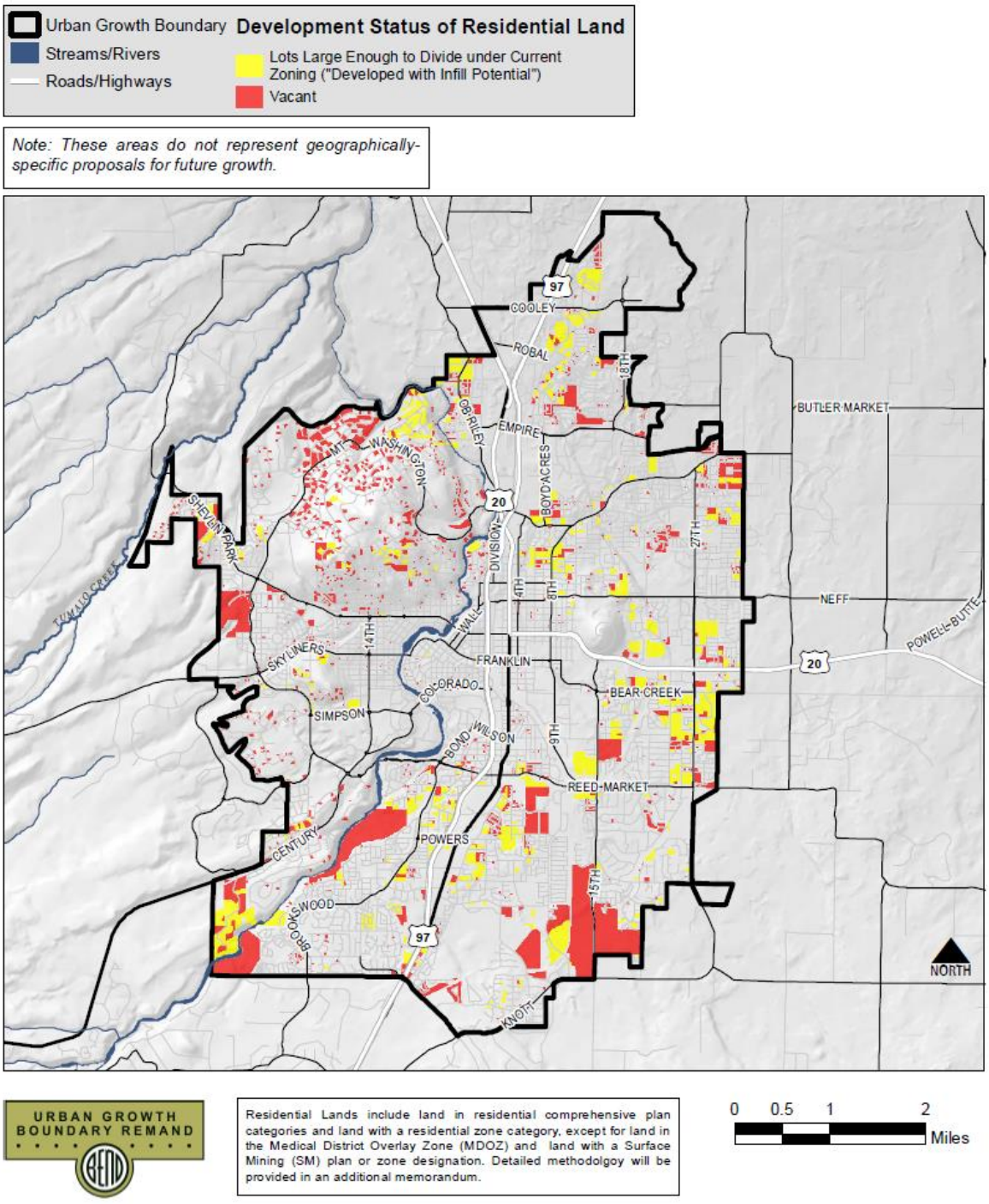
buffer area square footages for the same number of units (1 unit: 5000sf, 2 units: 5500 sf, 3-4 units: 6650 sf). For the two lots with >4 units and no building footprint info, used aerial photo and/or comparable adjacent lot to approximately measure area around existing buildings.

3. Calculate Vacant and Developed Area
    a. Where either acres available under zoning or acres remaining after subtracting building footprints & buffers are less than a half-acre, code the unconstrained portion of the lot as developed.
    b. Where both acres available under zoning and acres remaining after subtracting building footprints & buffers are more than a half-acre, code the greater of the two as the developed acres, with the remainder coded as vacant.

Plan Designation and Development Status	Vacant Acres	Developed Acres
Publicly Owned	0.0	84.8
Vacant	1325.9	0.0
URA	**0.1**	**51.9**
Developed	0.0	19.3
Publicly Owned	0.0	32.5
Vacant	0.1	0.0
Total	**2607.9**	**9356.7**

As Table 6 shows, there were no tax lots identified as “Lots Large Enough for Additional Units under Current Zoning (Partially Vacant)” that received any vacant acreage. This is because there were no tax lots with this designation that passed the screen detailed in footnote 15. Furthermore, there were no tax lots with this designation greater than ½ acre in total, as shown in the chart in Figure 2.

Figure 6. **Residential BLI Status – Taxlots with Vacant Acreage**



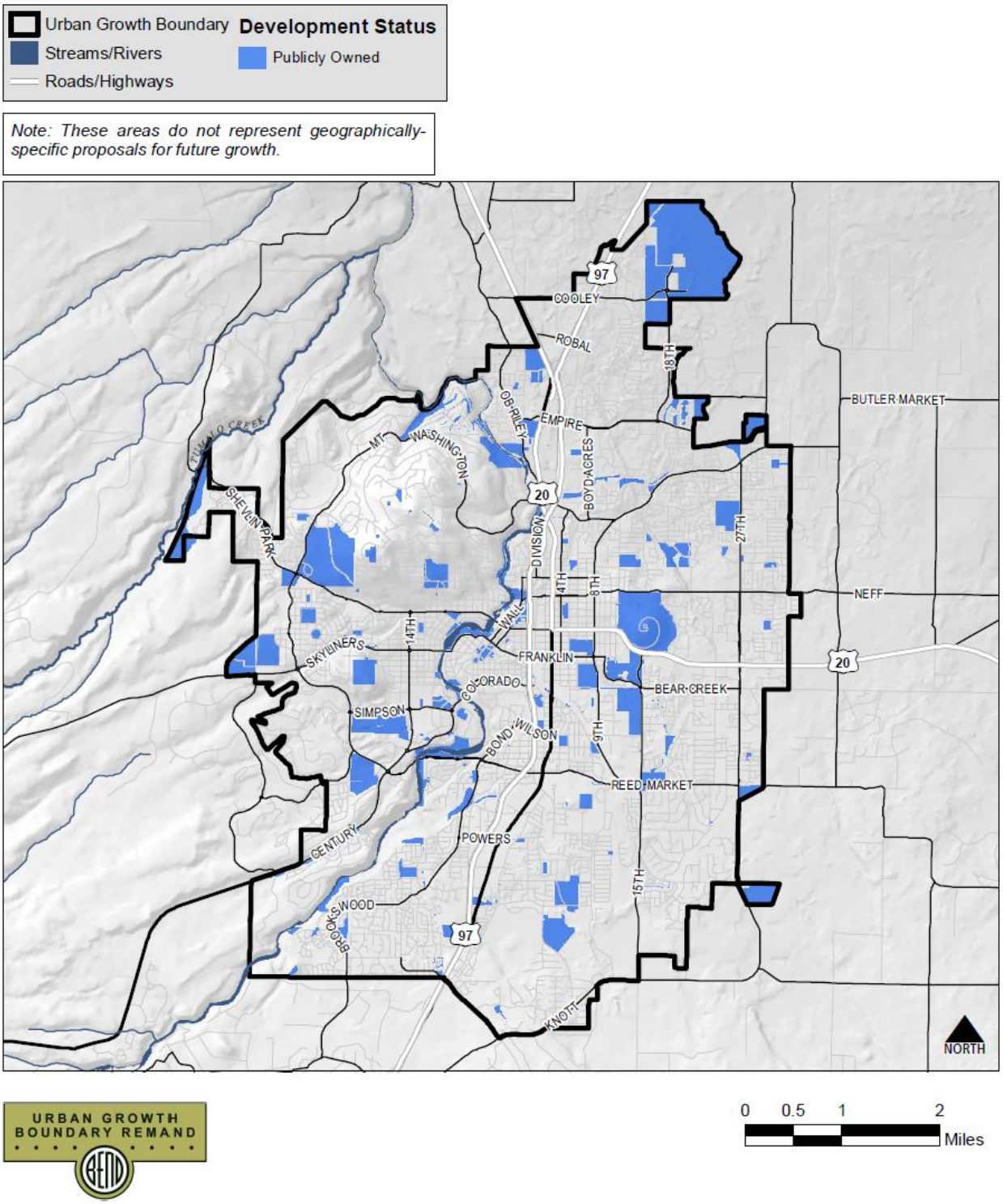
Developable Acreage: Publicly Owned Land

Publically owned lands were classified as developed because they are generally 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, such as the property owned by the Central Oregon Irrigation District in SW Bend. Juniper Ridge, which is also owned by the City of Bend, is considered available for employment uses as well.

Table 6. Developed and Vacant Acres on Publicly Owned Land

Plan Category	Vacant Acres	Developed Acres
CB	0.0	3.1
CG	10.9	13.0
CL	2.2	11.4
IG	0.0	2.8
IL	455.7	26.5
ME	7.5	26.9
MR	0.0	6.9
PF	189.3	489.8
RH	1.1	23.7
RL	0.0	3.8
RM	0.0	43.4
RS	0.0	178.4
URA	0.0	95.9
Grand Total	**666.9**	**925.6**

Figure 7. **Publicly Owned Land**



Developable Acreage: Employment Land

Based on the State's definitions, the extent of physical development was estimated based on aerial photography for parcels over five acres with some improvements. This information was used to classify land into a BLI category, but it was also used to identify vacant and developed portions of those parcels, so that a large parcel with some development but significant vacant acreage is identified as having both vacant and developed acres, to more accurately reflect its (re)development potential. This is consistent with OAR 660-009-0005, because this area represents land that is "likely to be redeveloped during the planning period".

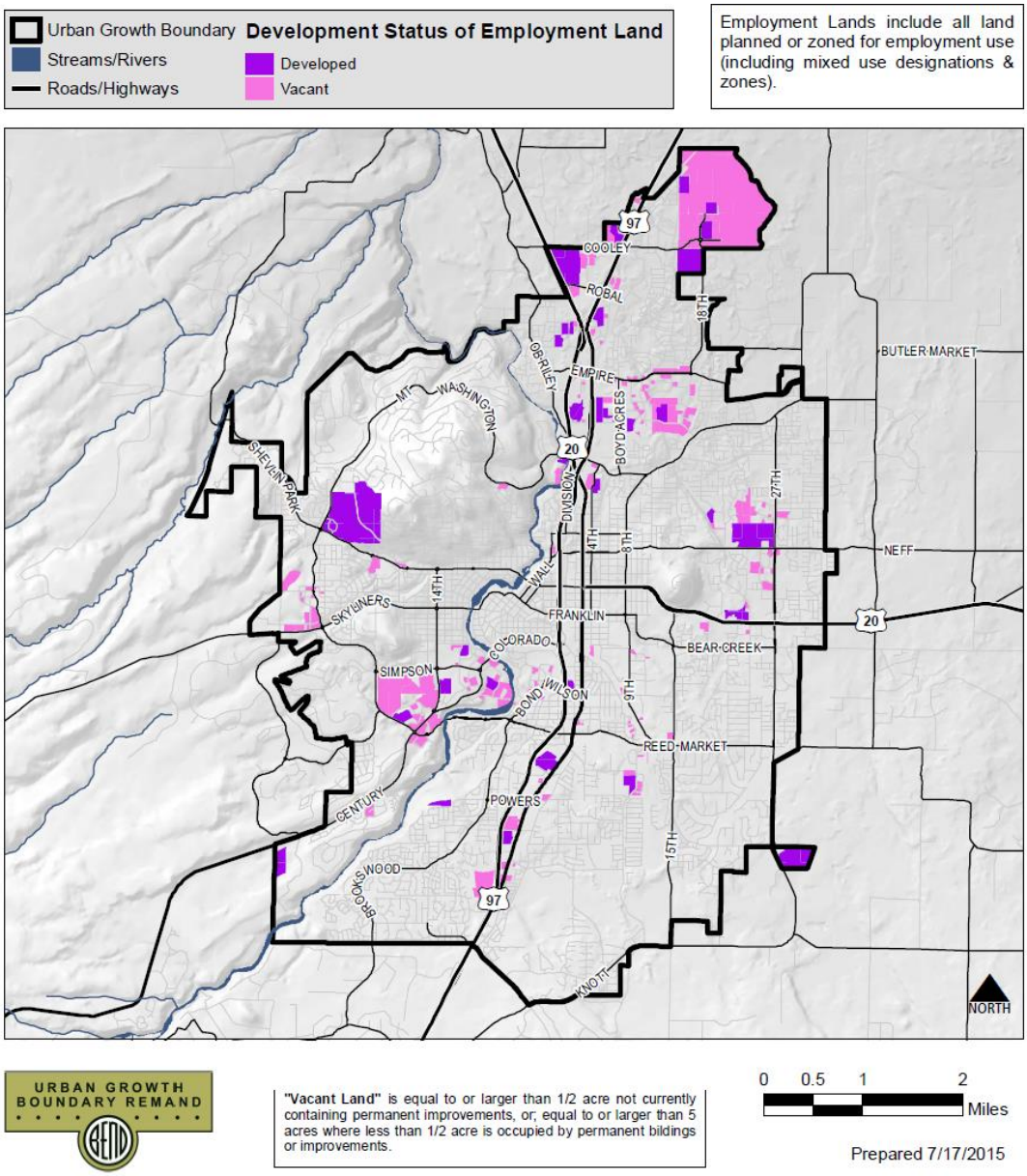
Table 7. Developed and Vacant Acres on Employment Land

Plan Category and Employment BLI Status	Vacant Acres	Developed Acres
CB	**0.0**	**38.5**
Developed	0.0	38.5
Vacant	**0.0**	**0.0**
CC	**11.6**	**65.8**
Developed	0.0	68.0
Vacant	11.6	0.0
CG	**117.1**	**611.2**
Developed	22.0	600.3
Vacant	95.1	10.9
CL	**86.6**	**300.0**
Developed	21.4	300.0
Vacant	65.2	0.0
IG	**7.8**	**182.4**
Developed	0.0	182.4
Vacant	7.8	0.0
IL	**642.6**	**599.0**
Developed	45.9	599.0
Vacant	596.7	0.0
MDOZ*	**72.6**	**177.3**
Developed	17.5	177.3
Vacant	55.1	0.0
ME	**95.8**	**200.3**
Developed	57.9	200.3
Vacant	37.9	0.0
MR	**35.8**	**161.6**
Developed	0.6	161.6
Vacant	35.2	0.0
PF	**190.0**	**155.9**
Developed	113.4	155.9
Vacant	76.7	0.0
PO	**6.0**	**0.0**

Plan Category and Employment BLI Status	Vacant Acres	Developed Acres
Developed	0.0	0.0
Vacant	6.0	0.0
PO/RM/RS	**0.0**	**5.8**
Developed	0.0	5.8
Vacant	00	0.0
RS**	**5.1**	**0.0**
Developed	0.0	0.0
Vacant	5.1	0.0
SM	**18.8**	**0.0**
Developed	0.0	0.0
Vacant	18.8	0.0
Grand Total	**1289.8**	**2497.8**

** Land within the Medical District Overlay Zone (MDOZ) is primarily within residential plan designations, but the overlay encourages development of medical and office uses. It is treated separately within the BLI where possible.*

*** Site has zoning of Surface Mining (SM) and is included in employment inventory.*



CONCLUSION

The primary outcome of the Buildable Lands Inventory is a GIS dataset with values for vacant and developed acres for each parcel within the City of Bend UGB. These values provide a basis for estimating future development and redevelopment. The assumptions that have been applied to this inventory to estimate capacity are documented in the Urbanization Report, which estimates the potential for growth of housing and jobs within the current UGB based on existing conditions, as well as alternate growth scenarios involving changes to the Comprehensive Plan map and development code.

APPENDIX A – GLOSSARY

Plan Designations

Plan designations are spelled out below. For additional information, see the Bend Comprehensive Plan.

Residential Designations:

RL: Residential Low Density

RS: Residential Standard Density

RM: Residential Medium Density

RH: Residential High Density

SR2.5: Suburban Low Density Zone

Employment/Mixed Use Designations:

CB: Central Business District

CC: Community Commercial

CG: General Commercial

CL: Commercial Limited

MR: Mixed Riverfront.

ME: Mixed Employment

PO: Professional Office

SM: Surface Mining

IL: Industrial Limited

IG: Industrial General

PF: Public Facilities

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Bend Housing Needs Analysis

Bend's Growth to 2028

Draft Document: August 14, 2015

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EXECUTIVE SUMMARY

Bend's population grew from about 20,000 people in 1990 to 78,000 people in 2013, more than tripling over this period. Over the same period, Bend's housing stock grew from about 9,000 dwelling units to nearly 34,000 dwelling units, also more than tripling. Most new housing development in Bend was single-family detached housing.

As Bend has grown, housing has become less affordable, especially since 2000. Housing sales prices more than doubled between 2000 and 2013, while household income (not adjusted for inflation) increased by 18%. Rental costs also increased in Bend, with the percentage of households paying $1,000 or more in monthly rent increasing from 9% of households in 2000 to more than 40% of households in 2013.

Bend is planning for growth of about 38,500 people between 2008 and 2028, requiring nearly 16,700 new dwelling units. Bend's housing needs are changing, based the following key demographic changes occurring in Bend and across the nation:

- **Growth in Baby Boomers (Age in 2014: 48 to 67 years old; Age in 2028: 62 to 81 years old).** People over age 65 years old are projected to grow by more than 37,000 people over the planning period. Given that Bend's population accounts for about half of the County's population, about half of this growth will be in Bend. Households over 65 typically have lower income than younger households. Those without accumulated wealth (e.g., housing equity or investments) may choose lower-cost multifamily housing. Some Baby Boomers may choose to downsize their housing, resulting in greater demand for small single-family dwellings, cottages, accessory dwelling units, townhomes, apartments, and condominiums.
- **Growth Millennials (Age in 2014: 17 to 30 years old; Age in 2028: 31 to 44 years old).** Millennials are expected to grow by about 14,000 people in Deschutes County over the planning period. Given that Bend's population accounts for about half of the County's population, about half of this growth will be in Bend. Younger Millennials typically have lower income and may have higher debt. Growth in Millennials will increase need for affordable housing for renters and homeowners such as: small single-family dwellings, cottages, accessory dwelling units, duplexes, townhomes, garden apartments, and apartments.
- **Growth in Hispanic and Latino population.** Hispanic and Latino population more than doubled between 2000 and 2013, growing by nearly 6,000 people. Hispanic and Latino population is expected to continue to grow throughout the State, including in Bend, through 2028. To the extent that in-migrating Hispanic and Latino households have lower than average income, then in-migration of ethnic groups will increase demand for housing affordable to low- and moderate-income households relative to demand for other types of housing. Growth in Hispanic and Latino households will increase need for affordable housing for renters and homeowners such as: single-family dwellings (both smaller and larger sized dwellings), duplexes, larger townhomes, garden apartments, and apartments. Ownership opportunities for Hispanic and Latino households will focus

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on moderate-cost ownership opportunities, such as single-family dwellings on a small lot or in a more suburban location, duplexes, and townhomes.

These demographic changes, combined with the existing and growing needed for affordable housing, shows a growing need for single-family attached housing (such as townhomes) and multifamily housing. While the majority of new housing will continue to be single-family detached housing, the type of single-family detached dwellings may change, with more emphasis on smaller and more affordable new single-family detached housing and a decrease in demand for large-lot single-family detached housing.

The preliminary conclusion of the housing needs analysis is that Bend's current housing policies result in a mix of housing that is not consistent with Bend's needed mix, for an increase in percentage of single-family attached housing, multifamily housing, and more affordable single-family detached housing. The on-going discussions of land use efficiency measures and policy changes that Bend adopts will result in a change in the opportunity for development of comparatively affordable housing types.

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CHAPTER 1. INTRODUCTION

Role of the HNA

This report presents a housing needs analysis (HNA) for the City of Bend. The purpose of this analysis is to address the requirements for planning for needed housing in urban areas with a population of 25,000 or more under ORS 197.296(3) and (5). These requirements include, but are not limited to, an inventory of buildable lands for housing, an analysis of national, state, and local demographic and economic trends, and recommendations for a mix and density of needed housing types.

The HNA is a supporting document of the City of Bend Comprehensive Plan. The HNA documents historical housing and demographic trends, the projection of population and housing growth, and analysis of housing affordability. Based on this analysis, the HNA estimates needed housing density and mix for the 2008 to 2028 period. The HNA compares the forecast of needed housing with the capacity of Bend's land base to accommodate new housing from the Bend Buildable Lands Inventory Report (BLI). The BLI is one of four inter-related documents that are central in the City's planning related to the UGB. The major components of each are summarized below in Table 1.

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Table 1: Four Key Documents for Bend's Urban Growth Boundary Planning

Document	Buildable Land Inventory (BLI)	Housing Needs Analysis (HNA)	Economic Opportunities Analysis (EOA)	Urbanization Report (UR)
Purpose	Identify buildable residential & employment land by category	Address the requirements for planning for needed housing, including analysis of national, state, and local demographic and economic trends, and recommendations for a mix and density of needed housing types	Document historical housing and demographic trends, the projection of employment growth, identification of target industries, and evaluation of site characteristics needed to accommodate target industries	Analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas
Primary Legal Standards[1]	ORS 197.296 OAR 660, Divisions 8 and 9	Statewide Planning Goal 10: Housing ORS 197.296 and 197.303 OAR 660, Division 8	Statewide Planning Goal 9: Economic Development OAR 660, Division 9	Statewide Planning Goal 14: Urbanization ORS 197.298 OAR 660, Division 24
Key Subject Matter	Development status categories and definitions Methodology for assigning categories and conducting inventory Inventory results: acres by plan designation and development status	Projection of population and total housing growth Housing market and development trends Demographic characteristics and trends Analysis of affordability Estimate of needed housing (mix and density) Comparison of housing capacity to need	Existing policy and vision National, state, local trends Employment projections Target industries Site needs and characteristics Special site needs Redevelopment analysis Comparison of employment capacity to need and characteristics	Methodology for capacity estimates Pre-policy ("base case") capacity estimate for current UGB Efficiency measures (EMs) proposed Current UGB capacity with EMs UGB alternatives evaluation methodology and results Proposed UGB expansion and summary of Goal 14 evaluation results

[1] OAR = Oregon Administrative Rules; ORS = Oregon Revised Statutes

This HNA uses the 2008 HNA adopted by the City of Bend as a foundation. The information and conclusions of the updated HNA are the basis for determination of residential land sufficiency for the 2008-2028 period. This HNA collects the most recent works on residential land need for the City of Bend, addresses issues identified in the 2010 Remand Order, and incorporates direction from the Remand Task Force (RTF) and the Bend Urban Growth Boundary (UGB) Remand project's Residential Technical Advisory Committee (Residential TAC) and Urban Growth Boundary Steering Committee (USC).

An important consideration for the HNA update is that it must address issues identified in the Remand and partial acknowledgement of a decision made in December 2008. A key issue is the planning horizon for the project. The HNA uses the 2008-2028 timeframe, but updates key elements of the HNA to reflect changes that have occurred since 2008. This updated HNA relies on the 2008-2028 population and housing forecasts that were acknowledged by the Land Conservation and Development Commission's (LCDC) 2010 remand order.[2] The HNA presents data from the updated buildable land inventory, which was updated to reflect development that occurred in Bend between 2008 and 2014. The HNA also analyzes changes in Bend's housing market between 2008 and 2013 to account for housing from the 2008-2028 forecast that already occurred.

Framework for a Housing Needs Analysis

The following section describes the state requirements for a housing needs analysis and some key concepts necessary for understanding the housing needs analysis. This section concludes with a discussion of the steps in completing a housing needs analysis, based on a 1997 guidebook, "Planning for Residential Growth."

State Statutes and Administrative Rules

In an effort to address all requirements in statutes and administrative rules for an HNA, this document follows the suggested framework of "Planning for Residential Growth," a guide book prepared in 1997 by the Oregon Transportation and Growth Management (TGM) Program to assist local governments in developing an HNA that complies fully with applicable portions of ORS 197.296 and 197.303, as well as OAR 660-008.[3]

Statewide Planning Goal 10, Housing, is to provide for the housing needs of the citizens of the state.[4] Goal 10 requires cities to inventory lands for residential use and to develop plans that encourage the development of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.

ORS 197.296 provides further requirements for complying with Goal 10. ORS197.296 requires the city to conduct an analysis of housing need by type and density range in accordance with

[2] The Commission's Remand Order is available on-line at: http://bendoregon.gov/modules/showdocument.aspx?documentid=5343.

[3] The guidebook is available on-line at http://www.oregon.gov/LCD/docs/publications/planning_for_residential_growth.pdf.

[4] See OAR 660-0015-0000(10)

ORS 197.303 and statewide planning goals and rules relating to housing. The purpose of this is to determine the amount of land needed for each needed housing type for the next 20 years.

ORS 197.296 requires cities to inventory buildable residential lands and determine the capacity of that land. It requires cities to determine housing capacity and housing need based on: (1) analysis of residential development, (2) trends in residential density and mix, and (3) demographic and economic trends.

ORS 197.296 requires the analysis of housing mix and density to include the past five years or since the most recent periodic review, whichever time period is greater.[5] Bend completed periodic review in 1998. The City had relatively little development over the 2008 to 2014 period, resulting in little change in development densities since 1998. However, the 2007-2009 recession resulted in substantial and long-lasting changes in the housing market, including changes that will affect future housing mix in Bend. As a result, the analysis of housing density is based on analysis of data from 1998 to 2008 but this HNA presents an update the analysis of trends affecting housing mix to include changes in the housing market, demographics, and other factors over the 2008 to 2014 period. These changes will affect Bend's housing market throughout the HNA's planning period.

ORS 197.303 defines needed housing as: single-family detached housing, single-family attached housing, multifamily housing, government assisted housing, and mobile or manufactured homes on lots or in parks.

Appendix B provides the text of key sections of ORS 197.296 and 197.303.

LCDC has adopted an administrative rule at OAR 660-008 to ensure opportunity for the provision of adequate numbers of needed housing units, the efficient use of buildable land within urban growth boundaries and to provide greater certainty in the development process so as to reduce housing costs[6], This rule is intended to define standards for compliance with Goal 10 and to implement ORS 197.303 through 197.307.

Key definitions for the Housing Needs Analysis

This section defines key terms used in the HNA: housing need, housing market demand, and affordable housing.

The language of Goal 10 and ORS 197.296 refers to housing *need*: it requires communities to provide needed housing types for households at all income levels. Put another way, a city's comprehensive plan must show that an adequate supply of land has been planned and zoned for all types of needed housing. Goal 10's broad definition of need covers all households—from those with no home to those with second homes. State policy does not make a clear distinction between need and demand. Following is the definition commonly used in housing needs analysis, which is consistent with definitions in state policy:

[5] Specifically, ORS 197.296(5) (b) states: "A local government shall make the determination described in paragraph (a) of this subsection using a shorter time period than the time period described in paragraph (a) of this subsection if the local government finds that the shorter time period will provide more accurate and reliable data related to housing capacity and need. The shorter time period may not be less than three years."

[6] See OAR 660-008-0000, Purpose

- *Housing need* can be defined broadly or narrowly. The broad definition is based on the mandate of Goal 10 that requires communities to plan for housing that meets the needs of households at all income levels. Goal 10, though it addresses housing, emphasizes the impacts on the households that need that housing. Since everyone needs shelter, Goal 10 requires that a jurisdiction address, at some level, how every household will be affected by the housing market over a 20-year period. Public agencies that provide housing assistance (primarily the Department of Housing and Urban Development – HUD, and the Oregon Housing and Community Services Department - HCS) define housing need more narrowly. For them, households in need do not include most of the households that can purchase or rent housing at an "affordable" price, consistent with the requirements of their household characteristics. Households that cannot find and afford such housing have need: they are either unhoused, in housing of substandard condition, overcrowded, or spending more of their monthly income on housing than their income and federal standards say they can afford.
- *Housing market demand* is what households demonstrate they are willing to purchase in the market place. Growth in population means growth in the number of households and implies an increase in demand for housing units. That demand is met, to the extent it is, primarily by the construction of new housing units by the private sector based on its judgments about the types of housing that will be absorbed by the market. ORS 197.296 includes a market demand component: buildable land needs analyses must consider the density and mix of housing developed over the previous five years or since their most recent periodic review, whichever is greater. In concept, what got built in that period was the effective demand for new housing: it is the local equilibrium of demand factors, supply factors, and price.

In short, a housing needs analysis should make a distinction between housing that people might need (a normative, social judgment) and what the market will produce (an observable outcome).

Another term using in the housing needs analysis is "affordable housing." The terms "affordable" and "low-income" housing are often used interchangeably. These terms, however, have different meanings:

- *Affordable housing* refers to a household's ability to find housing within its financial means. This term does not refer to either the development or the occupancy of housing through a public subsidy. A number of indicators exist that can be used to determine whether housing is affordable. One indicator is cost burden: households that spend more than 30% of their income on housing and certain utilities are considered to experience cost burden.[7] Any household that pays more than 30% experiences cost burden and does not have affordable housing. Thus, affordable housing applies to all households in the community.

[7] Cost burden is a concept used by HUD. Utilities included with housing cost include electricity, gas, and water, but do not include telephone expenses. All of the indicators ECO has reviewed, including cost burden, have limitations that can distort results. Cost burden does not consider the impact of household size or accumulated assets. As a result a single-person household with an annual income of $20,000 and accumulated assets of $500,000 would be in the same category as a family of seven with an annual income of $20,000 and no accumulated assets.

- *Low-income housing* refers to housing for "low-income" households. HUD considers a household low-income if it earns 80% or less of median family income. In short, low-income housing is targeted at households that earn 80% or less of median family income, which equated to an annual household income of $47,760 or less in 2013. Low-income households may include those that need some type of financial assistance to close the gap between what they can afford to spend on housing and the prices of housing available in the market.
- *Workforce housing* generally refers to housing that is affordable to households that earn between 60% and 120% of the median family income, which was an annual household income of between $35,800 and $71,640 in 2013.

Steps in the Housing Needs Analysis

The methodology used in the HNA is consistent with the DLCD guidebook, "Planning for Residential Growth," that outlined what steps to perform to complete a housing needs analysis that satisfies state law.[8] These six steps are:

Step 1 – Project the number of new housing units needed in the next 20 years,

Step 2 – Identify relevant national, state, and local demographic and economic trends and factors that may affect the 20-year projection of structure type mix.

Step 3 – Describe the demographic characteristics of the population, and, if possible, household trends that relate to demand for different types of housing.

Step 4 – Determine the types of housing that are likely to be affordable to the projected households based on household income.

Step 5 – Estimate the number of additional needed units by structure type.

Step 6 – Determine the needed density ranges for each plan designation and the average needed net density for all structure types.

To summarize, the City is required to consider its needs for future housing based on type and density over a 20-year planning period. This analysis of housing must examine current and future demographic and economic trends that will influence the types of housing produced and purchased or rented, In addition, this analysis must consider the types of housing needed at various price ranges and rent levels. One of the final steps in this process is an estimate of the number of additional units that will be needed by structure type. Once the City has done this, the City must show that an adequate supply of land for needed housing has been or will be planned and zoned within the existing UGB, and if necessary any area added through an expansion, to demonstrate that the General Plan satisfies Goal 10.

The housing needs analysis is organized by these steps. The next section of the report presents residential development trends, which forms the basis for the housing needs analysis.

[8] See pages 25 through 33, Planning for Residential Growth: A Workbook for Oregon's Urban Areas, Transportation and Growth Management Program, Lane Council of Governments, and ECO-Northwest (1997) -: http://www.oregon.gov/LCD/docs/publications/planning_for_residential_growth.pdf.

Prior Housing Needs Analyses and Remand Issues

The purpose of this section is to provide a brief review of the city's past work on completing a housing needs analysis consistent with Goal 10. The City provided this information to the Department of Land Conservation and Development (DLCD) and LCDC in January of 2010 as a component of the City's Appeal of the Director's January 8, 2010 Order and Report on the City's Proposed UGB Expansion,

In 2005, the City completed a buildable lands inventory (2005 BLI) (Supp. Rec. 1987) and a housing needs analysis (2005 HNA) (Rec. 2046). The City followed DLCD's Goal 10 guidebook to develop both products. After further work with a technical advisory committee (TAC), the City updated the 2005 HNA in April 2006 (Supp. Rec. 2157).

In 2007, consultant Angelo Planning Group (APG) prepared a final report that presented land need estimates for housing, schools, parks, and institutional uses (Rec. 2137). This 2007 report also presented a series of forecasts for residential land needs, following Oregon Revised Statutes (ORS) 197.296 and DLCD's Goal 10 workbook. Another consultant, Cogan Owens, prepared a draft General Plan housing element that, along with the 2007 APG land need report, were submitted to DLCD with a 45-day notice on June 11, 2007. (Supp. Rec. 1587, 1789.) Following the initial public hearings in July and August of 2007, the City, working in public work sessions of the Bend Planning Commission and with liaisons of the Deschutes County Planning Commission, reviewed and amended the proposed elements of the UGB expansion, including the work that supported the housing element.

From September 2007 through October 2008, the Bend Planning Commission held 35 public work sessions on the UGB expansion. Through these work sessions, which included extensive public input, the City revised its draft buildable lands inventory, housing needs analysis, and residential land need estimate. This work resulted in 2008 versions of the buildable lands inventory, housing needs analysis (Rec. 1280, 1728), and residential land needs analysis that were incorporated in the 2008 version of the housing element submitted to DLCD in 2009.

On November 2, 2010, LCDC issued its final order of remand and partial acknowledgement on the UGB expansion and its components. The final order was not appealed, and became final in January 2011. With respect to the HNA adopted as part of the UGB expansion, the Commission's order remands the city's decision for it to revise its findings and chapter 5 of its comprehensive plan consistent with a detailed analysis contained in the order.[9] That analysis is based on the January 2010 Director's Report and Order which specifies those tasks the City must complete, described in Appendix B.

Time Periods and Data used in the Housing Needs Analysis

This housing needs analysis uses three periods of time for historical analysis and for the forecast of housing need:

- **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

[9] See Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3, p. 33.

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.

- **Trend Period**, ORS 197.296(5)(a) 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 City of Bend Comprehensive Plan. This HNA relies on data collected from 1998 to 2008.
- **Extended Trend Period**. The HNA was originally developed with data available up to 2008. This HNA extends the trend data to include data available between 2008 and 2013. This additional data provides information about changes in Bend's housing market since 2008.

This analysis uses data from multiple well-recognized and reliable data sources. One of the key sources for data about housing and household data is the U.S. Census. This report primarily uses data from two Census sources:

- The **Decennial Census**, which is completed every ten years and is a survey of all households in the U.S. The Decennial Census is considered the best available data for information such as demographics (e.g., number of people, age distribution, or ethnic or racial composition); household characteristics (e.g., household size and composition); and housing occupancy characteristics. As of the 2010 Decennial Census, it does not collect more detailed household information, such as income, housing costs, housing characteristics, and other important household information. The HNA uses Decennial Census data from 1990, 2000, and 2010.
- The **American Community Survey (ACS)**, which is completed every year and is a sample of households in the U.S. The ACS collects detailed information about households, such as demographics (e.g., number of people, age distribution, ethnic or racial composition, country of origin, language spoken at home, and educational attainment); household characteristics (e.g., household size and composition); housing characteristics (e.g., type of housing unit, year unit built, or number of bedrooms); housing costs (e.g., rent, mortgage, utility, and insurance); housing value; income; and other characteristics. This report uses three types of data from the 2013 ACS: (1) one-year ACS data for 2013, (2) three-year ACS data for 2011-2013, and (3) five-year ACS data for 2009-2013. In some cases, one-year data from the 2013 ACS is not available in Bend (as a result of sampling and statistical reasons). In those instances, this report uses 3-year estimates for 2011-2013 data or 5-year estimates for 2009-2013 for Bend.

The housing needs analysis incorporates key information from the 2008 adopted Housing Needs Analysis, such as the forecast of new housing for the 2008-2028 period. This analysis addresses the issues identified in the 2008 Housing Needs Analysis, described in Appendix B.

CHAPTER 2. HISTORICAL AND RECENT DEVELOPMENT TRENDS

Analysis of historical development trends in Bend provides insights into how the local housing market functions. The housing type mix and density are also key variables in forecasting future land need. Moreover, such an analysis is required by ORS 197.296. The specific steps are described in Task 2 of the Transportation Growth Management's *Planning for Residential Lands* Workbook:

1. Determine the time period for which the data must be gathered
2. Identify types of housing to address (all needed housing types)
3. Evaluate permit/subdivision data to calculate the actual mix, average actual gross density, and average actual net density of all housing types

ORS 197.296 requires the analysis of housing mix and density to include the past five years or since the most recent periodic review, whichever time period is greater.[10] Bend's last periodic review was completed in 1998. The period used in the analysis of housing mix is 1999 to 2013, to account for trends in housing mix beyond 2008. The period used in the analysis of housing density was 1999 to 2008, from the adopted 2008 housing needs analysis.

The HNA presents information about residential development by housing types. There are multiple ways that housing types could be grouped. For example, housing types could be grouped by:

1. Structure type (e.g., single-family detached, apartments, etc.)
2. Tenure (e.g., distinguishing unit type by owner or renter units)
3. Housing affordability (e.g., units affordable at given income levels)
4. Some combination of these categories

LCDC's November 2010 order identifies the types of housing the City must consider through this housing needs analysis. The Commission's disposition of this matter was based, in part, on ORS 197.303(3)(a), which identifies "needed housing:"

[10] Specifically, ORS 197.296(5) (b) states: "A local government shall make the determination described in paragraph (a) of this subsection using a shorter time period than the time period described in paragraph (a) of this subsection if the local government finds that the shorter time period will provide more accurate and reliable data related to housing capacity and need. The shorter time period may not be less than three years."

(a) Housing that includes, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy;

(b) Government assisted housing;

(c) Mobile home or manufactured dwelling parks as provided in ORS 197.475 to 197.490; and

(d) Manufactured homes on individual lots planned and zoned for single-family residential use that are in addition to lots within designated manufactured dwelling subdivisions.

The Commission's rules further define the three types of housing that must be considered in the housing needs analysis. The following table lists these three types of housing and how they are classified under the Bend Development Code.

Table 2. Comparison of OAR 660, Division 8 Definitions with Types of Housing Allowed under the Bend Development Code

OAR 660-008-005, Definitions	Bend Development Code (See BDC Chapter 1.2)
"Attached Single Family Housing" means common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot. OAR 660-008-0005(1).	Dwelling, single family attached
"Detached Single Family Housing" means a housing unit that is free standing and separate from other housing units. OAR 660-008-0005(3).	Courtyard housing Dwelling, single family detached Accessory dwelling units Manufactured home on individual lot Manufactured homes in parks
"Multiple Family Housing" means attached housing where each dwelling unit is not located on a separate lot. OAR 660-008-0005(5).	Condominium Two and three family housing (duplex and triplex) Multi-family housing (more than 3 units)

Residential Development Trends

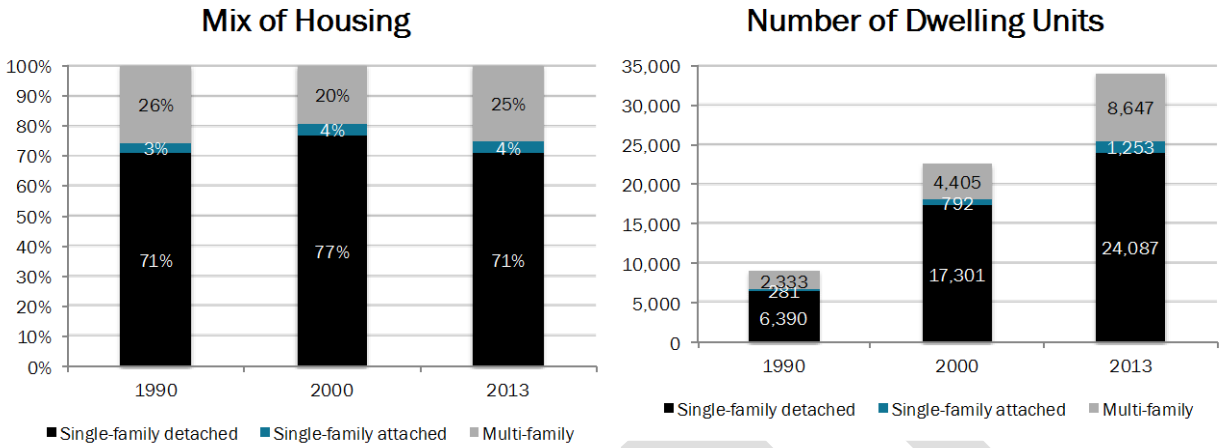
Trends in Housing Mix

Housing mix is the mixture of housing (structure) types (e.g., single-family detached, single-family attached, or multi-family housing) within a city. This section presents data on the distribution of housing by type, or the number of units in each structure. The purpose for considering this data is to see whether the distribution of housing has changed, thereby reflecting different housing choices among Bend households. Figure 1 shows changes in units by structure type from 1990 to 2013 in Bend. Since 1990:

- The supply of housing units in Bend grew by 150% (about 13,500 units) between 1990 and 2000 because of housing construction and annexation. Growth of housing between 2000 and 2013 (nearly 11,700 units) was primarily the result of new construction; no additional units were added through annexation.
- The distribution of units by type did not change significantly over the 23 year period; single family detached dwellings represented 71% to 77% of the supply of housing units.
- Single family attached units increased slightly from 3% to 4% of the housing units.

- Multi-family attached units (all other units), decreased slightly, from 26% to 25%, of all units. Between 2000 and 2013, more than 4,000 multi-family dwellings were built in Bend. As of July 2015, more than 1,300 multifamily units were in the permitting process (not shown in Figure 2).

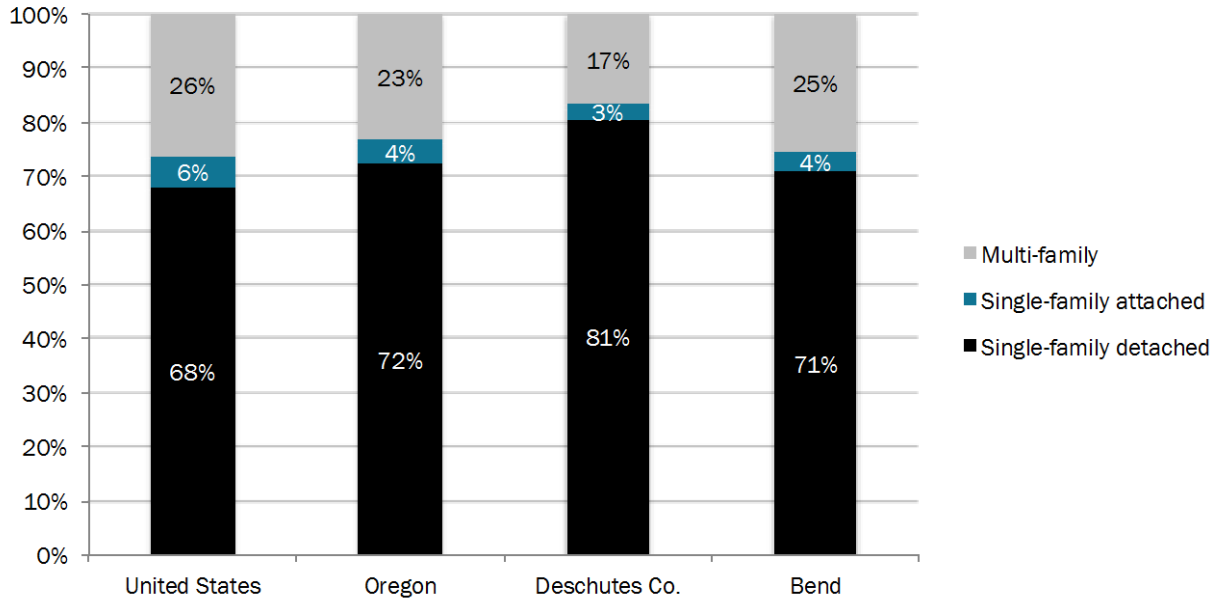
Figure 1. Mix of Housing and Number of Dwelling Units by Housing Type, Bend, 1990, 2000, and 2013



Source: 1990 and 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Figure 2 shows the mix of housing by unit type (for all housing units in the housing stock) at the national, state, and local levels in 2013. About 71% of Bend's housing was single-family-detached, compared to the state average of 72% and the national average of 68%.

Figure 2. Mix of Housing by Type for all Dwelling Units, US, Oregon, Deschutes Co. and Bend, 2013

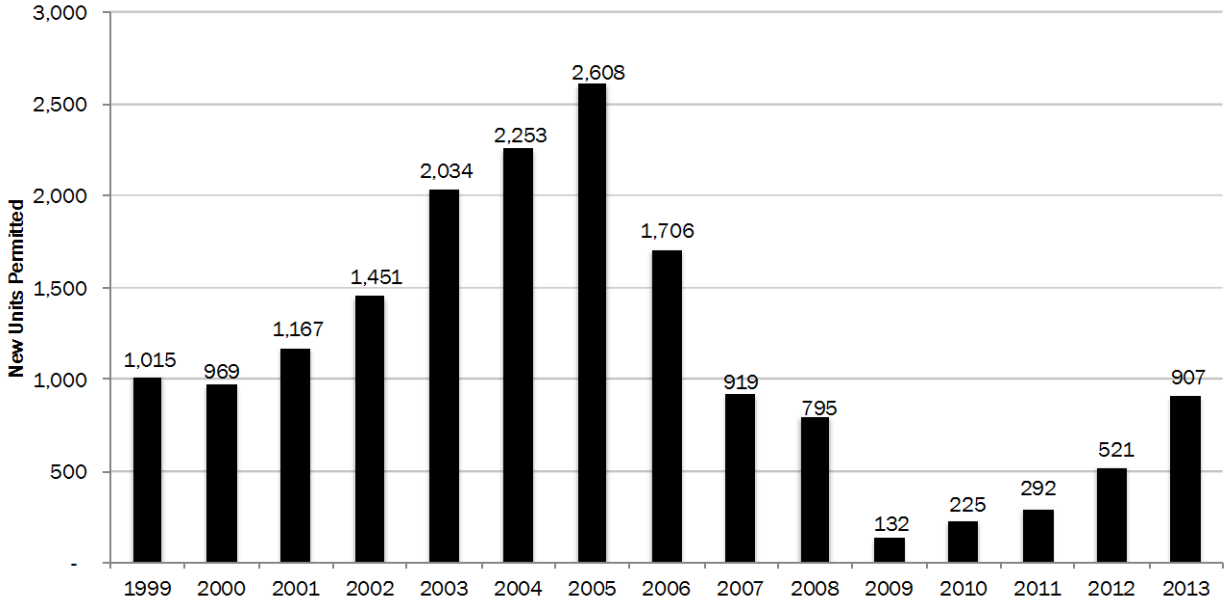


Source: 2013 American Community Survey 1-Year Estimates

Building permit activity

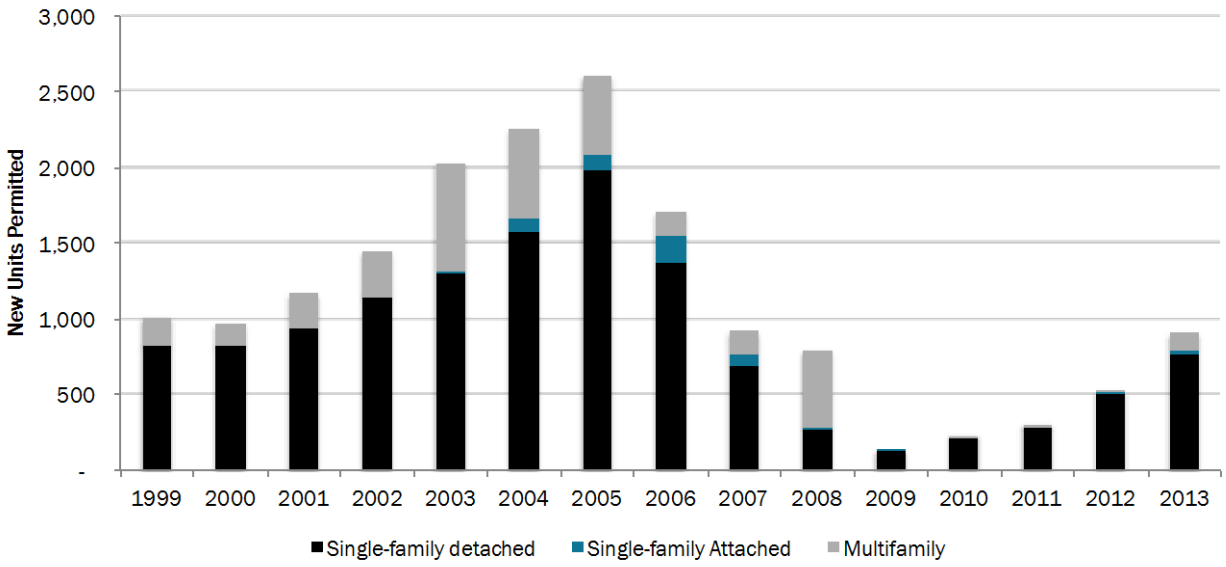
Figure 3 shows total number of dwelling units permitted for housing of all types in Bend between 1999 and 2013. The data show growth of building permit activity between 2001 and 2005 and a significant decline in residential development activity between 2006 and 2009, which corresponds with the national growth and decline of the housing market bubble. Development has steadily increased since 2009 to a total of 907 permits issued for 2013 and 512 permits issued through the first six months of 2014.

Figure 3. Total Permits Issued for New Residential Development (in dwelling units) by Year, 1999 through July 2014, Bend



Source: City of Bend building permit data; analysis by ECONorthwest

Figure 4. Total Permits Issued by Type of Unit for New Residential Development (in dwelling units) by Year, 1999 through July 2014, Bend



Source: City of Bend building permit data; analysis by ECONorthwest

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Table 3 shows new dwellings permitted in Bend for the January 1999 and June 2008, between July 2008 and 2008 through 2013 periods by housing type. The data shows that the majority (about 3/4) of housing development in Bend during these periods was single-family detached housing.

Between January 2014 and June 2015, the City has issued permits for more than 1,300 additional permits, 85% of which were single-family detached. However, by July 2015, 16 multifamily projects were in the permitting process, with a total of 1,367 multifamily units.[11] If these units are permitted, then the City will have permitted in one year almost half as many multifamily units as the City permitted over the entire 1999 to 2014 period. Including these multifamily units, more than 55% of new housing permitted for the January 2014 to mid-2015 period.

Table 3. Total Permits Issued for New Residential Development (in dwelling units) by Housing Type and Year, 1999 through July 2014, Bend

Housing Type	1999-June 2008		July 2008-June 2014		Total Units		Annual Average (1999-July 2014)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Single-family detached	10,875	77%	2,411	83%	13,286	78%	949	78%
Single-family Attached	463	3%	112	4%	575	3%	41	3%
Multifamily	2,741	19%	389	13%	3,130	18%	224	18%
Total	14,079	100%	2,912	100%	16,991	100%	1,214	100%

Source: City of Bend building permit data; analysis by ECONorthwest

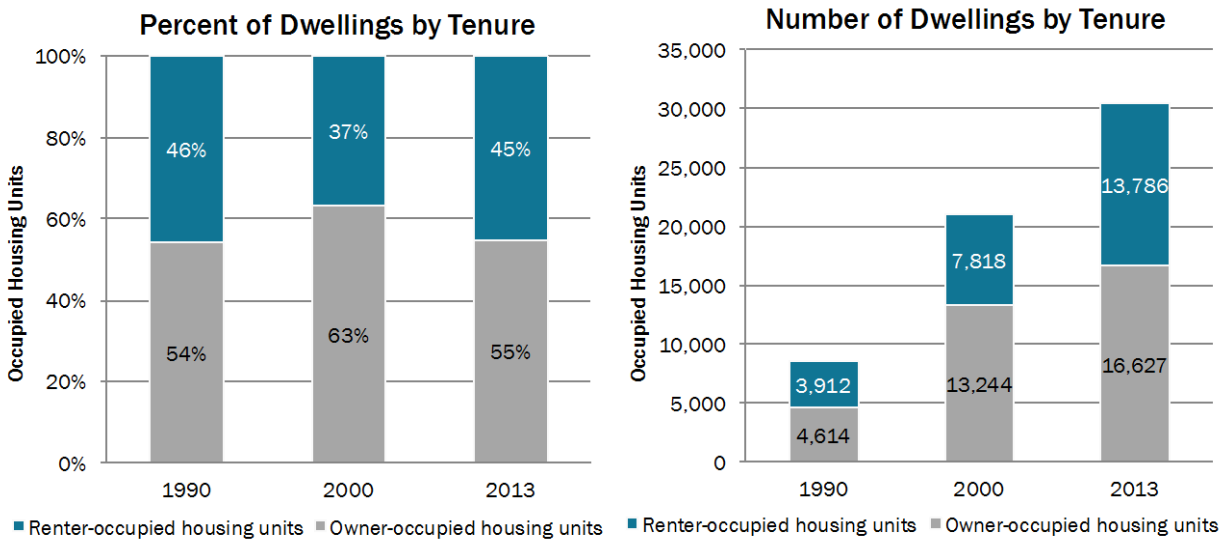
[11] These units are at different parts of the permitting process, ranging from pre-application conference to site plan review to site plan approval.

Trends in Tenure

Figure 5 and Figure 6 present data on occupancy and tenure trends for Bend between 1990 and 2013. The data on occupancy presents the numbers of housing units either occupied or vacant. The data on tenure informs the analysis by describing the numbers of units that are either owner-occupied or renter occupied. Please note that the number of units described by tenure are occupied and also describe household choices on whether to purchase or rent housing.

Figure 5 shows that homeownership rates increased from 1990 to 2000 (from 54% to 63%) but returned to roughly 1990 levels by 2013 (55%).

Figure 5. Occupied Housing and Number of Occupied Dwellings by Tenure, Bend, 1990, 2000, and 2013



Source: 1990 and 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

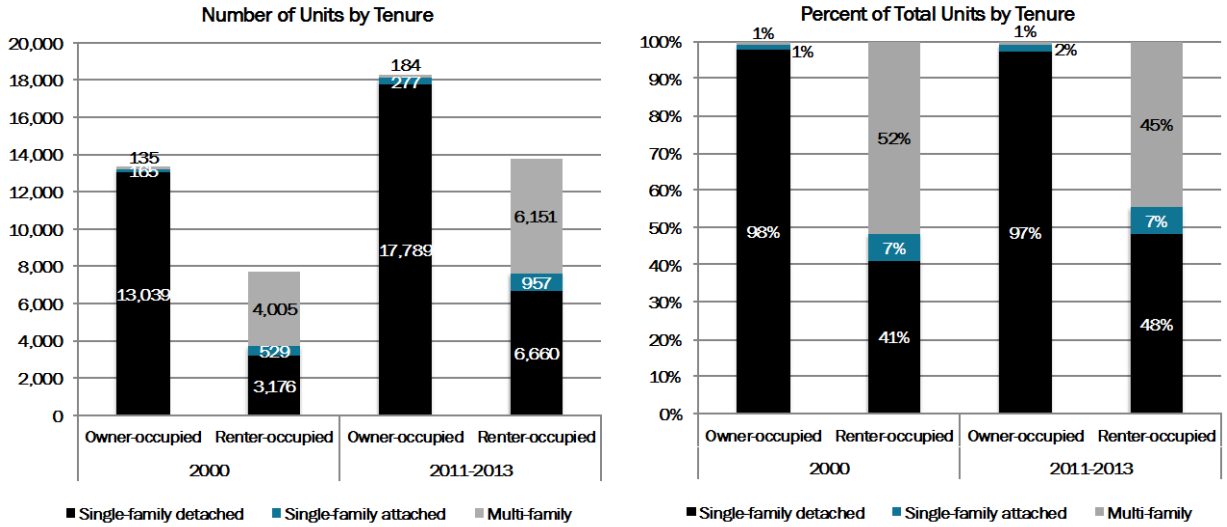
Figure 6 presents data on tenure by housing type for 2000 and 2011-2013.[12]

- The number of dwelling units of all types and tenure increased between 2000 and 2011-2013.
- Nearly all owner-occupied housing was and remains in single-family detached housing types, with a 1% increase in the percentage of owner-occupied single-family attached housing between 2000 and 2011-2013.
- The number and percentage of single-family detached units that were renter-occupied increased over this period, with single-family detached units accounting for 41% of rent-occupied units in 2000 and 48% in 2011-2013. This change may, in part, be the continued effects of the recent recession and housing market downturn, where some single-family detached units that were foreclosed on were used for rental units.

[12] This figure presents data from the American Community Survey for the 2011 to 2013 period, known as a 3-year estimate from the American Community Survey, because data was not available in Bend for a 1-year estimate for 2013.

Compared to other Oregon cities, Bend has a relatively large percentage of rental housing that is single-family detached housing. In 2011-2013, single-family detached housing accounted for the following percentages of rental housing: 26% in Portland, 29% in Eugene, 32% in Salem, and 40% in Medford.

Figure 6. Occupied Units by Tenure and Type, Bend, 2000 and 2011-2013

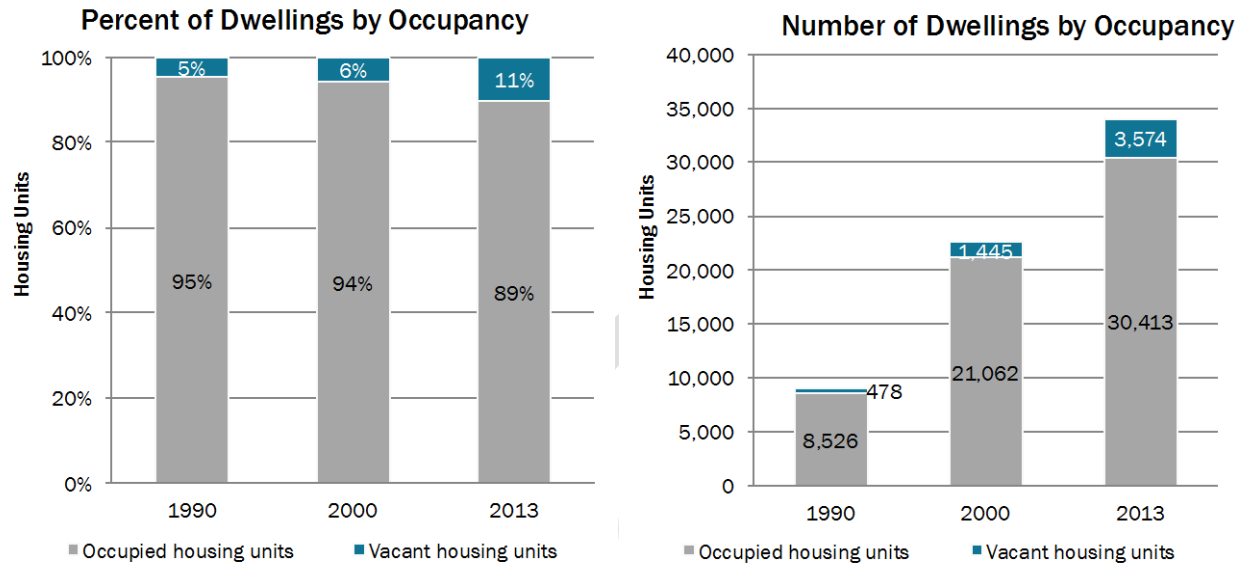


Source: 2000 Census SF3, 2013 American Community Survey 3-Year Estimates

Vacancy Rates

Vacancy rates are cyclical and represent the lag between housing demand and the market's response to that demand by producing additional dwelling units. Figure 7 shows that housing vacancies were about 5% in 1990 and 6% in 2000. In 2013, Bend vacancies were 11%. While vacancy rates were relatively high in 2013 when compared to 1990 and 2013, it is reasonable to expect Bend's vacancy rates to decrease to historical averages (e.g., 5%) with changes in the housing market. In 2015, a survey of rental properties showed that rental vacancy rates were below 2% in Bend, demonstrating a sharp decrease in vacancy rates in Bend since 2013.[13] [14]

Figure 7. Percentage and Number of Units by Occupancy, Bend, 1990, 2000, and 2013



Source: 1990 and 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

[13] Article in the Bend Bulletin; Survey of rental properties by the Central Oregon Rental Owners Association http://www.bendbulletin.com/business/3176538-151/apartment-complex-slated-for-bend

[14] The residential vacancy rate was not a subject questioned in the Remand. As a result, this analysis uses the vacancy rate from the 2008 HNA. The additional information presented in this section simply shows that assuming a 6% vacancy rate is reasonable, given changes in vacancy rate between 2008 and 2015.

Residential Development Densities

Table 4 shows allowed densities by zone in Bend by gross and net acres. OAR 660-024-0010(6) defines Net Buildable Acres as follows: "Net Buildable Acre" consists of 43,560 square feet of residentially designated buildable land after excluding future rights-of-way for streets and roads. A gross acre does not exclude land for future rights-of-way for streets and roads.

Table 4. Range of Allowed Densities, Dwelling Units per Acre, Bend

Density	Low Density Residential (RL)	Standard Density Residential (RS)	Medium Density Residential (RM)	High Density Residential (RH)
Dwelling Units per Gross Acres	1.1 - 2.2	2.0 - 7.3	7.3 - 21.7	21.7 - 43.0
Dwelling Units per Net Acres	1.4 - 2.8	2.5 - 9.1	9.1 - 23.9	23.9 - 47.3

Source: City of Bend
Note: The net densities shown in Table 4 are an approximation based on gross densities, accounting for land needed for rights of way. Bend's development code only regulates density based on gross densities.

Table 5 shows historical development trends in residential zones for three periods: (1) units built before 1998, (2) units built during the 1998-2008 period, and (3) all units in Bend by 2008. Table 5 shows that average net densities increased over time in most zones. Note that Bend adopted minimum densities for each zone for the first time in 2006.

- **Single-family detached densities.**
  - The overall density in the low-density RL zone remained around 2.1 units/net acre (the RL zone contains less than 10% of total housing units).
  - Density in the RS, RM, and RH zones increased from the pre-1998 period to 2008.
  - The majority of housing built in Bend was single-family detached, most of which was developed in the RS zone. Average net densities in the RS zone increased from 3.1 units/acre overall as of 1998 to 3.8 units/acre as of 2008.
  - The average density for single-family detached units increased by 24%, from 2.9 units/net acre as of 1998 to 3.6 units/net acre by 2008.
- **Single-family attached densities.**
  - Single-family attached units were relatively new to Bend's housing inventory, Only 48 units (less than 1% of total housing units) existed prior to 1998. During 1998-2008 they made up 9.5% (610) of total new housing units permitted. Most of those (71%) were built in the RS zone, with the rest built in the RM zone.
  - Table 5 shows that the average net density for single-family attached units built in the RS zone during 1998-2008 was 71% above the overall average for that type existing prior to 1998. Overall, the average density of single-family attached units in all zones increased from 7.8 units/net acre prior to 1998 to 9.4 units/net acre in 2008.

- The average density for single-family attached units across all zones was 21% higher for units built over the 1998-2008 period than for those existing in 1998.

- **Multi-family densities.**
  - The average net density for multi-family units in the RM zone held steady at 16.6 units/net acre from 1998 to 2008, and decreased slightly in the RH zone from 20.9 to 18.8 units/net acre.
  - At the same time, multi-family density in the RS zone (consisting primarily of duplex units) increased from 9.7 to 11.3 units per net acre during that period.[15]
  - The average density for multi-family attached units across all zones increased by 2% from 15.5 units/net acre before 1998 to 15.8 units/net acre as of 2008.

- **All housing types and zones.**
  - The average net density for development in the 1998 to 2008 period was 5.7 dwelling units per net acre.
  - The average density for the 1998-2008 period for all housing types in the RH zone is lower than the current allowed density in the RH zone, based on the minimum densities implemented in 2006.

Table 5. Historical Average Net Density by Zone, Dwelling Units per Net Acre, Bend

	RL			RS			RM			RH			All Res. Zones		
	Pre-1998	1998-2008	2008	Pre-1998	1998-2008	2008	Pre-1998	1998-2008	2008	Pre-1998	1998-2008	2008	Pre-1998	1998-2008	2008
Single-family detached	2.0	2.1	2.0	3.1	4.6	3.8	4.7	8.6	5.6	6.6	13.4	7.2	2.9	4.7	3.6
Single-family attached	-	-	-	5.1	8.7	8.4	21.5	12.5	13.1	-	-	-	7.8	9.5	9.4
Multi-family attached	8.8	-	8.8	9.7	14.2	11.3	16.6	16.1	16.6	20.9	17.1	18.8	15.5	16.0	15.8
Manufactured homes in parks	2.7	-	2.7	3.4	-	3.4	6.5	-	6.5	-	-	-	4.1	-	4.1
Manufactured homes on lots	2.9	3.1	2.9	3.2	6.6	3.6	5.8	7.0	6.2	-	-	-	3.1	5.1	3.4
Average Density – All Housing Types	2.1	2.1	2.1	3.2	4.9	3.9	8.5	13.4	9.9	14.4	16.9	15.5	3.7	5.7	4.4

Source: City of Bend memorandum: "Bend Buildable Lands Inventory – Sub-Issue 2.2" revised January 9, 2014

[15] This density of development for duplexes exceeds the maximum density of the RS Zone.

Summary of Key Findings about Historical Residential Development in Bend

The majority of housing in Bend is single-family detached housing.

- The mix of housing stock in Bend was relatively consistent over the past two decades, with about 70% of Bend's housing stock in single-family detached housing in 1990 and in 2013.

Building activity has varied substantially over the 1999 to 2013 period.

- Bend permitted an average of about 1,200 units per year between 1999 and 2014, the majority of which were single-family detached units.
- Building permit activity peaked in 2005 with 2,600 units permitted. In 2009 to 2011, fewer than 300 units were permitted per year. The number of units permitted exceeded 900 in 2013, showing that development activity in Bend is returning to historical levels.
- More than three-quarters of units permitted between 1999 and 2013 were single-family detached units.
- Permits issued for multi-family housing averaged about 225 units per year, peaking in number in 2003. Between 2009 and 2012, very few multi-family units were permitted. Between 2010 and 2012, the only multi-family attached units permitted in Bend were duplexes.

Bend's housing tenure remained stable between 1990 and 2013.

- About 55% of dwellings were owner-occupied in 1990 and 2013.
- Nearly all owner-occupied units were single-family detached housing, with a small number of owner-occupied single-family attached and multi-family units.
- Renter-occupied units were generally divided among single-family detached and multi-family, with single-family attached units accounting for about 7% of renter-occupied units.

Housing density generally increased for housing built between 1998 and 2008, compared to housing built before 1998.

- Single-family detached densities in the RS, RM, and RH zones increased, with densities in the RL remaining flat.
- Multi-family densities increased in the RS zone and decreased slightly in the RM and RH zones.

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CHAPTER 3. HOUSING NEEDS ANALYSIS

Step 1 – Project the number of new housing units needed in the next 20 years

The first step in the HNA process is to forecast the number of housing units that will be needed to house the projected population growth over the planning period. In 2008, the City developed and relied on a 2028 population forecast for Bend of 115,063, reflecting an increase in population of 38,512 people between 2008 and 2028.[16] The January 2010 DLCD Director's Report and Order on the UGB Expansion concluded that the forecast complied with applicable law.[17] The 2028 population forecast for Bend was prepared using the 2004 Coordinated Population Forecast for Bend as a base. The Coordinated Population Forecast for Bend is 109,389 people by 2025.[18] Staff extended the forecast out another three (3) years to 2028 using the same growth rate used to forecast population beyond 2025 in the Housing Needs Analysis.[19]

The City relied on this 2028 population forecast to develop a housing unit forecast for Bend from 2008 to 2028.

The forecast of housing units is based on data from the 2000 Census results for Bend.[20] The steps in the forecast are:[21]

- Determine the amount of new population growth by subtracting Bend's population in 2008 (76,551 people) from the 2028 population forecast (115,063 people). The result shows that Bend's population will grow by 38,512 between 2008 and 2028.
- Remove population in group quarters (2.3% or 886 people) to determine the amount of new population in households (37,626 people) over 2008 and 2028.
- Identify the number of new occupied housing units by dividing the population by average household size (2.4 persons per household), which results in growth of 15,678 new households and new occupied housing units in Bend between 2008 and 2028.
- Account for vacant units, with a vacancy rate of 6.4%, which results in 1,003 more housing units, the vacancy rate in Bend in 2000 (Figure 7).

The DLCD Director also concluded that the housing unit forecast of 16,681 new units between 2008 and 2028 complied with the applicable law in his January 2010 Report and Order.[22] Table 6 presents the 2008 to 2028 housing unit forecast for the City of Bend.

[16] See September 2, 2011 memorandum to the Remand Task Force, presented at the RTF's September 8, 2011 meeting.

[17] See page 25 of 156, January 8, 2010 Director's Report and Order

[18] See Exhibit L-2, Deschutes County Coordinated Population Forecast 2000-2025 (2004) to 45-Day notice

[19] See Exhibit L-3, City of Bend Housing Needs Analysis (2005) to 45-day notice, pages 7-8.

[20] See the 2000 Demographic profile for Bend at: http://censtats.census.gov/data/OR/1604105800.pdf.

[21] These steps are consistent with the Residential Land Needs 2005-2030 Memorandum (April 25, 2007); Table 3, Page 5.

Table 6. Housing Unit Forecast, 2008 to 2028

Variable	Housing Need 2008-2028
Population forecast for 2028	115,063
(-) Less Population on 7/1/08	76,551
(=) New population 2008 to 2028	38,512
(-) Less population in group quarters (2.3%)	886
(=) New population in households	37,626
(/) Divided by household size (2.4)	
(=) Equals new occupied housing units	15,678
(+) Plus vacancy factor (6.4%)	1,003
= New housing units 2008 to 2028	**16,681**

Between 2009 and the end of July 2014, Bend issued building permits for 2,912 new dwelling units, shown in Table 3. As a result, **the number of additional units that Bend will need to accommodate over the 2014-2028 period is 13,769 units.**

Summary of Key Findings about Needed Housing Units

Step 1 of the housing needs analysis shows that:

- Bend is projected to grow by 16,681 dwelling units over the 2008 to 2028 period.
- Bend issued building permits for 2,912 units between 2009 and July 2014.
- Bend will need to accommodate an additional 13,769 units over the 2014 to 2028 period.

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Step 2 – Identify relevant national, state, and local demographic and economic trends and factors that may affect the 20-year projection of structure type mix

ORS 197.296(5) requires communities to examine demographic and economic trends that will inform the city's analysis of what types of housing will be needed in the future. This section presents an examination of relevant national, state, and local demographic and economic trends and factors that may affect the 20-year projection of the types and mix of housing.[23] The analysis of trends focuses on the period following the acknowledgement of the 1998 City of Bend Comprehensive Plan to 2013. For many variables, this analysis will include data from 1998 or 1999 to 2013; for others, two periods will be presented to look at trends. These periods will include 1990 to 2000, between the two Censuses, and from 2000 to 2013. For 2013, the City is relying on data collected about the State of Oregon and Bend from the American Community Survey.[24] In addition, this analysis incorporates previous work from the 2005 Housing Needs Analysis and the 2007 Residential Land Need Analysis.[25] Most of this data and background was shared with the Residential technical advisory committee (TAC) during their August 5, 2014 meeting.[26]

National Housing Market Trends

This section briefly summarizes national housing trends and builds on previous work by ECONorthwest, Urban Land Institute (ULI) reports, and conclusions from *The State of the Nation's Housing, 2014* report from the Joint Center for Housing Studies of Harvard University. The Harvard report summarizes the national housing outlook as follows:

> "With promising increases in home construction, sales, and prices, the housing market gained steam in early 2013. But when interest rates notched up at mid-year, momentum slowed. This moderation is likely to persist until job growth manages to lift household incomes. Even amid a broader recovery, though, many hard-hit communities still struggle and millions of households continue to pay excessive shares of income for housing."

Several challenges to a strong domestic housing market remain. Demand for housing is closely tied to jobs and incomes, which are taking longer to recover than in previous cycles. While trending downward, the number of underwater homeowners, delinquent loans, and vacancies remains high. *The State of the Nation's Housing* report projects that it will take several years for market conditions to return to normal and, until then, the housing recovery will likely unfold at a moderate pace.

[23] See September 2, 2011 memorandum to the UGB Remand Task Force, presented at their September 8, 2011 meeting.

[24] For more information about the American Community Survey (ACS), See http://www.census.gov/acs/www/. The ACS data can be accessed from the Census Bureau's American Factfinder website at http://factfinder.census.gov/home/saff/main.html?_lang=en.

[25] See 2005 Housing Needs Analysis at Rec p 2046 and 2007 Residential Land Need Analysis at Rec. P. 2114,

[26] See meeting packet for Residential TAC meeting #1 - http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=17619.

National housing market trends include: [27]

- **Post-recession recovery slows down**. Despite strong growth in the housing market in 2012 and the first half of 2013, by the first quarter of 2014, housing starts and existing home sales were both down by 3% from the same time a year before, while existing home sales were down 7% from the year before. Increases in mortgage interest rates and meager job growth contributed to the stall in the housing market.
- **Continued declines in homeownership**. After 13 successive years of increases, the national homeownership rate declined each year from 2005 to 2013, and is currently at about 65%. The Urban Land Institute projects that homeownership will continue to decline to somewhere in the low 60% range.
- **Housing affordability**. In 2012, more than one-third of American households spent more than 30% of income on housing. Low-income households face an especially dire hurdle to afford housing. Among those earning less than $15,000, more than 80% paid over 30% of their income and almost 70% of households paid more than half of their income. For households earning $15,000 to $29,000, more than 60% were cost burdened, with about 30% paying more than half of their income on housing.
- **Changes in housing characteristics**. National trends show that the size of single-family and multi-family units, and the number of household amenities (e.g., fireplace or two or more bathrooms) has increased since the early 1990s. Between 1990 and 2013 the median size of new single-family dwellings increased 25% nationally from 1,905 square feet to 2,384 square feet and 18% in the western region from 1,985 square feet to 2,359 square feet. Moreover, the percentage of units smaller than 1,400 square feet nationally decreased from 15% in 1999 to 8% in 2013. The percentage of units greater than 3,000 square feet increased from 17% in 1999 to 29% of new one-family homes completed in 2013. In addition to larger homes, a move towards smaller lot sizes is seen nationally. Between 2009 and 2013, the percentage of lots less than 7,000 square feet increased from 26% of lots to 30% of lots. Similarly, in the western region, the share of lots less than 7,000 square feet increased from 43% to 48% of lots.
- **Long-term growth and housing demand**. The Joint Center for Housing Studies forecasts that demand for new homes could total as many as 13.2 million units nationally between 2015 and 2025. Much of the demand will come from Baby Boomers, Millennials,[28] and immigrants.
- **Changes in housing preference**. Housing preference will be affected by changes in demographics, most notably the aging of the Baby Boomers, housing demand from the Millennials, and growth of foreign-born immigrants. Baby Boomers' housing choices will affect housing preference and homeownership, with some boomers likely to stay in their

[27] These trends are based on information from: (1) The Joint Center for Housing Studies of Harvard University's publication "The State of the Nation's Housing 2013," (2) Urban Land Institute, "2011 Emerging Trends in Real Estate," and (3) the U.S. Census.

[28] Millennials are, broadly speaking, the children of Baby Boomers, born from the early 1980's through the early 2000's.

home as long as they are able and some preferring other housing products, such as multi-family housing or age-restricted housing developments.

In the near-term, Millennials and new immigrants may increase demand for rental units. The long-term housing preference of Millennials and new immigrants is uncertain. They may have different housing preferences as a result of the current housing market turmoil and may prefer smaller, owner-occupied units or rental units. On the other hand, their housing preferences may be similar to the Baby Boomers, with a preference for larger units with more amenities. Recent surveys about housing preference suggest that Millennials want affordable single-family homes in areas that offer transportation alternatives to cars, such as suburbs or small cities with walkable neighborhoods.[29]

State Economic Trends and Cycles

Oregon's *2011-2015 Consolidated Plan* includes a detailed housing needs analysis as well as strategies for addressing housing needs statewide.[30] The plan concludes that, "Oregon's changing population demographics are having a significant impact on its housing market." It identified the following population and demographic trends that influence housing need statewide.

- Oregon's households have higher rates of cost burden, with increases due to higher unemployment and lower wages, when compared to the nation.
- Oregon's foreclosure rates have been at a historical high since 2005, compared with the previous two decades.
- Oregon, like other states, is continuing to loose federal housing subsidies, with losses of about 8% of federally subsidized Section 8 housing units.
- Oregon's communities are losing manufactured housing parks over time, with a 25% decrease in the number of manufactured home parks between 2003 and 2010.
- Oregon's population is increasingly older, more diverse, and, has less affluent households.[31]

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[29] The American Planning Association, "Investing in Place; Two generations' view on the future of communities." 2014. "Survey Says: Home Trends and Buyer Preferences," National Association of Home Builders International Builders Show, accessed January, 2015, http://www.buildersshow.com/Search/isesProgram.aspx?id=17889&fromGSA=1. "Access to Public Transportation a Top Criterion for Millennials When Deciding Where to Live, New Survey Shows," Transportation for America, accessed January 2015, http://t4america.org/wp-content/uploads/2014/04/Press-Release_Millennials-Survey-Results-FINAL-with-embargo.pdf.

[30] http://www.ohcs.oregon.gov/OHCS/HRS_Consolidated_Plan_5yearplan.shtml

[31] State of Oregon *Consolidated Plan 2011 to 2015*. http://www.oregon.gov/ohcs/hd/hrs/consplan/2011_2015_consolidated_plan.pdf

Step 3 – Describe the demographic characteristics of the population, and, if possible, household trends that relate to demand for different types of housing[32]

Regional and local demographic trends largely follow the statewide trends and provide additional insight into how demographic trends might affect housing in Bend. National and state demographic trends that might affect the key assumptions used in the baseline analysis of housing need are: (1) the aging population, (2) changes in household size and composition, and (3) increases in diversity. This section describes how those trends are playing out at the local level. Most of this data and background was shared with the Residential technical advisory committee (TAC) during their August 5, 2014 meeting[33].

Demographic and socioeconomic factors affecting housing choice

In the context of housing markets, past and current housing conditions demonstrate *the intersection of the forces of housing supply and demand at a price of housing.* Housing demand is derived from the characteristics of households that create or are correlated with *preferences* for different types of housing, and *the ability to pay* (the ability to exercise those preferences in a housing market by purchasing or renting housing; in other words, income or wealth).

One way to forecast housing demand is with detailed analysis of demographic and socioeconomic variables. If one could measure housing demand for each household, one might find that every household has a unique set of preferences for housing. But no city-wide housing analysis can expect to build from the preferences of individual households.[34] Most housing market analyses that get to this level of detail describe *categories* of households on the assumption that households in each category will share characteristics that will make their preferences similar.

The main demographic and socioeconomic variables that may affect housing choice include: age of householder, household composition (e.g., married couple with children or single-person household), size of household, ethnicity, race, household income, or accumulated wealth (e.g., real estate or stocks). The literature about housing markets identify the following household characteristics as those most strongly correlated with housing choice: age of the householder, size of the household, and income:[35]

- **Age of householder** is the age of the person identified (in the Census) as the head of household. Households make different housing choices at different stages of life. For example, a person may choose to live in an apartment when they are just out of high

[32] The Residential TAC reviewed the information in this section during the August 5, 2014 meeting.

[33] See meeting packet for Residential TAC meeting #1 - http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=17619.

[34] Not only could one not measure the preferences of all existing households (now and in the future); one could not know what specific households would be migrating to the region.

[35] The research in this section is based on numerous articles and sources of information about housing. The memorandum "Demographic Characteristics and Trends that will Affect Housing Demand in Bend for the 2008-2028 period" to the Residential Lands Technical Advisory Committee (July 23, 2014) presents an analysis of our research of the academic literature about the relationship between demographics and housing demand.

school or college but if they have children, they may choose to live in a single-family detached house.

- **Size of household** is the number of people living in the household. Household size is related to household composition, which describes the age and relationships of people living within the household. Younger and older people are more likely to live in single-person households and people in their middle years are more likely to live in multiple person households (often with children).
- **Income** is the income from all people in the household who have income. Income is probably the most important determinant of housing choice. Income is strongly related to the type of housing a household chooses (e.g., single-family detached, duplex, or a building with more than five units) and to household tenure (e.g., rent or own). A review of census data that analyzes housing types by income in most cities will show that as income increases, households are more likely to choose single-family detached housing types. Consistent with the relationship between income and housing type, higher income households are also more likely to own than rent.

Growing Population

Bend has a rapidly growing population. Population growth figures for Oregon, Deschutes County, and Bend, between 1990 and 2013, are shown in Figure 8.

Deschutes County's 2013 population was an estimated 162,525.

- Between 2000 and 2013, the county's population grew by 53%, or 61,475. Of this growth, net migration accounted for 53,163 in population growth, or 87% of the population growth between 2000 and 2013. In comparison, net migration accounted for 60% of Oregon's growth over the 13-year period.
- Natural increase accounted for 13% of the county's population growth between 2000 and 2013.
- Deschutes County's estimated population growth of 61,475 represents 12% of the state's population growth between 2000 and 2013.

Bend's population has grown significantly since 1990.

- Between 1990 and 2000, Bend's population grew from 20,469 to 52,029, an increase of 31,560 people. About 17,060 of this growth was the result of annexations to the city between 1990 and 1998. Actual population growth accounted for an increase of 14,500 people, representing a 71% increase over the city's 1990 population.
- The city's population grew by 26,251 over between 2000 and 2013. This growth occurred during a period where the City did not annex new housing with population. This new growth in population occurred through natural increase and positive net migration.
- Bend's population grew at an average annual rate of 6.3% over the 1990 to 2013 period, compared to the state average of 1.5%. Bend's average annual growth rate between 2000 and 2013 was 3.5% per year, compared to 1.1% statewide. This growth includes annexations that occurred over the 1990 to 1999 period.

Figure 8. Population Growth, Oregon, Deschutes County, Bend, 1990 through 2013

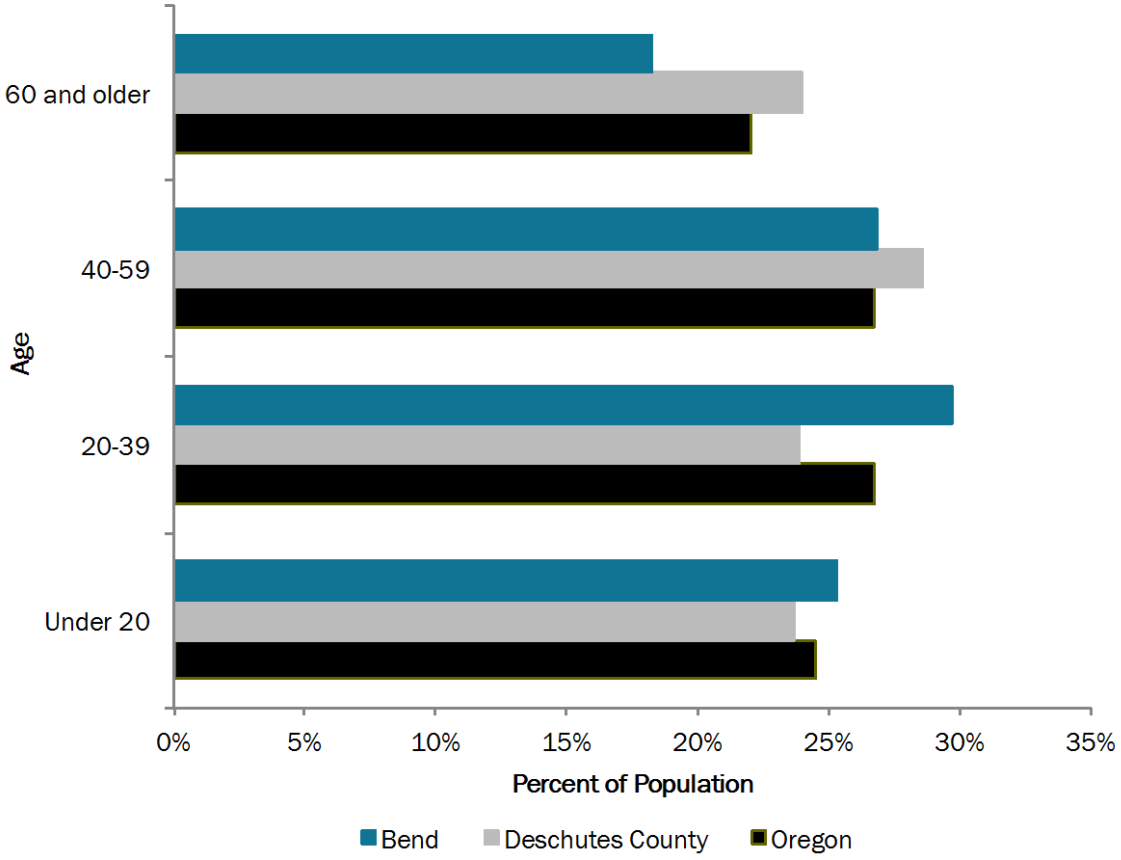
				1990 - 2013 Change		
	1990	2000	2013	Change	% Change	Average Annual Growth Rate
Oregon	2,842,321	3,421,399	3,919,020	1,076,699	38%	1.5%
Deschutes County	74,958	115,367	162,525	87,567	117%	3.6%
Bend	20,469	52,029	78,280	57,811	282%	6.3%

Source: Population Research Center, Portland State University

Aging Population

In 2013, the median age in Bend was 36.6, compared to the median of 42.3 in Deschutes County and 39.1 across the State. Figure 9 shows that Bend had a larger share of population between age 20 and 39 than either the county or state averages.

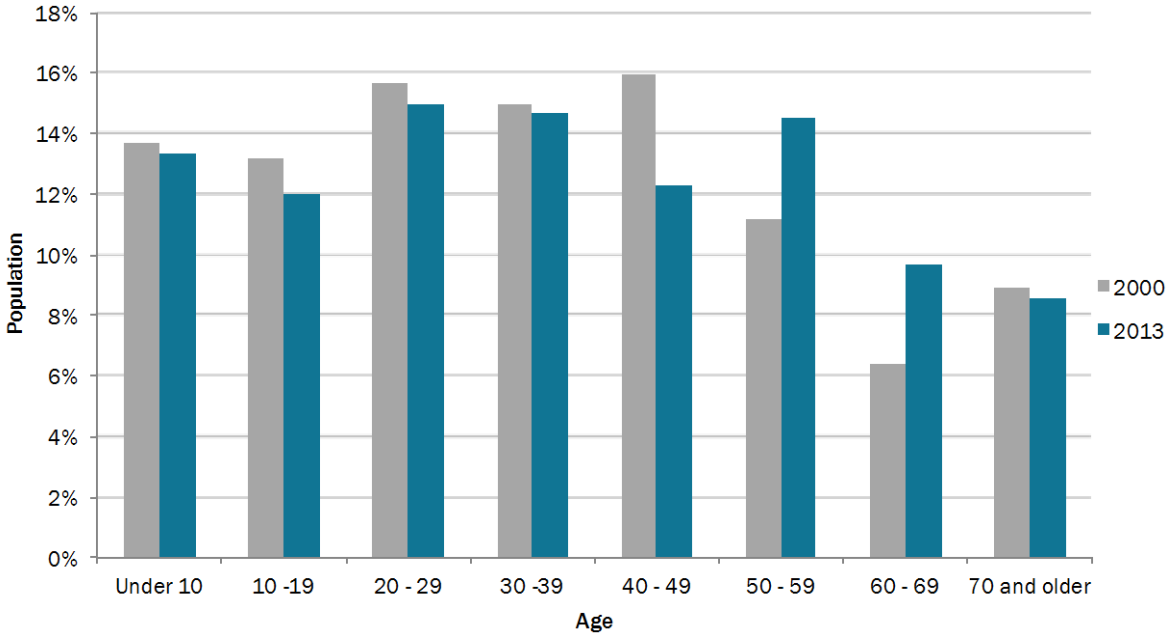
Figure 9. Population by Age, Bend, Deschutes County, and Oregon, 2013



Source: 2013 American Community Survey 1-Year Estimates

Figure 10 shows the age change in Bend's population between 2000 and 2013. While all age groups grew over the 13-year period, people between the ages of 50 and 59 years added the largest number of people, followed by people aged 60 to 69 years. Together, people aged 50 to 69 accounted for growth of more than 10,000 people or one-third of Bend's growth. People 20 to 39 years old accounted for growth of about 8,000 people over the 13-year period.

Figure 10. Age of Population, Bend, 2000 and 2013



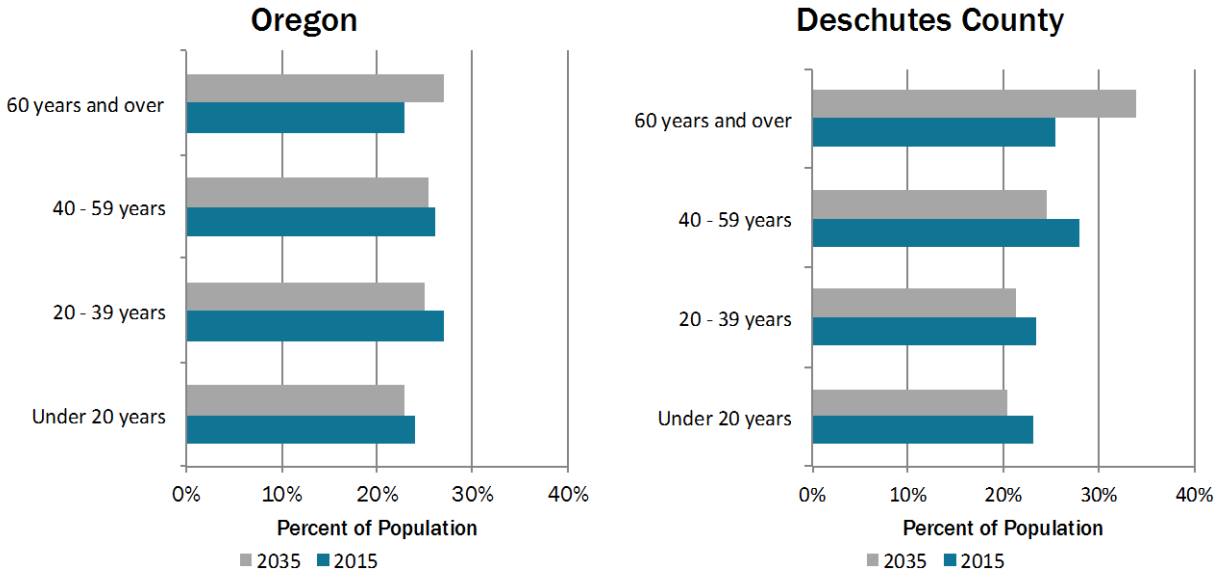
Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Figure 11 shows a comparison of the current and 2035 projected population for Oregon and Deschutes County by age.[36]

- The entire population of Deschutes County is projected to increase by 37%, compared to a total population increase of 25% across the state.
- Oregon and Deschutes County are projected to see an increase in the share of the population over 60 years of age. 56% of the population growth in Deschutes County through 2035 is projected to come from this age group.
- The Deschutes County population between 20 and 59 years of age are projected to increase by roughly 15%, at a slower rate than across the state.
- While the age distribution of Bend's population is different from the County average (Figure 9), Bend accounts for nearly half of Deschutes County's population. The growth in people over 60 years old in Deschutes County (Figure 11) will be reflected in growth in the percentage of population over 60 years old in Bend.

[36] See the Long-Term County Forecast "2013 Release" through the OEA website: http://www.oregon.gov/DAS/OEA/Pages/demographic.aspx

Figure 11. Forecast of Population by Age, Oregon and Deschutes County, 2015 and 2035

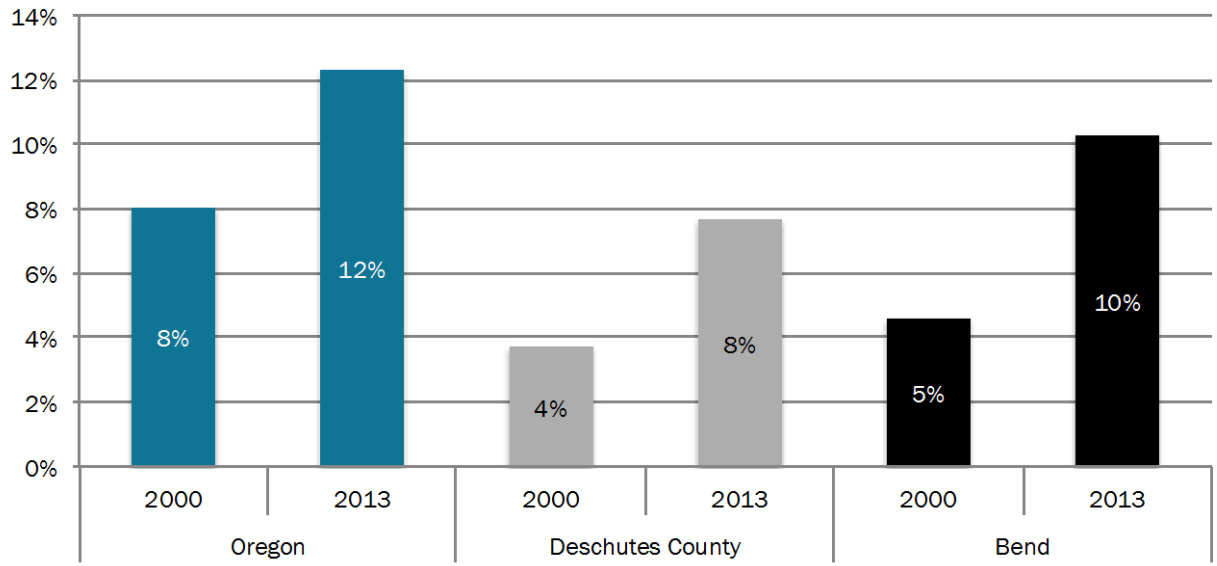


Source: Oregon Office of Economic Analysis.
See the Long-Term County Forecast "2013 Release" through the OEA website:
http://www.oregon.gov/DAS/OEA/Pages/demographic.aspx

Increased ethnic diversity

Figure 12 shows the percentage of the total population that is of Hispanic or Latino origin for Oregon, Deschutes County, and Bend, in 2000 and 2013. Between 2000 and 2013, Hispanic or Latino population increased from 5% of the population to 10% of the population, adding nearly 6,000 additional Hispanic or Latino residents. Bend has a greater percentage of Hispanic or Latino population than the county average, but a smaller percentage than the state average.

Figure 12. Hispanic or Latino Population by Percentage, Oregon, Deschutes County, Bend, in 2000 and 2013



Source: U.S. Census 2000 SF1, American Community Survey 2013 1-year Estimates

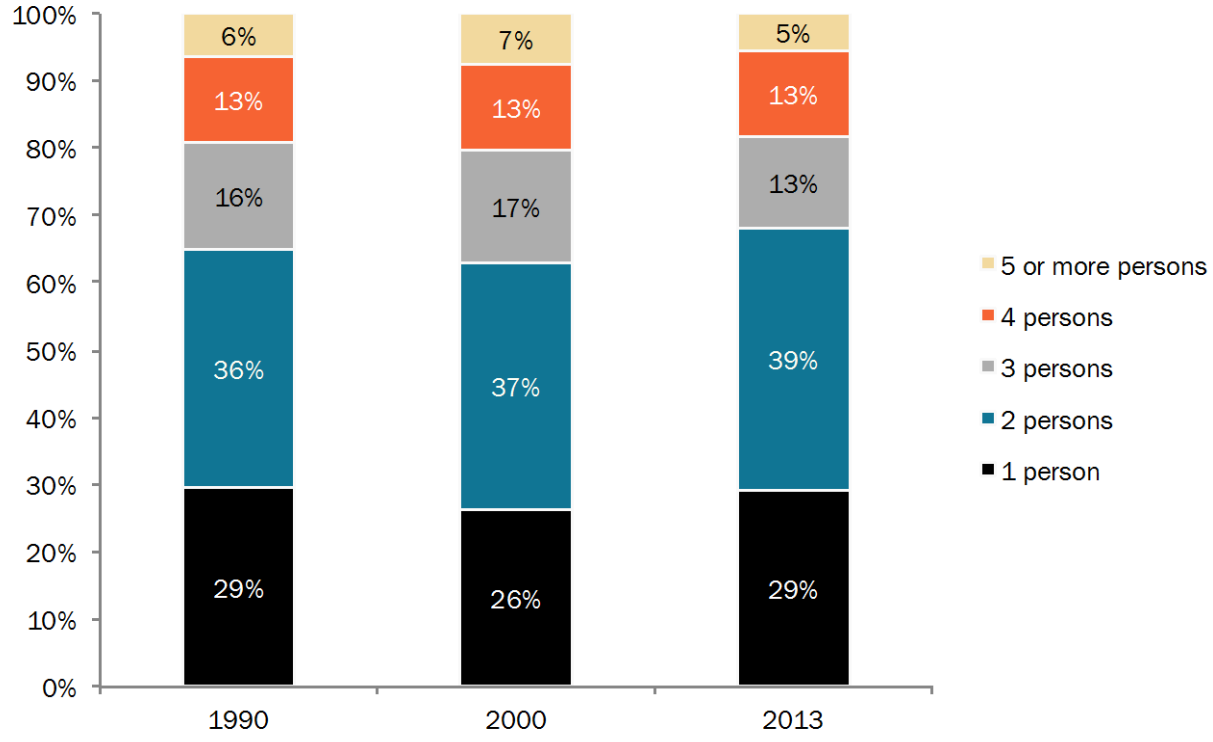
Household Size and Composition

This section of the report considers household types (family or nonfamily) by size and how this information relates to household-level decisions to purchase or rent housing.

Household Size

Figure 13 shows change in household size in Bend between 1990, 2000, and 2013. The percentage of one-person households held stable at about 29% of households. The percent of two-person household increased from 36% to 39%. The percentage of households with three or more persons decreased slightly between 1990 and 2013. The trend towards an increase in single-person households between 2000 and 2013 is consistent with national and statewide trends.

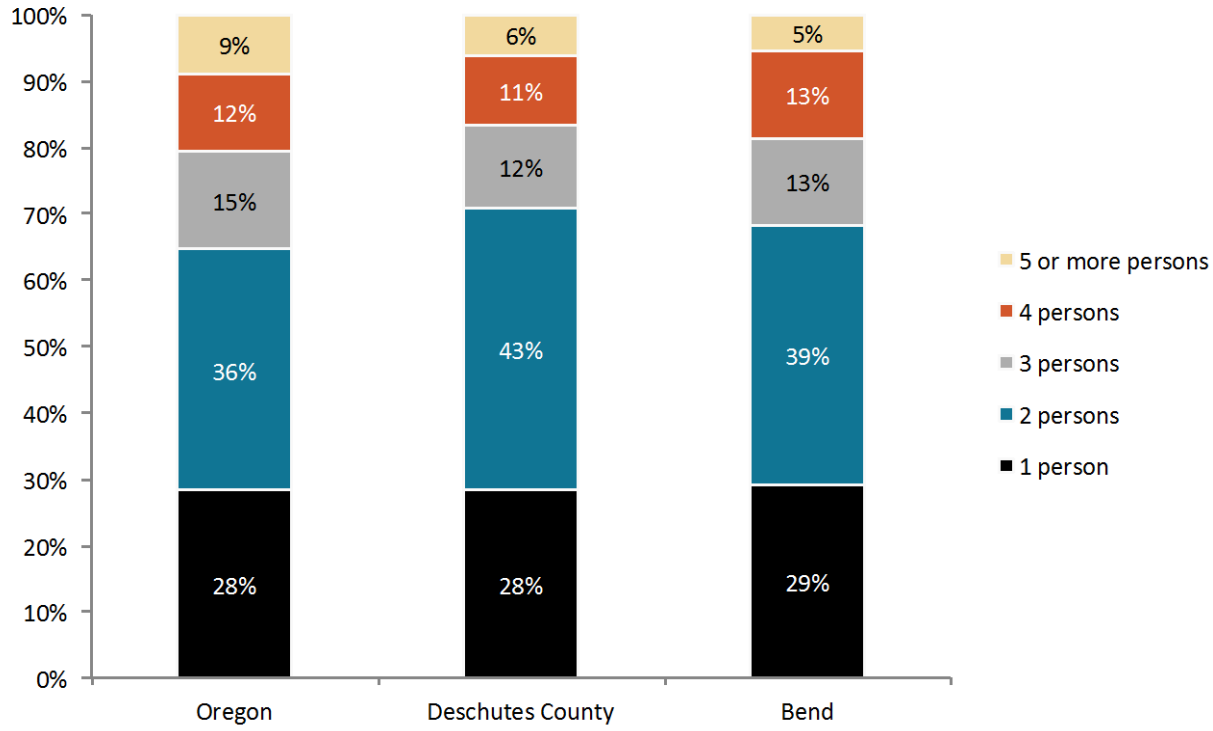
Figure 13. Households by Household Size, Bend, 1990, 2000, and 2013



Source: 1990 and 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Figure 14 compares household size in Bend with the state and county averages. Bend has a slightly larger share of single-person and two person households than the state average. Bend has a smaller percentage of households with four or more people than the state average. Over the next 20 years, households with one or two persons per household are expected to represent the largest category of households by size.

Figure 14. Households by Household Size, Oregon, Deschutes County, Bend, 2013

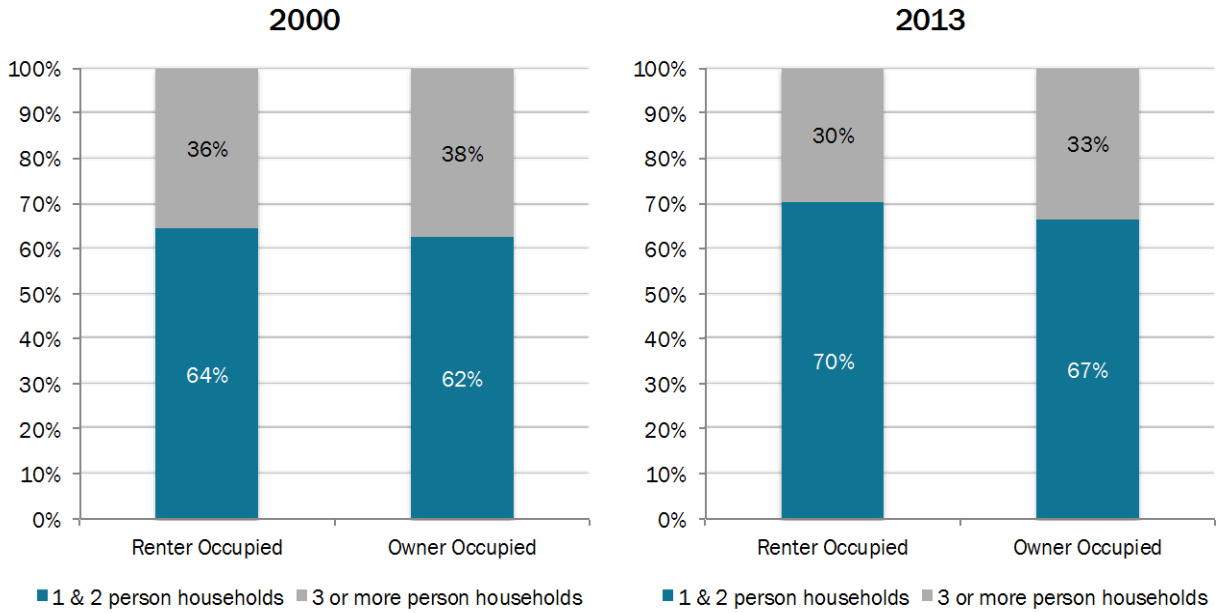


Source: 2013 American Community Survey 1-Year Estimates

Figure 15 shows Bend households by size, and the proportions that were owner-occupied and renter-occupied in 2000 and 2013.

- The share of households with one or two persons increased between 2000 and 2013 for both owner occupied and renter occupied households.
- Between 2000 and 2013, 1-person households saw the most growth (43%) among owner occupied households and 2-person and 4-person households saw the most growth (105% and 92%, respectively) among renter occupied households.

Figure 15. Mix of Households by Tenure and Household Size, Bend, 2000 and 2013



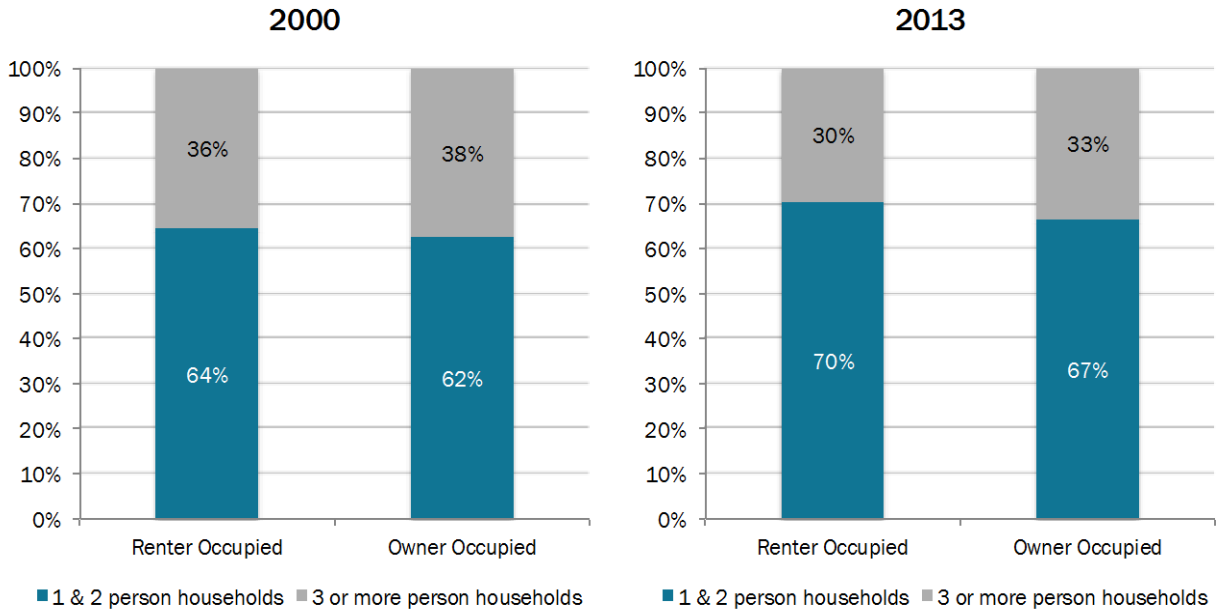
Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Household Composition

Figure 16 shows household composition in Oregon, Deschutes County, and Bend in 2013.

- A larger share of Bend's housing composition is family households with children (30%) compared to that of Deschutes County (24%) and Oregon (27%).
- Bend also has a larger share of non-family households (e.g., unrelated people living in the same house) than compared to the county and state.

Figure 16. Household Composition of Oregon, Deschutes County, and Bend, 2013

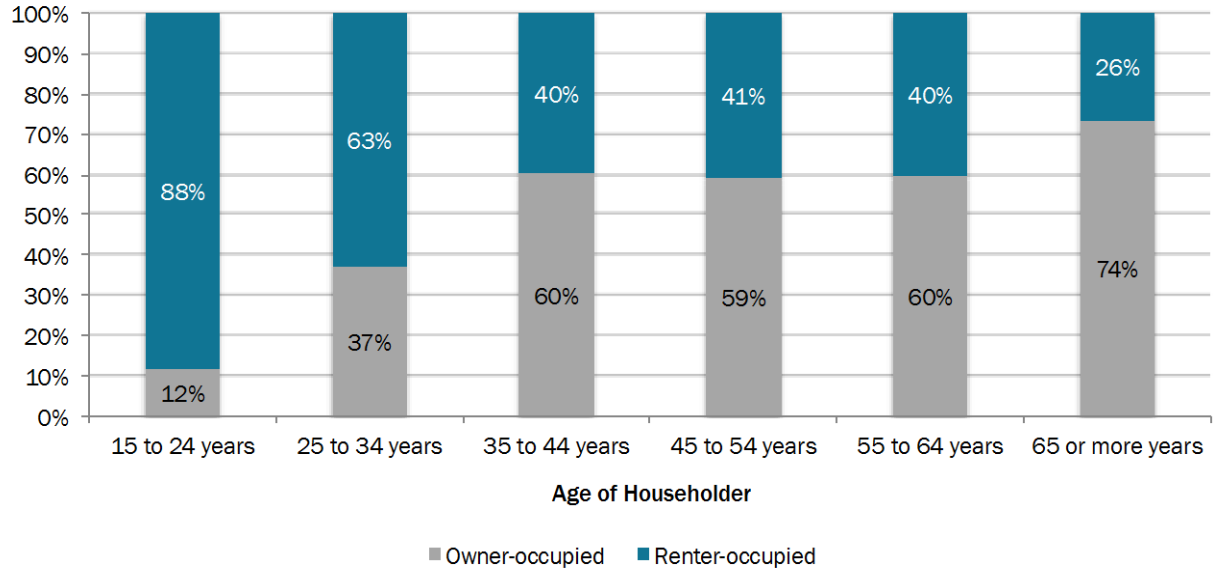


Source: American Community Survey 2013 1-year Estimates

Householder Age

Figure 17 shows the distribution of owner-occupied and renter-occupied housing by age groups in Bend in 2013. The majority of householders younger than 35 years old were renters. Homeownership increased with age. Two-thirds of householders aged 45 to 54 were homeowners. Homeownership rates typically remain stable until age 65 or older, when they begin to decline; however, in Bend, households 55 to 64 years had lower homeownership rates than people 65 years or older.

Figure 17. Households by Age of Householder and Tenure, Bend, 2011-2013



Source: 2013 American Community Survey 3-Year Estimates

Figure 18 shows that the percentage of single-person households increases with age. For householders under age 64, 25% or fewer households are single person households. By age 65, 53% of households are single-person households.

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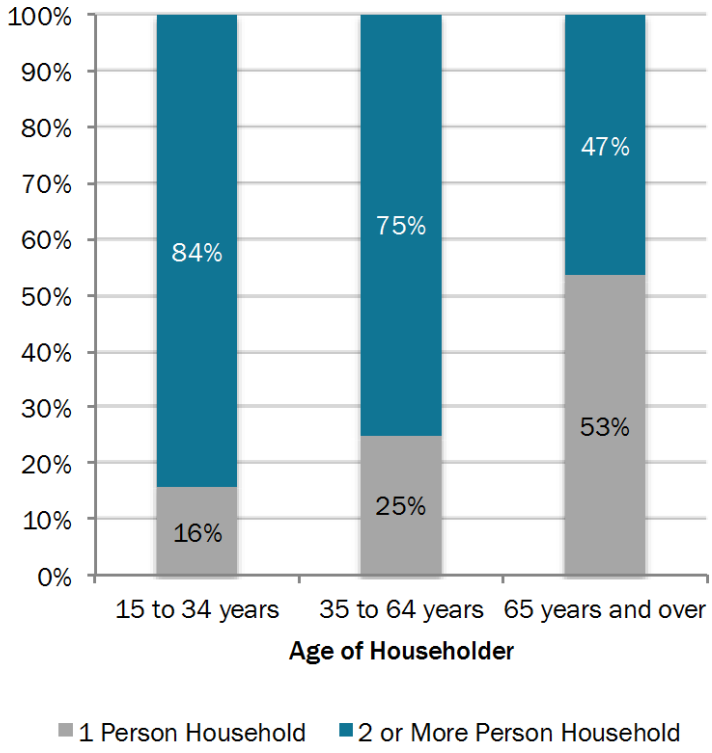
Figure 18. Households by Age of Householder and Household Size, Bend, 2013



Source: 2013 American Community Survey 1-Year Estimates

Summary of demographic and socioeconomic factors effect on housing choice in Bend

The prior sections described key demographic and socioeconomic factors that affect housing choice in Bend based on historical data.

Over the next decades, the national demographic trends that will affect housing demand across the U.S., as well as Oregon and Bend are:

- **Aging of the baby boomers.** By 2030, the youngest baby boomers will be over 65 years old. By 2030, people 65 years and older are projected to account for about 20% of the U.S. population, up from about 12% of the population in 2000.
- **Growth in Millennials.** Millennials are a large group of people (i.e., Echo Boomers or Generation Y) born from the early 1980's to early 2000's, with the largest concentration born between 1982 and 1995. By 2030, Millennials will all be older than 35 years old, with the oldest Millennials over 50 years old. The Millennials will form households and enter their prime earnings years during the 20-year planning period.
- **Growth of Hispanic and Latino population.** One of the fastest growing groups in the U.S. will be the Hispanic and Latino population. By 2030, Hispanic and Latino population is projected to account for about 20% of the U.S. population, an increase from about 13% of the U.S. population in 2000. Growth in the Hispanic population will be the result of natural increase (more births than deaths) and immigration from other countries.

Table 7 through Table 9 describe the changes in these demographic and socioeconomic trends and their potential effect on housing choice in Bend over the next 20 years. These tables discuss the characteristics of the householder, which is the person identified (by the household) as the head of household on the Census. The tables combine past trends (documented in the prior sections) with future demographic projections and information about housing preferences for these key demographic groups. Appendix A provides the background research that forms the basis for the conclusions in these tables.[37]

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[37] The data presented in Tables 7 through 9 were reviewed with the Residential TAC during their August 5, 2014 meeting. Some of the data has been updated since this meeting.

Table 7. Baby boomers (Age in 2014: 48 to 67 years old; Age in 2028: 62 to 81 years old)

Demographic trends		Baby boomers are the fastest growing segment of Deschutes County's population. • People over 65 years are forecast to grow from 15% of Deschutes County's population in 2010 to 27% in 2035.[38] • Growth in people over 65 years old in Deschutes County will result in growth of more than 37,000 people in this age group in Deschutes County or 24% of population growth over the 2010 to 2035 period.[39] Bend's population accounts for about half of the population in Deschutes County. As population over 65 grows in the County over time, this age group will grow in Bend as well.
Effect of trends on household choice	**Age of household head**	Bend's older householders are more likely to own their home. • Homeownership peaks for householders 65 years and older. Nearly 75% of householders 65 years and older in Bend are homeowners. National studies about the housing preferences of older residents show that the majority express an interest in remaining in their home or in their community as long as possible, a trend that increases with age.[40] • Between about 65% and 80% of people over 65 would like to stay in their homes as long as possible.[41] • The Baby Boomers who want to move generally want to live in a typical community setting, with a mixture of people of different ages, and in a setting where recreational amenities are available.[42] • Of people over 65 who expect to move in the next five years, a smaller proportion of these households expect to live in a single-family home and to be homeowners, compared with households of all ages who expect to move in the next 5 years.[43] • Seniors who moved recently were much more likely to have moved into a smaller home, compared to households of all ages who moved recently.[44]
	Household size and composition	Household size decreases with age after age 65 in Bend. • More than 54% of households 65 years and older were single-person households in Bend. • Growth in households 65 years and older will result in growth in single-person households.
	Household income	Bend's household income peaks around age 45. • Household income decreases after age 65. About 65% of Bend's households over 65 had income of less than $50,000, compared with 49% of households 45 to 64.

[38] Oregon Office of Economic Analysis, *Forecasts of Oregon's County Populations by Age and Sex, 2010 – 2050*, [Excel Workbook] (March 2013).

[39] Ibid.

[40] Ada-Helen Bayer, Ph.D. and Leon Harper, Fixing to Stay: A National Survey of Housing and Home Modification Issues (Washington, D.C.: AARP, 2000).
William H. Frey, Mapping the Growth of Older America: Seniors and Boomers in the Early 21st Century, (Conducted for the Metropolitan Policy Program at the Brookings Institution, May 2007).
Teresa A. Keenan, Home and Community Preferences of the 45+ Population, (Conducted for AARP, November 2010).

[41] Ada-Helen Bayer, Ph.D. and Leon Harper, *Fixing to Stay: A National Survey of Housing and Home Modification Issues* (Washington, D.C.: AARP, 2000).
Andrew Kochera, Audrey Straight, and Thomas Guterbock, *Beyond 50: A Report to the Nation on Livable Communities: Creating Environments for Successful Aging*, (Washington, D.C.: AARP, 2005).
Stephen Engblom, Greg Ault, and Lisa Fisher, *Boomer Residential Preferences*, (Conducted for the Urban Land Institution, Multi-family Trends, May/June 2007).
Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).

[42] Stephen Engblom, Greg Ault, and Lisa Fisher, *Boomer Residential Preferences*, (Conducted for the Urban Land Institution, Multi-family Trends, May/June 2007).

[43] Teresa A. Keenan, *Home and Community Preferences of the 45+ Population*, (Conducted for AARP, November 2010).

[44] Ibid.

		• Households with householders over 65 years have a lower than average household income, at about 70% of Bend's median household income, compared with ages 45 to 64 years with 107% of Bend's median household income.
		• Lower income does not necessarily result in greater problems with housing affordability or lower homeownership rates for people over 65 years because:
		  • Some householders over 65 have paid off their mortgage. For households who have paid off their mortgage, lower income does not necessarily result in lower disposable income or affect their ability to continue to own their home.
		  • Older households may have more accumulated wealth, which could include assets like the value of their house or investments.

	Potential effect on housing demand	The major impact of the aging of the baby boomers on demand for new housing will be through demand for housing types specific to seniors, such as assisted living facilities. Baby boomers will make a range of housing choices in Bend: • Many will choose to remain in their houses as long as they are able. • Those that do move are more likely to move into smaller homes, attached homes, or apartments and are more likely to rent than other households headed by other generations. • Some may downsize to smaller single-family homes (detached and attached) or multi-family units. These will be a mixture of owner and renter units. Nationally, of the 20% Baby Boomers that expect to move, 11% plan to move to an apartment, 16% to attached housing, 65% to single family housing, and 6% to a mobile home.[45] • Baby Boomers who move are likely to choose housing in areas with nearby shopping and other services, such as neighborhoods with integrated services or in downtown Bend. • As their health fails, some will choose to move to group housing, such as assisted living facilities or nursing homes.

[45] Ibid.

Table 8. Millennials (Age in 2014: 17 to 30 years old; Age in 2028: 31 to 44 years old)

Demographic trends		Millennials are one of the fastest growing segments of Deschutes County's population • By 2035, the State projects that there will be nearly 67,000 people 25 to 49 years in Deschutes County, up from more than 52,000 people in 2010.[46] • There will be an increase of about 14,000 people between the ages of 25 to 49 years. This group will account for 20% of total population growth over the 2010 to 2035 period.[47] Bend's population accounts for about half of the population in Deschutes County. As Millennials grow in the County, this age group will grow in Bend as well.
Effect of trends on household choice	**Age of household head**	Housing preferences shift for householders as they get older. • Under 25 years old: 88% were renters in Bend • 25 to 34 years old: 76% were renters in Bend • 35 to 44 years old: 44% were renters in Bend
	Household size and composition	Household size increases until householder age 35 in Bend. • 84% of householders in Bend between ages 15-34 years live in households with two or more persons. • About 16% of Bend's householders between 15 to 34 years live in single-person households, compared with 25% of householders 35 to 64 years and 53% of householders over 65 years old.
	Household income	Younger households have lower income and homeownership rates on average. • Younger households generally had less accumulated wealth, such as housing equity. • About 33% of households under 25 years had an income of less than $25,000 in Bend. About 40% of households between 25 and 44 had income of less than $50,000. • Households between 25 and 44 years had higher than average income, at about 129% of Bend's median household income. Higher incomes in this age group suggest greater opportunities for homeownership among people in this age group. • Higher incomes generally correlate with homeownership. The median income for homeowners in Bend was $67,755 (in 2013), compared with $33,121 for renters.
	Potential effect on housing demand	Growth in Millennials will result in increased demand for all housing types in Bend. Recent research hypothesizes that Millennials may make different housing choices than their parents as a result of the on-going recession and housing crisis. Some studies suggest that Millennials will prefer to rent and will prefer to live in multi-family housing, especially in large cities. Other studies suggest that the majority of Millennials' housing preference is to own a single-family home. Recent surveys suggest that as Millennials age and form families, they will increasingly prefer to live in single-family homes in suburban locations or in walkable communities with alternatives to driving. Based on review of recent research it seems unlikely that the majority of Millennials will make fundamentally different housing choices than previous generations as they age and have families, but their housing choices may be constrained by what they can afford due to student loan debt, and prolonged entry into higher paying positions due to the Baby Boomers putting off retirement. These trends are consistent with national housing trends, such as decreased homeownership rates and increases in housing affordability issues. • Millennials are more interested in living within a city (including in a downtown area) or a suburb closer to a city than prior generations.[48] • Millennials are more willing than other age groups to choose to live in a community with a wider range of housing and denser housing, where it is easier to talk to work or nearby urban amenities, and where transportation by automobile is less common.[49]

[46] Oregon Office of Economic Analysis, Forecasts of Oregon's County Populations and Components of Change, 2010 – 2050, [Excel Workbook] (March 2013).

[47] Ibid.

[48] American in 2013 Focus on Housing and Community, Urban Land Institute
Belden Russonello & Stewart Research and Communications, 2004 National Community Preference Survey,(Conducted for Smart Growth America and National Association of Realtors, 2004).
Eugenia L. Birch, Who Lives Downtown, Living Cities Census Series(Washington, D.C.: The Brookings Institute, November 2005).

		• Millennials are likely to choose to rent and are more likely to rent a multi-family unit than older households. This choice may be made from preference but is likely to be necessitated by lower income. • Millennials who prefer single-family units may prefer, or only be able to afford, smaller single-family units.[50] • As they establish their careers, their incomes increase, and they form families, it seems likely that a large share of Millennials in Bend will choose to live in an owner-occupied single family house. Some Millennials may prefer to rent or own a multi-family unit in or near Bend's downtown. • Bend is a suburban market, with urban amenities that may appeal to Millennials who prefer to live in a smaller city but in an area with a wide range of access to outdoor recreational activities. Bend itself does not have distant suburbs but nearby smaller cities have filled the role of distant suburbs for Bend. Millennials may choose to live in Bend's suburban neighborhoods, rather than in nearby smaller cities, if housing in Bend is affordable.

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[49] *American in 2013 Focus on Housing and Community*, Urban Land Institute
Belden Russonello & Stewart Research and Communications, *2004 National Community Preference Survey*,(Conducted for Smart Growth America and National Association of Realtors, 2004).

[50] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2013).

Table 9. Growth of immigrants and change in ethnic composition[51]

Demographic trends		Bend is becoming more ethnically diverse, with growth in the Hispanic and Latino population (both from immigration and from current residents in Bend). • Bend became more ethnically diverse, with Hispanic and Latino population growing by almost 250% between 2000 and 2013, an addition of 5,963 Hispanic or Latino residents. • Nationally, growth in Hispanics is driving population growth, both from immigration and from natural increase of Hispanics living in the U.S.[52]
Effect of trends on household choice	**Age of household head**	The Hispanic population in Bend has a different age structure than Bend's overall population. • In 2013, median age for Hispanics (23.0 years) was lower with the median age for the total population (36.6 years) in Bend. Nationally, growth in Hispanic population between 2013 and 2023 will help off-set decreases in white householders between the ages of 30 and 49.[53]
	Household size and composition	Nationally, Hispanic households with children grew at a faster rate than other minority populations between 1995 and 2005, resulting in increased demand for housing to accommodate families.[54] • In 1999, 51% of Hispanic households had children, compared with 33% of all households.[55] Hispanic households in Bend are more likely to be larger and less likely to be homeowners. • In 2010, the average size of Hispanic households in Bend was 3.4 persons per household, compared with an average of 2.4 persons per household for all households in Bend.[56] • Hispanic households in Bend live in single-family houses (detached and attached) less often than non-Hispanic households. About one-third of Hispanic households live in single-family dwellings, as compared to about 75% of non-Hispanic households. • About one-third of Hispanic households are homeowners, compared with an ownership rate of almost 60% for all households in Bend. In 2013, Oregon's Hispanic households were more likely to be younger homeowners. Nearly three-quarters of Hispanic homeowners in Oregon were younger than 45 years old. In comparison, about one-third of non-Hispanic homeowners were younger than 45 years old.[57].
	Household income	Hispanic households in Bend have lower than average income. • Hispanic households in Bend have lower than average income, with household income at 78% of Bend's median ($37,586) and family income at 81% of Bend's median ($39,052).[58] Immigrants generally have lower income than U.S.-born workers but income increases for immigrants the longer they have been in the U.S. and through successive generations. • First generation immigrants may take several decades to earn sufficient incomes to become homeowners[59] and to have income comparable to a person born in the U.S., of a similar age and education. This is true of Hispanic immigrants.[60]

[51] This table contains information from the U.S. Census 2010 and 2011 American Community Survey. Information at the national (U.S.) level about Hispanics in this section is from the Pew Research Center report *Second-Generation Americans: A Portrait of the Adult Children of Immigrants.*

[52] Ibid.

[53] Ibid.

[54] Ibid.

[55] Martha F. Riche, *The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities*, (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy, March 2001).

[56] U.S. Census, 2000 Decennial Census.

[57] U.S. Census, 2013 American Community Survey

[58] U.S. Census, 2013 American Community Survey, 3-year estimates

[59] James P. Allen, How Successful Are Recent Immigrants to the United States and Their Children? Presidential Address delivered to the Association of Pacific Coast Geographers, 68th annual meeting, Phoenix, Arizona, October 22, 2005 (Los Angeles: The Association of Pacific Coast Geographers, 2006)

		• Income generally increases for second-generation immigrants, who have higher educational attainment.[61] This is true of recent Hispanic immigrants.[62] • In 2012, the national median household income for first generation Hispanic households was $34,600, compared to $48,400 for second-generation Hispanic households, compared with the U.S. average of $58,200.[63] Hispanic households suffered steeper drops in household wealth than non-Hispanic white households during the recession, which may affect their ability to own homes, although the desire for homeownership remains strong.[64]
	Potential effect on housing demand	Growth in Hispanic and Latino households may result in increased demand for multi-family and single-family housing in Bend. Growth in Hispanic and Latino households will increase need for affordable housing for renters and homeowners such as: single-family dwellings (both smaller and larger sized dwellings), duplexes, larger townhomes, garden apartments, and apartments. Ownership opportunities for Hispanic and Latino households will focus on moderate-cost ownership opportunities, such as single-family dwellings on a small lot or in a more suburban location, duplexes, and townhomes. • Affordability is likely to be a more common problem for Hispanic and Latino households, especially recent immigrants, because they have lower income on average. • Homeownership increases the longer immigrants stay in the U.S. Longer-term first generation immigrants and second-generation immigrants may become home owners, depending on their ability to afford owning a home.[65] • Hispanic population with lower income is more likely to choose lower-cost housing, such as multi-family housing because that is what they can afford. • Hispanics are more likely to rent but when they are homeowners, they are more likely to live in a more urban area, compared with white households.[66] • Growth in Hispanics will increase demand for smaller "starter homes" and entry-level apartments.[67]

[60] Pew Research Center report Second-Generation Americans: A Portrait of the Adult Children of Immigrants, 2013.

[61] Allen, James P. "How Successful Are Recent Immigrants to the United States and Their Children?" Presidential Address delivered to the Association of Pacific Coast Geographers, 68th annual meeting, Phoenix, Arizona, October 22, 2005.

[62] Pew Research Center report Second-Generation Americans: A Portrait of the Adult Children of Immigrants, 2013.

[63] Pew Research Center report Second-Generation Americans: A Portrait of the Adult Children of Immigrants, 2013.

[64] Joint Center for Housing Studies of Harvard University, *The State of the Nation's Housing*, 2013.

[65] Gregory Rodriguez, *Immigrants Today: Where they Come From, Where They Live in the US*, Emergences, Volume 9, Number 2 (Washington, D.C.: Taylor & Francis Ltd 1999).

[66] Martha F. Riche, *The Implications of Changing U.S. Demographics for Housing Choice and Location in Cities*, (Washington, D.C.: The Brookings Institution Center on Urban and Metropolitan Policy, March 2001).

[67] Joint Center For Housing Studies of Harvard University, *State of the Nation's Housing,* (Cambridge, MA: President and Fellows of Harvard College, 2007).

Summary of key findings about how demographic trends may affect housing choice

Identifying future housing needs based on expected demographic changes requires making qualitative assessments of the future housing market. Demographic changes are likely to affect housing in Bend's housing market in the following ways over the next 20 years. The future housing mix will look different than the recent past. Based on the future demographic trends, the most pressing need is to increase the range (both in size and in pricing) of housing products in walkable neighborhoods.

- **Recession may have delayed some effects of demographic shifts.** The impacts of major demographics shifts are being delayed due to the financial effects of the recession, however, substantial housing demand shifts are underway that will change land use patterns. Baby Boomers are working longer and may not be moving because of a loss of home equity. Millennials have taken on college debt, are having a hard time getting a foothold in the workforce, and are therefore delaying household formation. The extended effects of the recession will mean that more households are renting for an extended period of time before being able to make a home purchase, or will only be financially capable of purchasing a smaller, less-expensive home. In summary, this delay means more near-term demand for rental housing or smaller less-expensive ownership housing.
- **Continued but slower demand for large-lot single-family housing.** In Bend, demand for large-lot single-family housing is likely to take the form of three or four bedroom houses on a lot of about 8,000 to 10,000 square feet. Generation X (the generation born after the Baby Boomers and before the Millennials), is currently in its prime family raising years, and the demographic group most likely to need larger single family homes. Generation X is much smaller than either the Baby Boomer or Echo Boomer generations. As the Baby Boomers move out of their existing single-family homes, there will be fewer households to take them over in the short-term. In recent years, Bend has been attracting retirees who are purchasing (and, in some cases, renting) available single-family dwellings.

  In the future, growth of Millennials and shrinking of the Baby Boomer generation may slow demand for new large-lot single-family housing. The Echo Boomer's preferences are generally for more walkable communities and they are willing to accept smaller homes in closer proximity to amenities. In addition, Millennials have lower income and higher debt.

  However, much of Bend's growth results from in-migration of people from outside of Central Oregon, many of whom are attracted to Bend's access to outdoor amenities, open space, and rural quality of life that Bend offers. Interviews with Bend's development community noted that demand for single-family housing that offers ample parking and storage for outdoor equipment is strong.

  All of these factors contribute to continued demand for large-lot single-family detached

housing but suggest that demand for this type of housing is likely to slow between the 2008 to 2028 period. Demand for this type of housing is likely to be driven by migration of people to Bend with wealth, as well as increase in income overtime from people living in Bend, especially households with growing families.

- **Demand will increase for a wider range of housing types.** Most of the evidence suggests that the bulk of the change will be in the direction of smaller average house and lot sizes for single-family housing. An aging population, increase in single-person households, increasing housing costs, and other variables are factors that support the conclusion that the future housing supply will include smaller and less expensive units and a broader array of housing choices. A substantial portion of Bend's residents will live in attached housing, such as townhouses, cottage housing, duplexes, garden apartments, or urban apartments. While most households may prefer to own their home, a growing share of households will be renters, either from choice (e.g., Baby Boomers who prefer to rent smaller units) or by economic necessity. Demand for these units will be particularly high in close-in areas near Bend's commercial and recreational amenities.
    - **Demand for a wider range of housing types by retirees**. Older households tend to move less frequently than younger households, and a large majority would like to age in place—a desire that grows stronger with age. Being near family, friends, and social organizations in walkable neighborhoods also becomes increasingly important with age. Of those that have moved recently, a third of Baby Boomers and half of the generation older than Baby Boomers have moved to smaller housing units. Those Baby Boomers who do move may be more likely than they were earlier in their lives to choose smaller homes (both smaller lots and smaller dwellings) and homes in locations with more amenities located near friends and family. These choices apply to both older households already living in Bend who choose to move and to older households who move to Bend from other communities. Interviews with members of Bend's development community indicated that small lot, cluster, or cottage housing might be appropriate housing types to meet this need.
    - **Housing for families will be in demand.** Millennials and Hispanic households are poised to account for the largest percentages of growth in Bend over the next 20 years. Millennials will be entering the phase of life when they form families and have children. In addition, Hispanic households have larger than average household size because they live in multi-generational households and have a larger number of children on average. Growth in households with families will drive need for housing that is both affordable and has sufficient space for a family.
    - **Housing affordability will continue to be an issue.** More than one-third of Bend's households were cost burdened in 2013.[68] This shows that a substantial proportion of Bend's households cannot afford housing in Bend. Interviews with

[68] A household is considered "cost-burdened" if they pay 30% or more of their gross household income on housing costs. Bend's rate of cost burden was comparable to the State average in 2013.

members of Bend's development community suggest a shortage of homes priced for first-time homebuyers. Many workers in Bend live in nearby communities because affordable housing is in short supply in Bend, and that the demand for small-lot housing with nearby amenities is increasing. The interviewees also indicate that, while there is demand for urban housing products (particularly rental apartments), the wages in Bend's service and tourism economy may not allow workers to afford rents sufficient to pay for units in newly-constructed buildings, which may inhibit further development of these types of housing. For two of the fastest growing demographics in Bend, the Millennials and Hispanic and Latino population, affordability is more likely to be a barrier to homeownership or higher-cost rental housing.

- **Location of housing will be increasingly important.** The location of housing is becoming increasingly important, with increased demand for housing in walkable neighborhoods near retail and other amenities. Where they can afford it, the Millennials generally prefer housing in walkable areas with retail and other amenities nearby, rather than housing in more suburban areas or in outlying cities. Some Baby Boomers who are downsizing are also choosing to live in similar walkable areas.
- **Design of housing and neighborhoods is important.** Well-designed multi-family and compact single-family located in a desirable neighborhood can provide opportunities for a wider range of housing options. Consumers are more likely to make the tradeoff of a smaller lot and home size when neighborhood parks, schools, and retail amenities are within walking distance. Therefore, there will be steady demand for multi-family and small-lot or attached single family housing in close-in locations proximate to Bend's downtown amenities and jobs.

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Step 4 – Determine the types of housing that are likely to be affordable to the projected households based on household income

This section summarizes regional and local income, and housing cost trends. Income is a key determinant in housing choice and a household's ability to afford housing. A review of historical income and housing price trends provides insight into the local and regional housing markets. This section presents information about changes in income, housing costs, and housing affordability, including:

- Identifying the types of housing that are likely to be affordable to the projected population based on household income.
- Organizing data gathered on household incomes by income range categories (e.g., high, medium, and low) and calculating the percent of total households that fall into each category.
- Considering local housing prices for the same timeframe as the income data, identifying the structure types financially attainable by each income.[69]

Income

As of 2013, median household income in Bend was about $48,000, compared to $46,800 in Deschutes County and $50,250 for Oregon. Between 1999 and 2013, income in Bend decreased by 16% in inflation adjusted dollars, consistent with state and county trends.

Table 10. Median Household Income (2013 dollars), Oregon, Deschutes County, Bend, 1999 and 2013, Inflation-adjusted

	1999	2013	Change, 1999 to 2013	% Change, 1999 to 2013
Oregon	$57,282	$50,251	-$7,031	-12.3%
Deschutes County	$58,230	$46,791	-$11,439	-19.6%
Bend	$57,200	$48,014	-$9,186	-16.1%

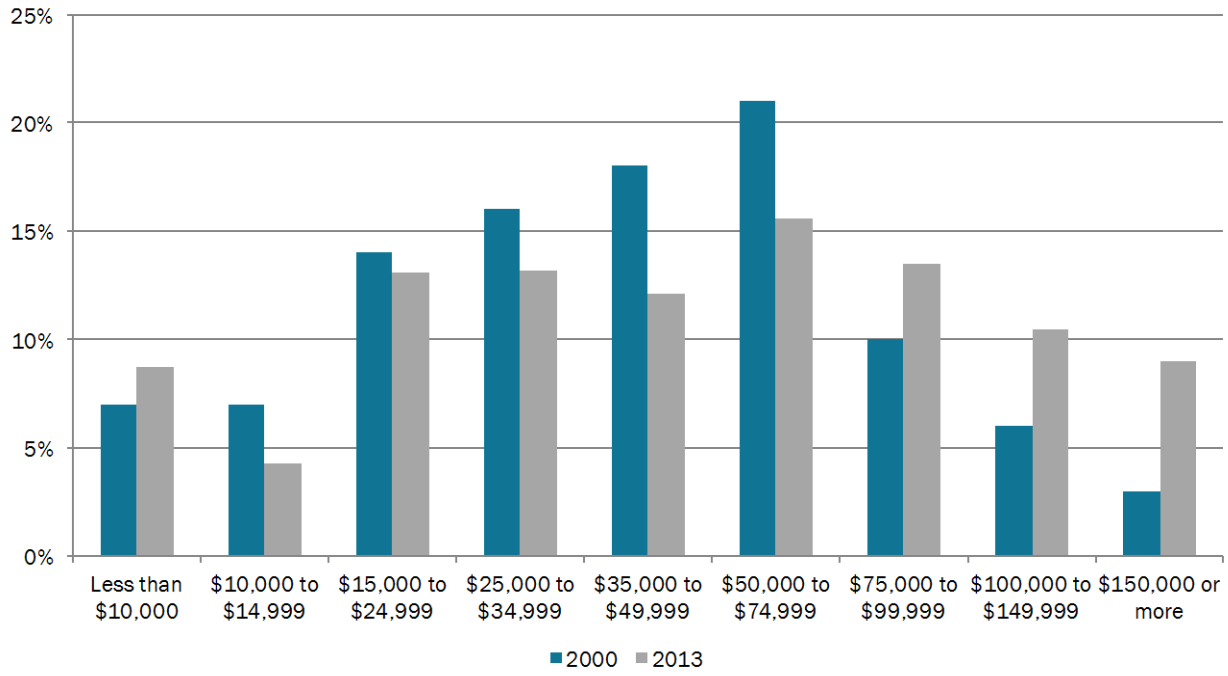
Source: 2000 Census and American Community Survey 2013 1-year Estimates

Figure 19 summarizes data from the 2000 Census and 2013 ACS for household income in Bend.

- Note that, by 2000, 62% of Bend's households had household incomes less than $50,000. A total of 31% of households had incomes between $50,000 and $99,999. The remaining 9% of households had incomes of $100,000 or more. The median household income in 2000 was $40,857.
- In 2013, the median household income had increased to $48,014, representing an 18% increase over 2000 levels.

[69] Please note that the 1997 guidebook directs the reader to consider structure types and tenure, For the purpose of this analysis, LCDC concluded that the city is not required to consider tenure in this HNA because the City does not regulate housing by tenure, See LCDC's Order pages 26-33.

Figure 19. Share of Households by Household Income (in nominal dollars), Bend, 2000 and 2013



Source: 2000 Census SF3, 2013 ACS 1-Year Estimates
Note: Household income is shown in 1999 dollars for 2000 Census data and in 2013 dollars for 2013 Census data.

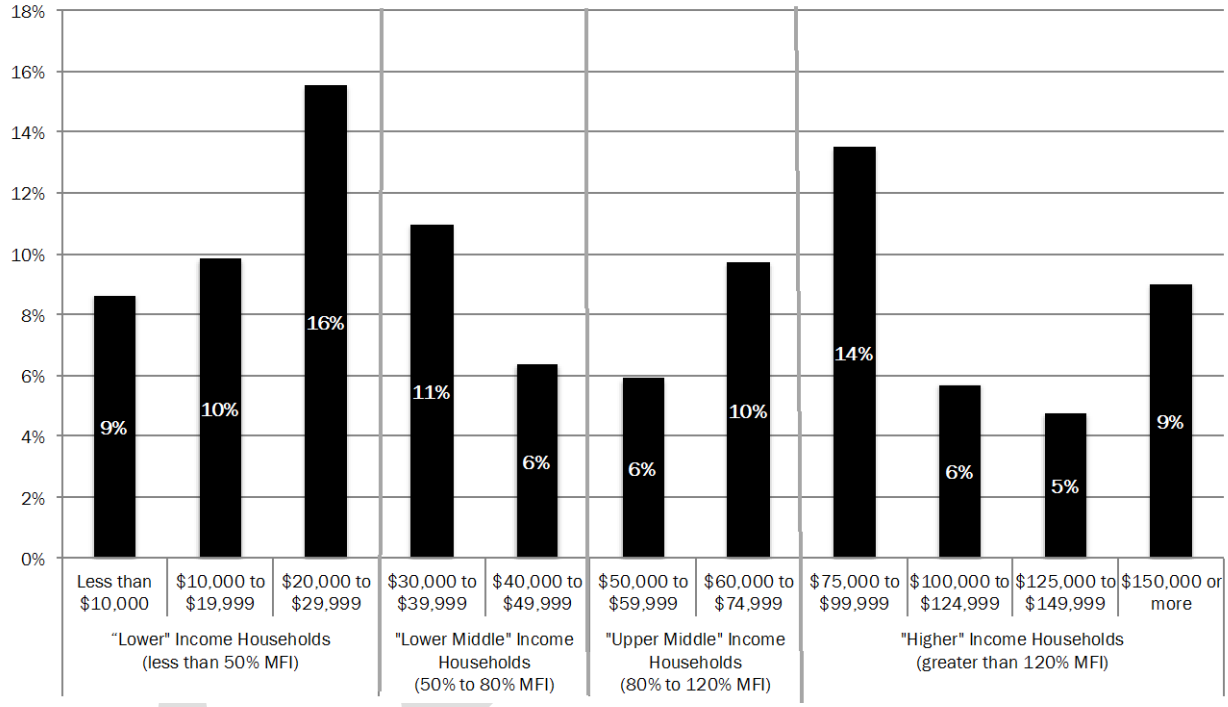
Figure 20 divides Bend's income data into one of four categories of Median Family Income (MFI): lower, lower middle, upper middle, and higher. These categories correspond to households that make less than 50%, 50% to 80%, 80% to 120%, and greater than 120% of the 2013 Deschutes County median family income ($59,700).[70] The purpose for this organization of the data is to better estimate the types of housing that will be affordable to each group based on household income.

- Households in the "lower" category are those that have household incomes of less than $29,850 (50% of MFI); these households represent 34% of all households in 2013. These households are generally considered "low-income" and may be eligible for government-subsidized housing. The types of housing that these households can afford are generally rental housing, such as older apartments, duplexes, or manufactured housing in parks (which could be either owner- or renter-occupied).
- Households in the "lower middle" category are those that have household incomes between $29,850 and $47,760 (50% to 80% of MFI); these households represent 17% of all households in 2013. These households are in the lower-earnings category of "workforce housing." While they can generally afford market-rate rents, they are more likely to be renters than homeowners. The types of housing households in this category can generally afford include smaller single-family detached houses, manufactured homes on lots or in parks, townhouses, duplexes, and apartments.

[70] HUD publishes Median Family Income by county each year.
http://www.huduser.org/portal/datasets/il/il13/index.html

- Households in the “upper middle” category are those that have household incomes between $47,760 and $71,640 (80% to 120% of MFI); these households represent 16% of all households in 2013. These households are in the higher-earnings category of “workforce housing.” These households are a mixture of renters and homeowners. The types of housing households in this category can generally afford include single-family detached houses, manufactured homes on lots or in parks, townhouses, duplexes, and apartments.
- Households in the “higher” category have household incomes of $71,640 or more (120% or more of MFI); these households represent 33% of all households in 2013. These households can afford most types of housing, with the majority of these households living in owner-occupied single-family detached housing.

Figure 20. Distribution of Households by Income Level, Bend, 2013



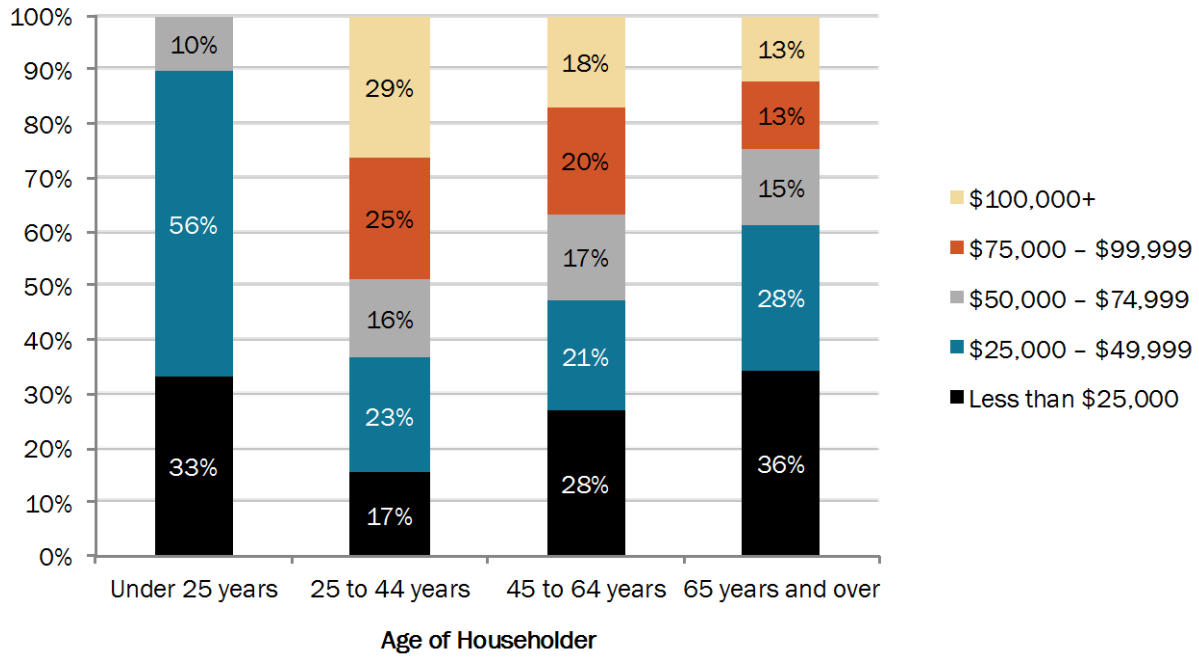
Source: 2013 American Community Survey 1-Year Estimates

Figure 21 presents data on age of householder by household income. These two variables are valuable indicators for identifying the housing choices that households make at different points in life, based on what they can afford.

- 33% of households with a householder under 25 years of age had household incomes under $25,000; 56% of these households had incomes between $25,000 and $49,999.
- 69% of households with a householder between 25 and 44 years of age had incomes between $50,000 and $100,000 or more.
- 55% of households with a householder between 45 and 64 years of age had incomes between $50,000 and $100,000 or more.

- 36% of households with a householder that was 65 years of age and over had incomes less than $25,000.

Figure 21. Distribution of Households by Household Income and Age of Householder, Bend, 2013

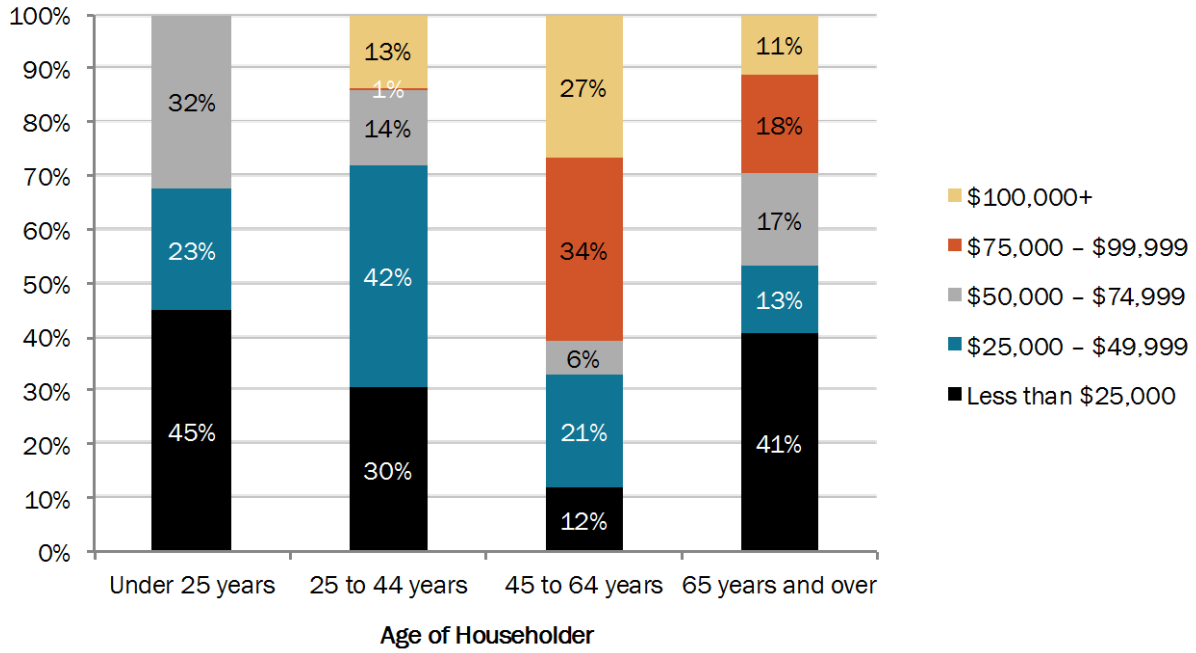


Source: 2013 American Community Survey 1-Year Estimates

Figure 22 shows this same information for Hispanic households in 2009 through 2013.

- 45% of households with a householder under 25 and 41% of households with a householder 65 years of age or older had incomes of less than $25,000.
- Households with householders between the age of 45 and 65 had the greatest share of incomes over $75,000 (61%).

Figure 22. Distribution of Hispanic Households by Household Income and Age of Householder, Bend, 2009-2013

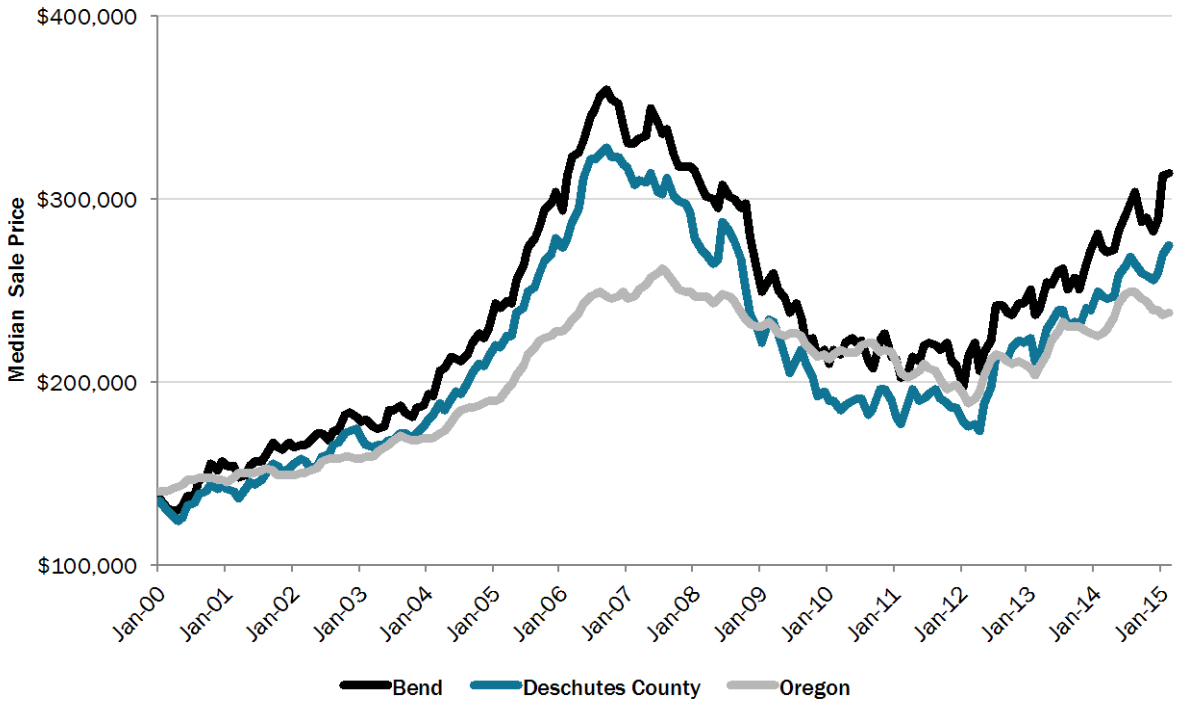


Source: 2013 American Community Survey 5-Year Estimates

Housing values

Figure 23 shows the median sales price in Oregon, Deschutes County, and Bend between 2000 and February 2015. As of February 2015, median sales prices in Bend were $314,000, higher than in Deschutes County ($274,400) and Oregon ($238,250).

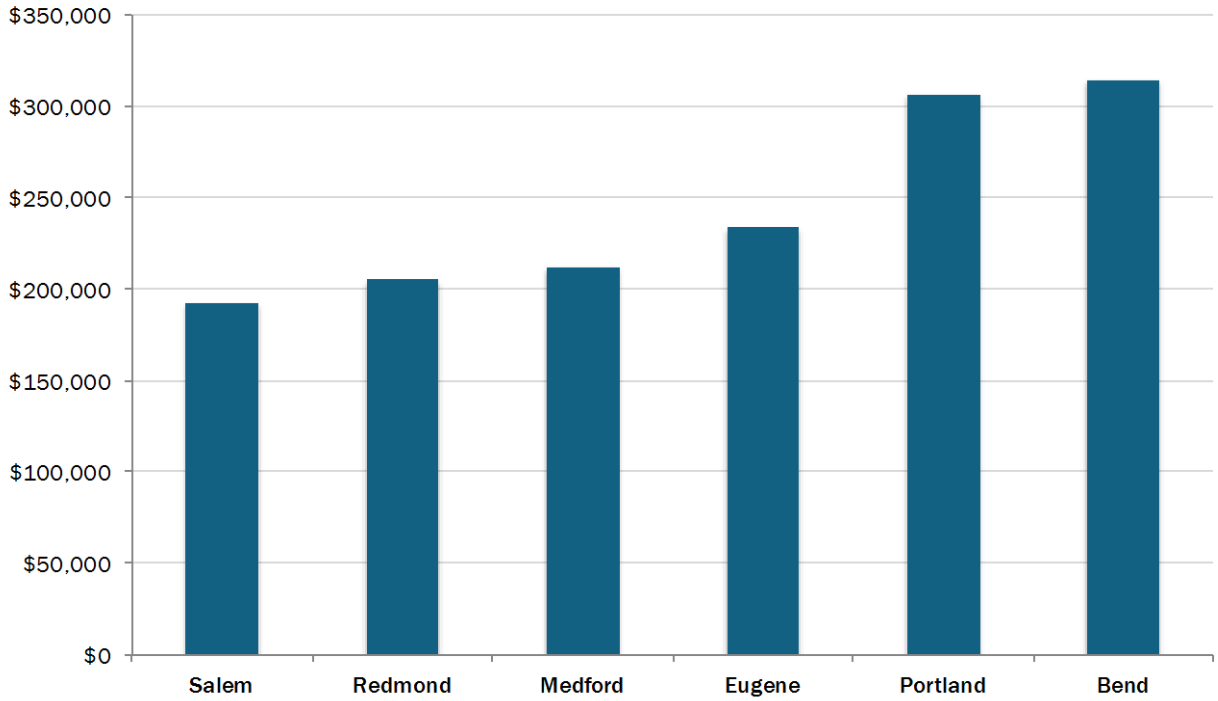
Figure 23. Median Sales Price, Oregon, Deschutes County, Bend, Jan 2000 through Feb 2015



Source: Zillow Real Estate Research

Figure 24 shows median home sales prices for Bend and regional cities in February 2015. In that month, median home sale prices in Bend were about $314,000, above sales prices in Oregon's largest cities, like Eugene, Salem, and Portland, and other central and southern Oregon communities, such as Redmond, and Medford.

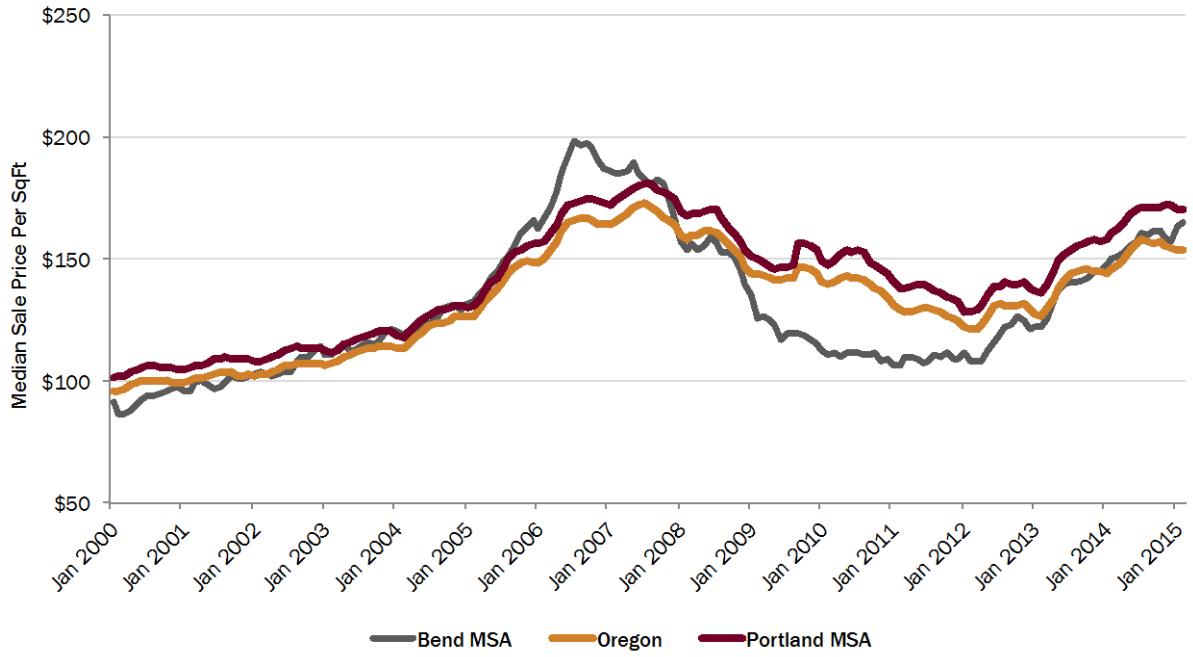
Figure 24. Median Home Sales Price, Bend, Portland, Eugene, Medford, Redmond, Salem, February 2015



Source: Zillow Real Estate Research.

Figure 25 shows median home sales price per square foot for Oregon, Portland MSA, and Bend MSA from January 2000 through February 2015. Prices per square foot rose in Bend from $91 per square foot in January 2000 to $199 in July 2006. Prices fell after 2007 and rose again starting in 2012. In February 2015, the median price per square foot in Bend was about $165 dollars, comparable to the price in the Portland Region (about $170) and above that of the state as a whole ($154 per square foot).

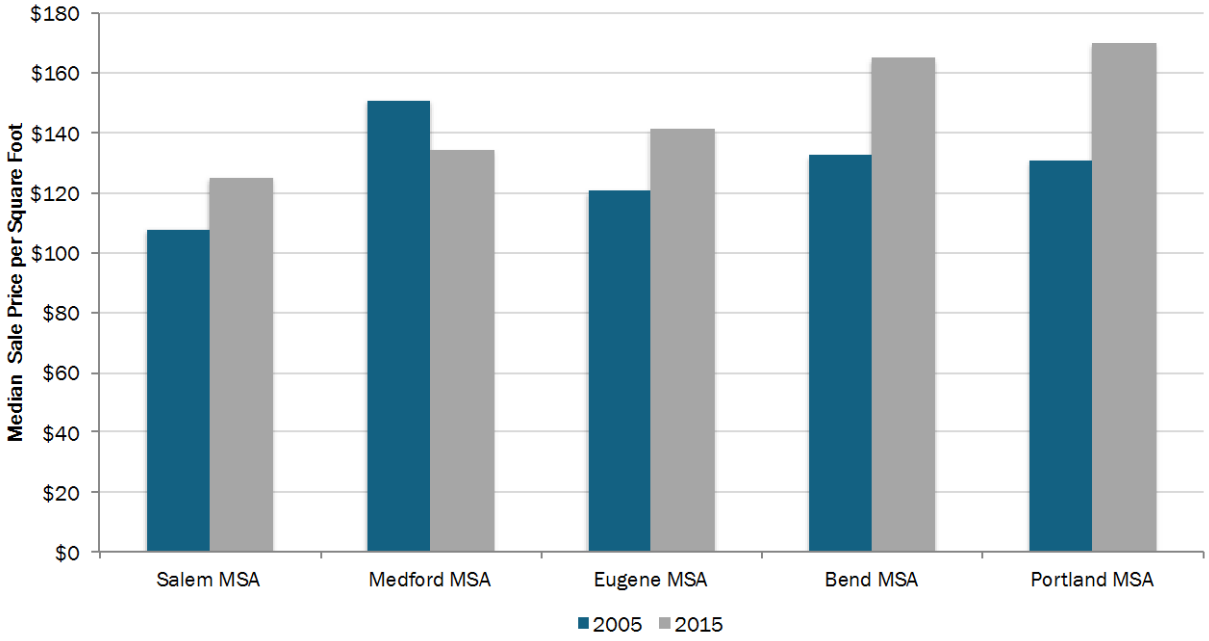
Figure 25. Median Sales Price per Square Foot, Bend, Oregon, and Portland, Jan 2000 - Feb 2015



Source: Zillow Real Estate Research
MSA is metropolitan statistical area. The Bend MSA is Deschutes County.

Figure 26 shows median home sales price per square foot for the Bend MSA and other large urban areas in Oregon in February 2005 and February 2015. Of the area sampled, Bend had the second-highest price per square foot, at $165 per square foot. Bend also saw the second highest growth in price per square foot ($32), with Portland just ahead at an increase of $39 per square foot and Eugene just behind at an increase of $21 per square foot.

Figure 26. Median Sales Price Per Square Foot, Salem, Medford, Eugene, Bend, Portland, Feb 2005 and Feb 2015



Source: Zillow Real Estate Research.
MSA is metropolitan statistical area.

Table 11 shows median household income and owner value (the estimated value of owner-occupied housing) in Bend between 1999 and 2013. During this period, housing costs increased faster than incomes, with an 18% increase observed in median household income, compared to an 81% increase in median owner value. Results show that the median owner value was 3.4 times the median household income in 1999—a figure that had increased to 5.2 by 2013.

Table 11. Comparison of Household Income and Housing Value Trends, Bend, 1999 to 2013

Indicator	1999	2013	% Change 1999 to 2013
Median Household Income	$40,857	$48,014	18%
Median Owner Value	$138,100	$250,300	81%
Ratio of Housing Value to Income	3.4	5.2	

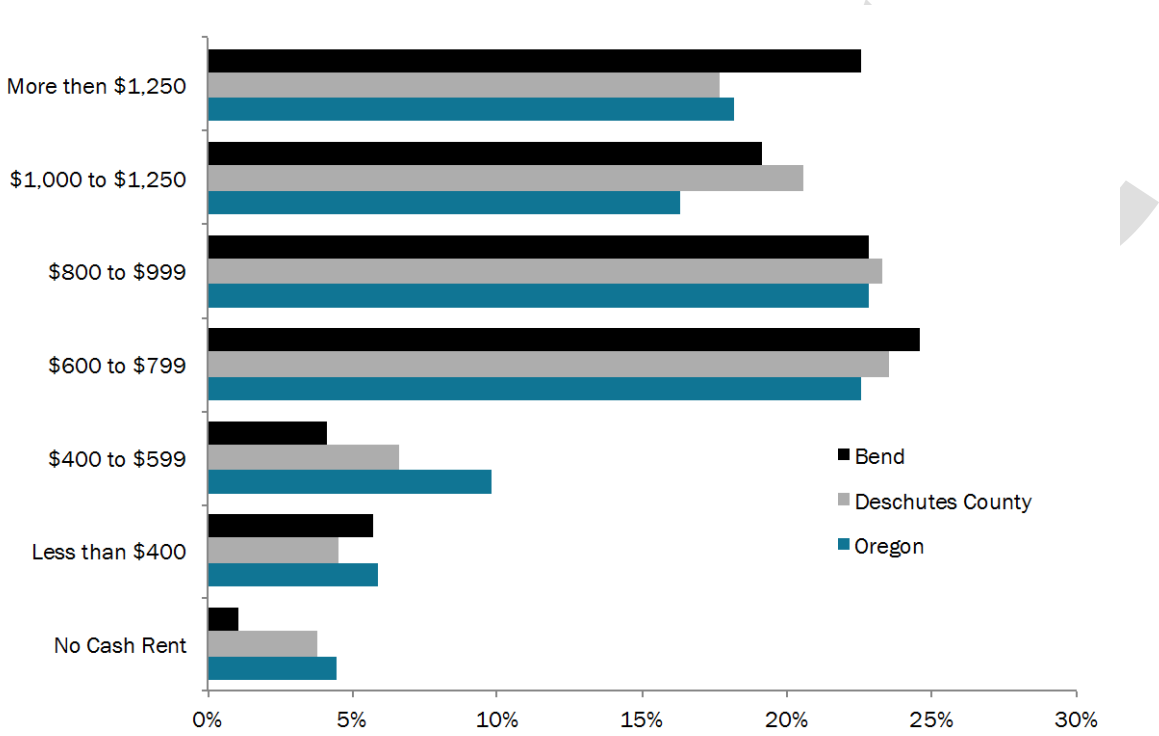
Source: 2000 Census SF3, 2013 ACS 1-Year Estimates

Housing rental costs

Figure 27 shows gross rent for renter-occupied units in Oregon, Deschutes County, and Bend, for 2011-2013.

- Almost 23% of all renter occupied dwellings in Bend had gross rent of more than $1,250, compared to roughly 18% of county and state renter occupied dwellings.
- About 10% of renter occupied dwellings in Bend had gross rent of less the $600, compared to 11% for Deschutes County and 15% for Oregon.

Figure 27. Gross Rent for Renter-Occupied Units, Oregon, Deschutes County, and Bend, 2011-13



Source: 2013 American Community Survey 3-Year Estimates

Table 10 shows median gross rent for Oregon, Deschutes County, and Bend from 2000 to 2013, adjusted for inflation. Rent increased in Bend by 6%, comparable to increases in Deschutes County, and the state. Over roughly the same period, median household income fell by 16% in Bend (See Table 11), showing that the cost of rent grew faster than incomes.

Table 12. Median Gross Rent, Oregon, Deschutes County, Bend, 2000 and 2013, Inflation-adjusted

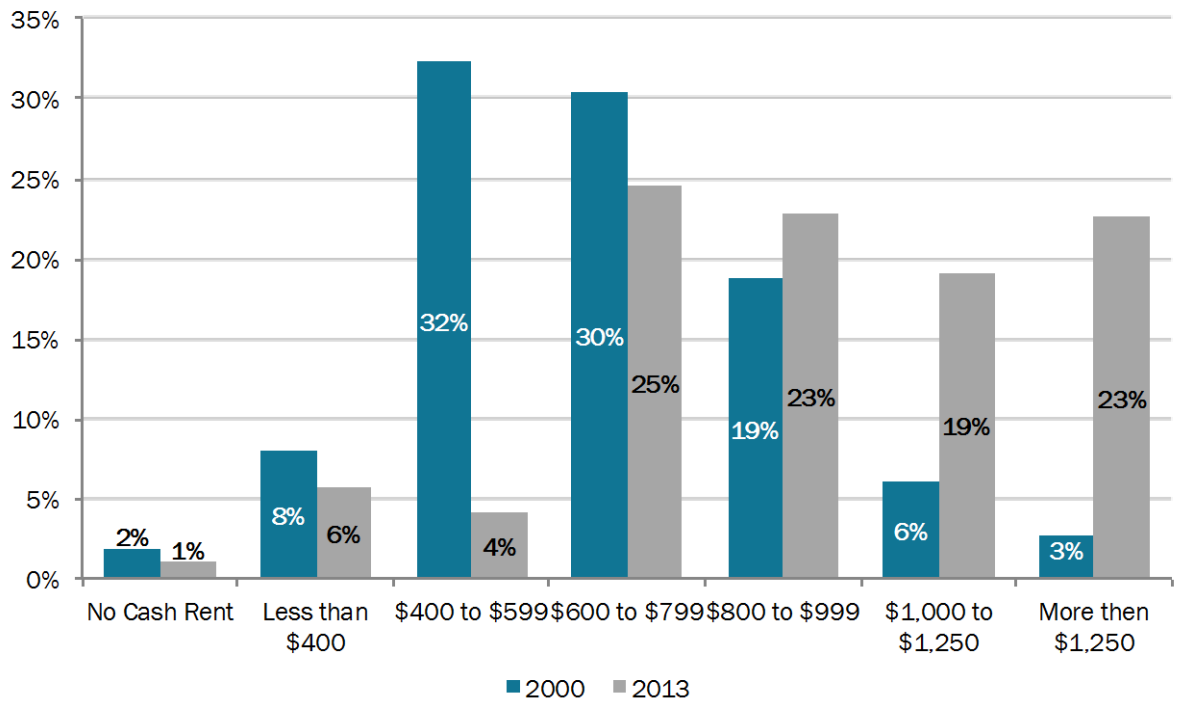
	2000	2013	Change, 2000 to 2013	% Change, 2000 to 2013
Oregon	$837	$877	$40	4.8%
Deschutes County	$869	$918	$49	5.6%
Bend	$876	$928	$52	5.9%

Source: 2000 Census American Community Survey 2013 1-year Estimates

Figure 28 describes changes in gross rent in Bend in between 2000 and 2013. Units with gross rent of $1,000 or more accounted for 84% of the growth in units available to rent between 2000 and 2013.

- The number of rental units that cost $499 or less decreased between 2000 and 2013.
- Conversely, the proportion of units available for rent for $600 or more increased between 2000 and 2013. By 2007, units renting for $600 or more represented 89% of the units rented.

Figure 28. Gross Rent in Bend, 2000 and 2013



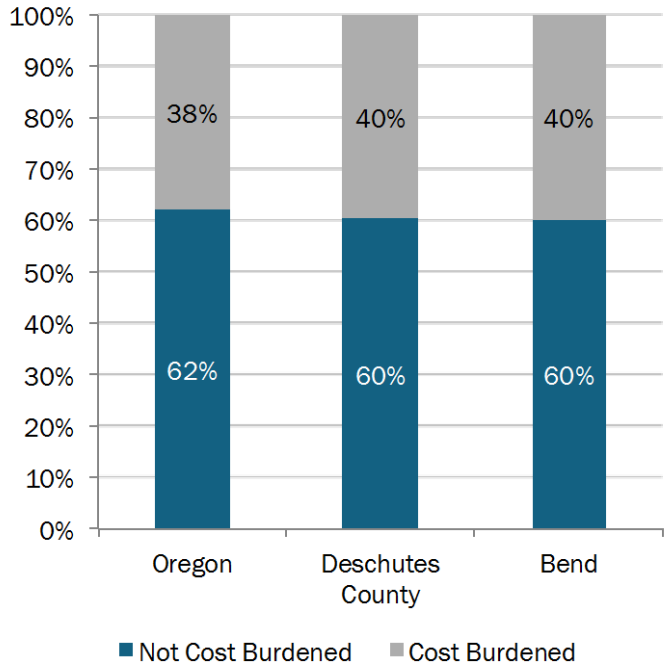
Note: The number of units included in this table includes all types of units available for rent in Bend in 2000 and 2013.
Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Housing Affordability

As noted previously, a widely used standard for determining housing affordability is that a household should pay no more than a certain percentage of household income for housing (including payments, interest, rent, utilities, and insurance). HUD guidelines place this percentage at 30%, indicating that households paying more than 30% of their income on housing experience “cost burden”. Households paying more than 50% of their income on housing, meanwhile, experience “severe cost burden.”

Figure 29 shows the share of households that were cost burdened in 2013 in Oregon, Deschutes County, and Bend. In Deschutes County as a whole, roughly the same percentage of all households – 40% – were cost burdened in 2013, with about 54% of renter households and 31% of owners experiencing cost burden. For comparison, 38% of Oregon’s households were cost burdened in 2013, corresponding to 50% of renter households and 29% of owner households.

Figure 29. Cost Burdened, Oregon, Deschutes County, Bend, 2013



Source: American Community Survey 2013 1-year Estimates

Figure 30 shows the share of Bend households by tenure that were cost burdened in 2013. According to the U.S. Census, approximately 12,119 households in Bend—40% of all households—paid more than 30% of their income for housing expenses in 2013. About 49% of renter households in Bend were cost burdened, compared with 33% of owner households. In 2000, 42% of renter households and 26% of owner households in Bend were cost burdened.

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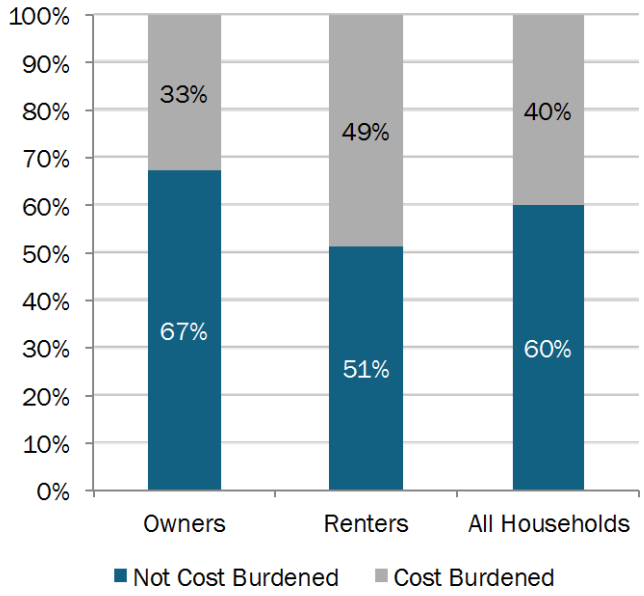
Figure 30. Cost Burden by Tenure, Bend, 2013



Source: 2013 American Community Survey 1-Year Estimates

Cost burden is only one indicator of housing affordability. Another way of exploring the issue of financial need is through analysis of wages relative to housing affordability. Table 13 shows an illustration of the affordable housing wage and rent gap for households in Bend at several different percentages of median family income (MFI).

Table 13 uses HUD's estimate of fair market rent for a two-bedroom dwelling in Deschutes County. Fair market rent is estimated as the 40th percentile of gross rents for typical, non-substandard rental units occupied by recent movers in a local housing market.

Table 13 shows that a typical family of four must earn $15.44 an hour to be able to afford a two-bedroom unit.

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Table 13. Affordable Housing Wage and Rent Gap for Households, Bend, 2013

Value	Minimum Wage	30% MFI	50% MFI	80% MFI	100% MFI	120% MFI
Annual Hours	2088	2088	2088	2088	2088	2088
Derived Hourly Wage	$8.95	$8.58	$14.30	$22.87	$28.59	$34.31
Annual Wage At Minimum Wage	$18,688	$17,910	$29,850	$47,760	$59,700	$71,640
Annual Affordable Rent	$5,606	$5,373	$8,955	$14,328	$17,910	$21,492
Monthly Affordable Rent	$467	$448	$746	$1,194	$1,493	$1,791
HUD Fair Market Rent (2 Bedroom)	$803	$803	$803	$803	$803	$803
Is HUD Fair Market Rent Higher Than The Monthly Affordable Rent?	Yes	Yes	Yes	No	No	No
Rent Paid Monthly OVER 30% of Income	$336	$355	$57	na	na	na
Rent Paid Annually OVER 30% of Income	$4,030	$4,263	$681	na	na	na
Percentage of Income Paid OVER 30% of Income for Rent	22%	24%	2%	na	na	na
Total Spent on Housing	52%	54%	32%	20%	16%	13%
For this area what would the "Affordable Housing Wage" be?	$15.38	$15.38	$15.38	$15.38	$15.38	$15.38
The Affordable Housing Wage Gap IS:	**$6.43**	**$6.81**	**$1.09**	**na**	**na**	**na**

Source: US Department of Housing and Urban Development 2013 Fair Market Rents , HUD 2013 MFI
HUD sets fair market rents based on an of market rent costs within a county, based on gross rent.
The values in Table 13 are:
Annual hours are the number of hours per year worked at a year-round, 40-hour per week job.
Derived hourly wage is the average annual wage divided by 2,080. For a household earning 80% of MFI, the hourly wage is $22.96.
Annual wage is the average wage made per year. For example, a household earning 80% of MFI has an annual wage of $47,760 (80% of $59,700 (Median Family Income)).
Annual affordable rent is 30% of the annual wage. For a household earning 80% of MFI, this is $14,328 (30% times $47,760).
Monthly affordable rent is the annual affordable rent divided by 12 months.
HUD Fair Market Rent (2 Bedrooms) is the fair market rent in Deschutes County in 2013.
Is HUD Fair Market Rent Higher Than The Monthly Affordable Rent? says whether the fair market rent is greater than the monthly affordable rent.
Rent Paid Monthly OVER 30% of Income is the difference between fair market rent and monthly affordable rent, if fair market rent is greater than monthly affordable rent.
Rent Paid Annually OVER 30% of Income is rent paid monthly over 30% of income multiplied by 12 months.
Percentage of Income Paid OVER 30% of Income for Rent is the annual percentage of the household's rent paid over the amount of rent that is affordable (30% of gross income).
Total Spent on Housing is the percentage of income spent on fair market rent per year.
For this area what would the "Affordable Housing Wage" be? is the wage that a household has to earn to afford a two-bedroom dwelling at fair market rent. This is the same amount for all households, regardless of income.
The Affordable Housing Wage Gap IS: is the difference between the derived hourly wage and the Affordable Housing Wage.

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Table 14 shows a rough estimate of affordable housing cost and units by income levels for Bend in 2013 based on Census data about household income, the value of owner occupied housing, and rental costs in the city. The table shows the number and percentage of households in each income level in Bend (e.g., Bend has about 2,631 households (9% of households) with income less than $10,000) based on Census data about income. The table shows the affordable monthly housing costs and affordable housing price, using HUD's standards for affordability. The Table shows the estimated number of owner and renter units in Bend based on Census data about the housing costs of people in Bend. The column "surplus (deficit)" subtracts the estimated number of owner and renter units from the number of households, showing whether Bend has enough housing to meet demand at each income level.

The data indicate that, in 2013:

- About one-fifth of Bend's households could not afford a studio apartment according to HUD's estimate of $557 as fair market rent;
- Almost 40% of households in Bend could not afford a two-bedroom apartment at HUD's fair market rent level of $803;
- A household earning median family income ($59,700) could afford a home valued up to around $149,250.

Based on the data presented in Table 14, in 2013 Bend had a deficit of approximately 5,243 affordable housing units for households that earn less than $25,000 annually (26% of households in the city earn this amount or less).[71]

Table 14. Affordable Housing Costs and Units by Income Level, Bend, 2011-2013

Income Level	Number of HH	Percent	Affordable Monthly Housing Cost	Crude Estimate of Affordable Purchase Owner-Occupied Unit	Est. Number of Owner Units	Est. Number of Renter Units	Surplus (Deficit)	HUD Fair Market Rent (FMR) in 2013
Less than $10,000	2,631	9%	$0 to $250	$0 to $25,000	509	360	(1,763)	
$10,000 to $14,999	1,299	4%	$250 to $375	$25,000 to $37,000	254	364	(681)	
$15,000 to $24,999	3,996	13%	$375 to $625	$37,500 to $62,500	176	1,021	(2,800)	Studio: $557
$25,000 to $34,999	4,028	13%	$625 to $875	$62,500 to $87,500	226	4,262	460	1 bdrm: $645 2 bdrm: $803
$35,000 to $49,999	3,676	12%	$875 to $1,250	$87,500 to $125,000	959	4,556	1,839	3 bdrm: $1,147
$50,000 to $74,999	4,753	16%	$1,250 to $1,875	$125,000 to $187,500	4,004	2,015	1,265	4 bdrm: $1,373
Deschutes County 2013 MFI: $59,700			$1,493	$149,250				
$75,000 to $99,999	4,107	14%	$1,875 to $2,450	$187,500 to $245,000	2,434	904	(769)	
$100,000 to $149,999	3,181	10%	$2,450 to $3,750	$245,000 to $375,000	4,289	154	1,262	
$150,000 or more	2,742	9%	More than $3,750	More than $375,000	3,877	51	1,186	
Total	30,413	100%			16,727	13,686	0	

Source: American Community Survey 2013 3-year Estimates, HUD 2013 Fair Market Rents, HUD 2013 MFI

Based on the forgoing analysis of household and economic trends, the City concludes that the following types of housing will be those types that are needed and financially attainable by each income group listed above in Table 13 and Table 14.

[71] The Surplus or deficit in Table 14 is calculated by subtracting the estimated number of owner units and renter units from the number of households in the income category. For example, for households with an income of $10,000 to $14,999, the math is 1,299 households minus 254 owner units minus 364 renter units equals a deficit of 681 units.

Table 15 shows the type of housing that is attainable at different household income categories (relative to the 2013 Deschutes County MFI), and the distribution of these households in Bend in 2013.

Table 15. Housing Attainability, Bend, 2013

Market Segment by Income	Income Range	Number of households	Percent of Households	Financially Attainable Products		
				Owner-occupied	Renter-occupied	
High (120% or more of MFI)	$71,640 or more	10,622	35%	All housing types; higher prices	All housing types; higher prices	
Upper Middle (80%-120% of MFI)	$71,640 to $47,760	4,618	15%	All housing types; lower values	All housing types; lower values	Primarily New Housing
Lower Middle (50%-80% of MFI)	$47,760 to $29,850	4,817	16%	Manufactured on lots; single-family attached; duplexes	Single-family attached; detatched; manufactured on lots; apartments	Primarily Existing Housing
Lower (30%-50% of less of MFI)	$29,850 to $17,910	5,068	17%	Manufactured in parks	Apartments; manufactured in parks; duplexes	
Very Low (Less than 30% of MFI)	Less than $17,910	5,288	17%	None	Apartments; new and used government assisted housing	

Source: American Community Survey 2013 1-year Estimates

Manufactured homes

Manufactured homes are and will be an important source of affordable housing in Bend. They provide a form of homeownership that can be made available to low- and moderate-income households. Cities are required to plan for manufactured homes—both on lots and in parks (ORS 197.475-492).

Generally, manufactured homes in parks are owned by the occupants who pay rent for the space. Monthly housing costs are typically lower for a homeowner in a manufactured home park for several reasons, including the fact that property taxes levied on the value of the land are paid by the property owner rather than the manufactured homeowner. The value of the manufactured home generally does not appreciate in the way a conventional home would, however. Owners of manufactured homes in parks are also subject to the mercy of the property owner in terms of rent rates and increases. It is generally not within the means of an owner of a manufactured home to relocate the home to escape rent increases. Living in a park is desirable to some because it can provide a more secure community with on-site managers and amenities, such as laundry and recreation facilities.

OAR 197.480(4) requires cities to inventory the mobile home or manufactured dwelling parks sited in areas planned and zoned or generally used for commercial, industrial or high-density residential development. Table 16 presents the inventory of mobile and manufactured home parks within Bend in 2015. The results show that there are 12 manufactured home parks with 1,348 spaces and 27 vacant spaces in or adjacent to Bend. Table 16 shows that two

manufactured home parks are in commercial zones and non are in industrial or high-density residential zones (although two parks are in a medium density zone).

In response to dwindling numbers of affordable mobile home units, City Council has adopted a program to promote re-zoning of closed manufactured home parks to higher-density zoning to provide an incentive for park owners to replace those units with affordable rental housing.

Table 16. Inventory of Mobile/Manufactured Home Parks, City of Bend, 2014

Name	Location	Park Type	Total Spaces	Vacant Spaces	Zone
Bend Trailer Park	**335 SE Roosevelt**	**Family**	**7**	**0**	**Commercial Limited**
Cascade Village - Bend	63700 Cascade Village Dr	55+	89	0	Residential Standard Density
Country Sunse	61445 SE 27th St	Family	148	0	Residential Low Density
Fox Hills Mobile Home Court	61058 Alopex Ln	Family	62	5	Residential Standard Density
Golfside Park	61055 Parrell Rd	Family	94	0	Residential Standard Density
Parrell/Sisters Mobile Home Park	61310 & 61292 Parrell Road	Family	87	6	Residential Standard Density
Rock Arbor Villa Mobile Home Park	**2200 NE Hwy 20**	**55+**	**77**	**0**	**General Commercial**
Romaine Village Country Estates	19940 Mahogany St	Family	177	5	Residential Low Density
Snowberry Village	1188 NE 27th	55+	132	0	Residential Standard Density
Suntree Village Mobile Home Park	1001 SE 15th St	55+	214	0	Residential Medium Density
The Pines	61000 Brosterhous Rd	Family	191	11	Residential Standard Density
West Side Pines Cooperative	141 SW 15th St	Family	71	0	Residential Medium Density
Total			**1,349**	**27**	

Source: Oregon Manufactured Dwelling Park Directory; http://o.hcs.state.or.us/MDPCRParks/ParkDirQuery.jsp
Note: Several of these mobile/manufactured home parks are located on Bend's periphery, outside of the city and UGB.

Summary of Key Findings about Housing Affordability

The analysis of housing affordability shows the following trends that will result in increased need for a broader range of housing in Bend:

- **Housing sales prices for owner-occupied units grew substantially faster than incomes over the 2000 to 2013 period.** Since 2000, household income increased by 18% ($7,200 per year) and median sales price increased by 110% ($151,600). The median owner value increased from 3.4 times the median household income in 1999 to 5.2 by 2013. Cost burden for owners increased from 26% of owner-occupied households being cost burdened in 2000 to 33% of owners in 2013.

  The decreases in housing affordability for homeowners shows an increased need for less costly smaller single-family detached housing, both smaller lots and smaller units, such as cottages or cluster housing, and for townhouses. Demand for owner-occupied multifamily housing, such as garden apartments or urban condominiums, may increase, especially in walkable areas with access to services. These types of more affordable owner-occupied units are the types likely to be preferred by some downsizing Baby Boomers and Millennials, especially as the first houses for Millennials.

- **Bend has a substantial level of demand for rental housing affordable to low- and moderate-income households.** The share of renter households paying $1,000 or more in rent per month increased from 9% of households in 2000 to 42% in 2013. Cost burden for renters increased from 42% in 2000 to 49% of owners in 2013.

  The increase in rent costs, combined with expected growth of households who will need

affordable rental housing, such as young Millennials and some Hispanic and Latino households, suggest that Bend will have increased need for affordable types of housing such as townhouses, duplexes, garden apartments, urban apartments, and other multifamily housing types.

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Step 5 – Estimate the number of additional needed units by structure type and Step 6 – Determine the needed density ranges for each plan designation and the average needed net density for all structure types

This section summarizes the most important facts and conclusions presented in previous sections, focusing on the specific requirements of ORS 197.296. Cities are required to determine the average density and mix of *needed* housing over the 20-year planning period (ORS 197.296(5)). The statute requires the determination of the Housing Needs Projection (e.g., needed density and mix) consider the following factors that may affect future housing need:

A. The number, density and average mix of housing types of urban residential development that have actually occurred;

B. Trends in density and average mix of housing types of urban residential development;

C. Demographic and population trends;

D. Economic trends and cycles; and

E. The number, density and average mix of housing types that have occurred on the buildable lands.

Thus, the HNA must consider a range of factors, and they do not lend themselves to an empirical formula. The data and analysis are intended to inform the community's discussion of what types of housing will be needed. The remainder of this section presents the estimate of additional needed units by structure type and the rationale for the estimate.

The needed housing density and mix for the 2008 to 2028 period in Bend is different than actual housing density and mix, based on the following factors:

Housing mix (ORS 197.296(5)(A) and (E)). The most common type of housing developed in Bend was single-family housing types.

- While the mix of housing types in Bend has varied over time, single-family detached housing has historically accounted for the majority of housing in Bend. In 2013, about 71% of Bend's total housing stock was single-family detached, 4% was single-family attached, and 25% was multifamily.
- Bend permitted an average of about 1,200 units per year between 1999 and 2014, 78% of which were single-family detached units.
- Fifty-five percent of housing in Bend was owner-occupied in 2013, a changed from 63% in 2000 and 54% in 1990.

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Housing Density (ORS 197.296(5)(A), (B) and (E)). The average density of single-family housing was 4.7 dwelling units per net acre and for multi-family housing was 15.8 dwelling units per acre over the 1998 to 2008 period.[72]

- The average density for residential development in Bend was 5.7 dwelling units per net acre during the 1998 to 2008 period, compared to an average for Bend's housing stock before 1998 of 3.7 dwelling units per net acre.
- The average density by zone during the 1998 to 2008 period was: 2.1 dwelling units per net acre (du/net acre) in RL, 4.9 du/net acre in RS, 13.4 du/net acre in RM, and 16.9 du/net acre in RH.
- The average density for single-family detached housing developed over the 1998 to 2008 period was 4.7 du/net acre and 5.1 du/net acre for manufactured homes on lots.
- The average density for single-family attached housing developed over the 1998 to 2008 period was 9.5 du/net acre and 16.0 du/net acre for manufactured homes on lots.

Regional Growth (ORS 197.296(5)(C). Bend's existing mix of housing is a result of a range of historical factors, related to both local and regional growth.

- The City grew rapidly from a small city in 1990 to a city of more than 78,000 people by 2013. The largest source of pressure for housing over this period was the Baby Boomers (especially younger Baby Boomers), who needed housing to accommodate children.
- Between 1990 and 20013, Bend's growth accounted for two-thirds of population growth in Deschutes County. Population and economic growth in Bend drives regional growth in Deschutes County and Central Oregon.
- The predominant type of housing built in many of Oregon's communities during the 1990's and early 2000's was single-family housing. In particular, single-family housing types dominated residential development during the high growth "boom" period from 2004 to 2007.[73]
- Between 1990 and 2013, about 85% of Deschutes County's population growth was from positive net migration (in-migration exceeded out migration) from other parts of Oregon or from outside of Oregon. Interviews with real estate professionals suggest Bend attracts in-migrants who have sufficient capital and income to afford higher-cost housing in Bend. In addition, Bend is attracting Millennials, many of whom prefer to live in an area with easy access to outdoor recreation.
- Bend annexed more than 17,000 people between 1990 and 1999. The majority of areas annexed were developed with relatively low-density single-family housing. All of Bend's population growth since 2000 has been due to natural increase (# births > # deaths) and positive net migration.

[72] The analysis about historical housing density used the density analysis from the 2008 housing needs analysis, for the 1998 to 2008 period, because the majority of residential development took place over that period and the majority of new housing developed between 2009 and 2013 was single-family detached. There was no reason to expect that development densities over the 2009 to 2013 period would have been substantially different from the 1998 to 2008 period, given the fact that Bend's development policies did not change over that period.

[73] This statement is based on ECONorthwest's experience developing housing needs analysis since 2007 for cities across Oregon, such as Salem, Eugene, Madras, Newport, Harrisburg, as well as other cities.

Economic Trends (ORS 197.296(5)(D). The economy in Bend grew over the last two decades. A separate analysis of economic opportunities shows that employment in Bend will continue to grow over the 20-year period.

- Between 2001 and 2013, Deschutes County added nearly 10,800 jobs. The majority of new jobs were in commercial sectors, such as health care and professional services, accommodations and food services, and administrative support.
- The per capita income (accounting for inflation), in Deschutes County increased by about 20% ($7,100 in 2014 dollars) between 1990 and 2013.
- Between 2008 and 2028, Bend is forecast to add 22,891 jobs, mostly in office and service sectors. While the economy and the housing market recently experienced a severe downturn in growth, Bend can expect to experience one to two complete economic cycles (from faster growth to little or no growth) over the planning period.

Demographic trends (ORS 197.296(5)(C). The population is aging and household sizes are generally decreasing within the region, with small increase in the share of single-person households.

- Future housing demand will be driven by in-migration, changes in age-demographics, and changes in household composition, with an increase in single-person households. New households and existing households are likely to undergo similar changes in age-demographics.
- Baby Boomers are the fastest growing segment of Deschutes County's population. People over 65 years old are projected to grow from 13% of the County's population in 2000 to 24% in 2030. These households will make a variety of housing choices. The major impact of the aging of the Baby-Boomers on demand for new housing will be through demand for housing types specific to seniors, such as assisted living facilities.

  In 2013, about 36% of householders over 65 years old in Bend had incomes of $25,000 or below. While people over 65 years old may have financial reserves (beyond income) or may own their home outright, the large share of households with incomes below $25,000 suggest that many older households will need access housing costing about $600 per month or less. About 28% of householders over 65 years old had incomes between $25,000 to $50,000 (near or below the median family income), suggesting that this group will need access to housing costing between $600 and $1,200 per month.

  Implications for Housing Product Types. Baby Boomers will make a range of housing choices as they age, from continuing to remain in their homes as long as possible, to downsizing to smaller dwellings, to moving into group housing (e.g., assisted living facilities or nursing homes) as their health fails. The aging of the Baby Boomers will increase need for: small single-family dwellings, cottages, accessory dwelling units, townhomes, apartments, and condominiums. Baby Boomers who move are likely to choose housing in areas with nearby shopping, health care and other services, such as neighborhoods with integrated services or in downtown Bend.
- Millennials are the second fastest growing segment of Deschutes County population. People aged 25 to 49 years old are projected grow by nearly 27,500 people between 2000 and 2030, an increase of 64%. This will result in between 2,200 to 2,600 more households in Bend with a head of household who is between 30 and 45 years old.

In 2013, about 17% of householders 25 to 45 years old in Bend had incomes of $25,000 or below and could afford $600 in housing costs per month. About 23% of householders in this age grouping had incomes between $25,000 to $50,000 (near or below the median family income), and could afford housing costing between $600 and $1,200 per month. About 16% of households in this age group had incomes of $50,000 to $75,000 and could afford monthly housing costs of about $1,200 to $1,900, which is the range when homeownership begins to be financially feasible in Bend. As Millennials age, the amount that they can afford to spend on housing may be lower than people in this age range in 2013 because of increases in debt, as discussed in the prior section about demographic characteristics and trends affecting housing demand in Bend.

Implications for Housing Product Types. Growth in Millennials will increase need for affordable housing for renters and homeowners such as: small single-family dwellings, cottages, accessory dwelling units, duplexes, townhomes, garden apartments, and apartments. The size of dwelling units will vary depending on household size, from single-person households to households with children. Millennials who move are likely to choose housing in areas closer to services and activities, such as downtown Bend and nearby neighborhoods, as discussed previously.

- Hispanic and Latino population grew by more than 200% in Bend between 2000 and 2013, growing from about 2,400 people to about 8,400 people. The U.S. Census projects that Hispanic and Latino population will grow from about 16% of the nation's population in 2010 to 22% of the population in 2030, with growth fastest in the western U.S., as discussed in the prior section about demographic characteristics and trends affecting housing demand in Bend. This will result in between 2,000 to 3,000 new households in Bend with a Hispanic or Latino head of household.

  In the previous period from 2009 to 2013, 28% of Hispanic and Latino households in Bend had incomes of $25,000 or below and could afford rents of $600 or less. About 30% of Hispanic and Latino households had incomes between $25,000 and $50,000, (near or below the median family income), and could afford housing costing between $600 and $1,200 per month. About 15% of Hispanic and Latino households had incomes of $50,000 to $75,000 and could afford monthly housing costs of about $1,200 to $1,900, which is within the range of when homeownership begins to be financially feasible in Bend.

  Implications for Housing Product Types. Hispanic and Latino households will need affordable housing that can accommodate larger households, including multi-generational households. Growth in Hispanic and Latino households will increase need for affordable housing for renters and homeowners such as: single-family dwellings (both smaller and larger sized dwellings), duplexes, larger townhomes, garden apartments, and apartments. Ownership opportunities for Hispanic and Latino households will focus on moderate-cost ownership opportunities, such as single-family dwellings on a small lot or in a more suburban location, duplexes, and townhomes.

- In addition to these large-scale demographic changes affecting Bend, development of the OSU Cascades Campus will impact housing need in Bend. OSU projects that the campus will grow to 5,000 students by 2025. The City recently approved a site plan for

development of 10 acres of OSU's campus. This approval included some on-site student housing in a dormitory for 300 students.[74]

Some students may live on campus in dormitories, may already live in Bend, or may commute to the campus from a nearby community. Some students, however, will move to Bend specifically to attend the University and will need student housing. Demand for off-campus student housing may significantly affect Bend's housing market, depending on how many students need off-campus housing and how soon they need it.[75] This analysis assumes that dormitory-style student housing will be accommodated on OSU's campus and is not accounted for in the land need estimate. Demand for off-campus student housing is not accounted for in the projection of population growth. As the timing of OSU's growth becomes more certain, the City should update its policies to address this need.

Housing Affordability (ORS 197.296(5)(C) and (D)). Bend's housing became less affordable for both renting and owning over the last decade.

- Between 1999 and 2013, growth in homeownership costs outpaced growth in income. In Bend, median owner value increased by 81% between 1999 and 2013, while median household income grew by 18%.
- Between 2000 and 2014, average sales price more than doubled, increasing from $137,000 to $288,000.
- Forty percent of Bend's households were cost burdened in 2013, with renters cost burdened more frequently than owners (49% compared to 33%). In comparison, 40% of households in Deschutes County and 38% of State households were cost burdened in 2013.
- In 2013, Bend had a gap in affordable housing for households that earn less $25,000.
    - Bend had a deficit of about 5,200 dwelling units that would be affordable to households earning $25,000 or less based on the U.S. Department of Housing and Urban Development's (HUD) affordability guidelines.
    - More than 13% of Bend's households could not afford a studio apartment at HUD's fair market rent level of $557, and just under one-third of households could not afford a two-bedroom apartment at HUD's fair market rent level of $803.
    - A household earning median family income ($59,700) could afford a home valued up to about $149,250, about half of the median sales price in Bend in 2014.
- Continued increases in housing costs may increase demand for denser housing (e.g., multifamily housing or smaller single-family housing) or locating outside of Bend. To the extent that denser housing types are more affordable than larger housing types, continued increases in regional housing cost will increase demand for denser housing.

When the balance of factors required by ORS 197.296(5) are considered, we conclude that the needed density and mix for the 20-year planning period is different than the actual density and mix achieved between 1999 and 2013. This is in part because the analysis period largely covers

[74] See Final Decision of the City of Bend Hearings Officer on PZ-14-0210.

[75] Final Recommendations (2014) OSU Cascades Housing Task Force

the housing boom period between 2004 and 2007—a period when an extraordinary number of higher cost single-family detached dwellings were built. It is also reflective of the fact that the data suggest the region has a significant affordability gap. This gap suggests that the region needs more lower cost housing, which in turn may be addressed through higher densities of certain types of housing and smaller housing types.

Table 17 presents the assessment of needed mix for housing built in Bend over the 2008 to 2028 period. The analysis in Table 17 is based on the following information and assumptions:

- The number of new dwelling units is based on the forecast for new dwelling units in Table 6.
- The majority of new housing will continue to be single-family detached housing. The type of single-family detached dwellings may change, with more emphasis on smaller and more affordable new single-family detached housing and a decrease in demand for large-lot single-family detached housing.
- Bend's housing need will change, with an increase in demand for single-family attached housing and multifamily housing. The forecast concludes that the needed mix of new housing is different from the mix of existing housing stock (Figure 1) and the mix of housing produced over the last decade (Table 3). The following demographic trends will result in an increase in demand for multifamily and single-family attached housing:
    - Growth in Baby Boomers. Households over 65 typically have lower income than younger households. Those without accumulated wealth (e.g., housing equity or investments) may choose lower-cost multifamily housing. Some Baby Boomers may choose to downsize their housing, resulting in greater demand for small single-family dwellings, cottages, accessory dwelling units, townhomes, apartments, and condominiums.
    - Growth Millennials. Younger Millennials typically have lower income and may have higher debt. Growth in Millennials will increase need for affordable housing for renters and homeowners such as: small single-family dwellings, cottages, accessory dwelling units, duplexes, townhomes, garden apartments, and apartments.
    - Growth in Hispanic and Latino population. To the extent that in-migrating Hispanic and Latino households have lower than average income, then in-migration of ethnic groups will increase demand for housing affordable to low- and moderate-income households relative to demand for other types of housing. Growth in Hispanic and Latino households will increase need for affordable housing for renters and homeowners such as: single-family dwellings (both smaller and larger sized dwellings), duplexes, larger townhomes, garden apartments, and apartments. Ownership opportunities for Hispanic and Latino households will focus on moderate-cost ownership opportunities, such as single-family dwellings on a small lot or in a more suburban location, duplexes, and townhomes.
    - The growing need for affordable housing in the Bend, much of which is likely to be located in Bend, the largest metropolitan area in the region.
    - The current deficit of housing units (5,244) affordable to households earning $25,000 or less a year (See Table 14).

Table 17. Needed mix for housing built in Bend, 2008 to 2028

	Units	Percent of New Units
Single-family detached	9,175	55%
Single-family attached	1,668	10%
Multi-family	5,838	35%
Total	16,681	100%

Source: ECONorthwest

Table 18 shows that, between 2009 and the end of June 2014, 2,912 new units were developed in Bend. The City is considering policy options to achieve the needed mix shown in Table 17. Those policies were not in place between 2008 and 2014. Because the City had not adopted any policies to help achieve the needed mix, the mix of housing developed between 2009 and July 2014 did not show substantial changes in the development pattern from housing developed in Bend between 1999 and 2008.

As a result, Table 18 applies the needed mix (Table 17) to the remaining need. Table 18 shows that Bend has a need for 13,769 additional dwellings for the remainder of the 2008-2028 forecast period, between 2014 and 2028[76].

Table 18. Needed housing by needed mix, Bend, 2014-2028

	Needed Units (2008 - 2014)	Units permitted 2009 to end of July 2014	Remaining Need (Mix applied to remaining total)	
			Units	Percent of New Units
Single-family detached	9,175	2,411	7,573	55%
Single-family attached	1,668	112	1,377	10%
Multi-family	5,838	389	4,819	35%
Total	16,681	2,912	13,769	100%

Source: ECONorthwest

Based on the analysis above, we come to the following conclusions about Bend's needed densities:

- **Average development densities increased over time in most zones.** The densities in the RS, RM, and RH zones increased for development over the 1998-2008 period, when compared with the densities before 1998 (Table 5). Density in the RL zone did not change over the 1998-2008 period, compared to densities before 1998. The reasons for this increase in density include the historically high levels of residential development

[76] See meeting packets for the Residential TAC dated August 25, 2014 and January 26, 2015

during the 1998-2008 period, with an emphasis on high demand for single-family detached housing.

- **Bend's average development density will change with a shift in the type of housing developed in Bend over the 2014-2028 period.** The conclusion of the housing needs analysis is that Bend will have increased demand for a wider range of housing types, especially more affordable housing types. These housing types include: small lot single-family detached, smaller single-family detached units such as cottages, townhouses (aka rowhouses), duplexes, tri-plexes and quad-plexes, garden apartments, and urban apartments and condominiums. Development of these housing types will generally be at higher densities than Bend's historical densities. These housing types will be developed primarily in the RS and RM zones, with some denser multifamily housing in the RH zone.

The starting point for discussion of needed future densities in Bend is the historical development densities for the 1998-2008 period (Table 5). These densities serve as the basis for the base case capacity analysis, presented in the *Bend Urbanization Report*. Bend's needed density for development over the 2014-2028 period will be determined through additional analysis of future development patterns.

The *Bend Urbanization Report* provides information and analysis of efficiency measures that will increase housing density in Bend over the 2014-2028 period.

The next step in estimating units by structure type is to evaluate income as it relates to housing affordability. Table 19 shows an estimate of needed dwelling units by income level for the 2014-2028 period. The analysis uses market segments consistent with HUD income level categories, based on the income distribution in Bend in 2013 (See Table 15).

The analysis shows that about 50% of households in Bend could be considered high or upper-middle income in 2013 and that about half of the housing need in the 2014-2028 period will derive from households in these categories. The analysis also shows that 50% of Bend's households could be considered lower-middle, low, or very low income in 2013 and that about half of the housing need in the 2014-2028 period will derive from households in these categories. Housing that is affordable to these households will generally be existing housing.

While the housing needs analysis focuses on housing that will be built in the future, many households in Bend (as in other Oregon cities) will be able to afford existing housing and newly built housing will be too expensive. In most cities, the stock of housing affordable to low-income households increases through the addition of new subsidized units, smaller market rate units, and older market rate units that become more affordable over time. Most new market rate development is affordable to moderate and high income households. Through the market filtering process, these stocks become affordable to lower-income households over time, as the housing stock ages.[77]

[77] Based on analysis presented in the ECONorthwest report "Seattle Housing Affordability Policy Framework and Recommendations," March 2015.

Table 19. Estimate of needed dwelling units by income level, Bend, 2014-2028

Market Segment by Income	Income Range	New Households 2014-2028		Financially Attainable Products		
		Number of households	Percent of Households	Owner-occupied	Renter-occupied	
High (120% or more of MFI)	$71,640 or more	4,809	35%	All housing types; higher prices	All housing types; higher prices	↑
Upper Middle (80%-120% of MFI)	$71,640 to $47,760	2,091	15%	All housing types; lower values	All housing types; lower values	Primarily New Housing
Lower Middle (50%-80% of MFI)	$47,760 to $29,850	2,181	16%	Manufactured on lots; single-family attached; duplexes	Single-family attached; detatched; manufactured on lots; apartments	Primarily Existing Housing
Lower (30%-50% of less of MFI)	$29,850 to $17,910	2,295	17%	Manufactured in parks	Apartments; manufactured in parks; duplexes	
Very Low (Less than 30% of MFI)	Less than $17,910	2,393	17%	None	Apartments; new and used government assisted housing	↓

Source: Analysis by ECONorthwest;
Number of households by income range from the 2011-2013 American Community Survey, Table B19001
Income range based on HUD's 2013 Median Family Income of $59,700 for the Bend MSA

Additional Residential Housing Needs

This section presents estimates of residential land needs for: (1) second homes; (2) persons in group quarters; (3) government assisted housing, and; (4) manufactured housing.

Second Homes

The 2008 Housing Needs Analysis identified a land need of 500 acres for second homes.[78] 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

[78] The memorandum titled *Rationale for Second Homes Land Absorption Estimate*, April 24, 2008, documented the analysis for second homes.

> 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."

Second homes can be any type of housing, such as single-family detached housing, townhouses, or condominiums in a multifamily structure. The mix of housing types for second homes is similar to the mix of housing for needed units, with 55% of secondary housing in single-family detached, 10% in single-family attached, and 35% in multifamily housing types[79].

Persons in Group Quarters

The forecast of new housing (Table 6) assumes that the percentage of persons in group quarters in Bend would remain the same as reported in the 2000 Census (2.3%), resulting in 886 persons who would require group housing for the 2008-2028 period. People in group quarters will need housing, beyond the forecast for new housing (Table 6). This housing will be located in group quarters, such as assisted living facilities, nursing homes, or jails and will require land.

For the purposes of determining land needs, we will assume that group quarters are similar to multifamily housing with a similar amount of space per individual. In 2000, Bend had an average of 1.92 persons per household in multifamily dwellings.[80] Based on this analysis, Bend will need the equivalent of 461 additional multifamily units to provide adequate capacity for group quarters.

Government assisted housing

ORS 197.303 requires cities to plan for government-assisted housing. Government-subsidies can apply to all housing types (e.g., single family detached, apartments, etc.). Bend allows development of government-assisted housing in all residential plan designations, with the same development standards for market-rate housing. This analysis assumes that Bend will continue to allow government housing in all of its residential plan designations. Because government assisted housing is similar in character to other housing (with the exception the subsidies), it is not necessary to develop separate estimates of land needed for government-assisted housing.

Manufactured housing

ORS 197.303 also requires cities to plan for manufactured housing on lots and manufactured housing in parks.

Bend allows manufactured housing on lots as a permitted use in the following zones: Urban Area Reserve (UAR10, Suburban Low Density Residential (SR 2 ½), Low Density Residential (RL), Standard Density Residential (RS), Medium-10 Density Residential (RM-10), and Medium

[79] See meeting packet for January 26, 2015 Residential TAC meeting – http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=20303.

[80] 2000 Decennial Census

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Density Residential (RM)[81]. These zones allow for a range of densities, from 1 to 2.5 dwelling units per gross acre in SR 2 ½ to 7.3 to 21.7 dwelling units per gross acre in in RM. As a result, Bend is not required to estimate the need for manufactured dwellings on individual lots per OAR 660-024-0040(8)(c).

OAR 197.480(4) requires cities to inventory the mobile home or manufactured dwelling parks sited in areas planned and zoned or generally used for commercial, industrial or high density residential development. Bend allows manufactured home parks in Medium-10 Density Residential (RM-10), and Medium Density Residential (RM), and the High Density Residential (RH) zones. According to the Oregon Housing and Community Services' Manufactured Dwelling Park Directory,[82] Bend has 12 manufactured home parks with 1,349 spaces and 27 vacant spaces (Table 16). These parks are either located within the city or adjacent to it.

ORS 197.480(2) requires Bend to project need for mobile home or manufactured dwelling parks based on: (1) population projections, (2) household income levels, (3) housing market trends, and (4) an inventory of manufactured dwelling parks sited in areas planned and zoned or generally used for commercial, industrial or high density residential.

- Table 18 shows that the Bend planning area will need another 16,681 dwelling units over the 2008 to 2028 period to house the forecasted growth in population of 38,512 new people. Between 2014 and 2028, an additional 13,769 dwelling units will be needed to house the forecasted growth in population.
- Analysis of housing affordability (in Table 15) shows that about 34% of Bend's existing households are low income, earning 50% or less of the region's median family income. One type of housing affordable to these households is manufactured housing.
- Manufactured housing in parks accounts for about 4% (about 1,349 dwelling units) of Bend's current housing stock.
- National, state, and regional trends during the 2000 to 2010 period showed that manufactured housing parks were closing, rather than being created. For example, between 2003 and 2010, Oregon had a statewide decrease of 25% in the number of manufactured home parks. Before the housing market crash in 2008, there were discussions in Bend about the potential closing of several manufactured home parks.
- The longer-term trend for closing manufactured home parks is the result of manufactured home park landowners selling or redeveloping their land for uses with higher rates of return, rather than lack of demand for spaces in manufactured home parks. Manufactured home parks contribute to the supply of lower-cost affordable housing options, especially for affordable homeownership. The concurrent trends of manufactured home parks closing and no development new of manufactured home parks will exacerbate the shortage of affordable manufactured home park spaces. . Without some form of public investment to encourage continued operation of existing

[81] See Bend Development Code (BDC) Table 2.1.200 – Permitted Land Uses

[82] Oregon Housing and Community Services, Oregon Manufactured Dwelling Park Directory, http://o.hcs.state.or.us/MDPCRParks/ParkDirQuery.jsp

manufactured home parks and construction of new manufactured home parks, this shortage will continue.

The households most likely to live in manufactured homes in parks (shown in Table 15) are those with incomes between $18,000 and $30,000 (30% to 50% of median family income).

Assuming that about 5% of Bend's new single-family detached households (13,769 new dwellings) choose to live in manufactured housing parks, the City may need about 690 new manufactured home spaces. The City allows development of manufactured housing parks in residential zones, except the RH. This need for land for manufactured home parks is included in the projection of need for land for single-family detached housing.

However, development of a new manufactured home park in Bend over the planning period may be unlikely, given the trend towards closing manufactured home parks. If manufactured home parks are not developed in Bend in the future, demand will increase for other types of smaller, affordable owner-occupied housing, such as affordable cottage housing or single-family attached housing.

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CHAPTER 5. RESIDENTIAL LAND SUFFICIENCY AND CONCLUSIONS

This chapter provides a brief summary of the implications of the housing needs analysis for Bend. This chapter begins with an estimate of Bend's residential capacity. This chapter includes a general comparison of land supply and demand for housing, including second homes and group quarters.

Residential Land Capacity

Pre-policy Base Case Capacity

The *Bend Urbanization Report* provides an explanation of the assumptions used in the Base Case analysis. Table 20 presents the "Base Case" housing capacity estimate before changes to housing policies (referred to as land use efficiency measures) are applied. Refer to the *Bend Urbanization Report* for more detail on the analysis of residential land capacity.

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. The Base Case represents the current UGB's remaining capacity **prior** to applying assumptions regarding new residential efficiency measures. It does not identify housing need; rather, it provides an estimate of how much of the identified need can be met within the current UGB if no policy changes are made. The Base Case generally assumes development builds out according to current plan designations and uses the results of the *Bend Buildable Lands Inventory Report*, applying the historical densities observed for development over the 1998-2008 period (Table 4).

Table 20. Base Case Housing Capacity

Housing Type	New Housing Units	Mix Based on Capacity
Single Family Detached	5,870	70%
Single Family Attached	440	5%
Multi-Family	2,090	25%
Total	**8,400**	**100%**

Source: Draft *Bend Urbanization Report*

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Residential Land Sufficiency

Table 21 compares the Base Case capacity with demand for housing. Table 21 shows:

- Capacity of Bend's residential land under the Base Case scenario (Table 20)
- Housing demand for the following types of housing:
  - Needed housing for 2014-2028 (Table 18)
  - Second homes need for 3,002 dwellings in the needed housing mix of 55% single-family detached, 10% single-family attached, and 35% multifamily.
  - Group quarters, all of which is assumed to be accommodated through additional equivalent multifamily units
- Comparison of the Base Case capacity and the total demand.

Under the Base Case capacity estimate, Bend has a deficit for land to accommodate 8,208 new dwelling units. Each category of housing shows a deficit in the Base Case capacity estimate.

Table 21. Base Case Residential Land Sufficiency, Bend, 2014-2028

	Capacity (Base Case)	Housing Demand				Comparison (Capacity *minus* Total Demand)
		Needed Housing 2014-2028	Second Homes	Group Quarters	Total Demand	
Single Family Detached	5,870	7,573	1,651		9,224	-3,354
Single Family Attached	440	1,377	300		1,677	-1,237
Multi-Family	2,090	4,819	1,051	461	6,331	-4,241
Total	**8,400**	**13,769**	**3,002**	**461**	**17,232**	**-8,832**

Source: ECONorthwest and Angelo Planning Group

Employment Land Needs in Residential Areas

The *Bend Urbanization Report* provides details about employment land needs in residential areas. In the Base Case, approximately, 70 jobs are expected to be accommodated in the following zones: RS, RM, and RH. See the *Bend Urbanization Report* for more information.

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Conclusions

The preliminary conclusions of the housing needs analysis are:

- **Bend's current policies result in a housing mix (in the Base Case scenario) that is not consistent with needed mix.** Bend's land base, under current policies, would result in a mix of housing similar to the historical mix, with 70% of new housing in single-family housing types. The discussions of land use efficiency measures and policy changes that Bend adopts will result in a change in the capacity of Bend's residential land base.
- **The densities in the Base Case scenario may not be Bend's needed densities.** The needed densities will be determined based on the land use efficiency measures and policy changes that Bend adopts to better meet the identified need for additional development of more affordable housing, such as townhouses and multifamily housing.

Discussion of land use efficiency measures and narrowing of preferred growth scenarios will result in changes to the estimate of capacity for Bend's residential land base.

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APPENDIX A. RESEARCH ABOUT DEMOGRAPHIC CHANGES AND IMPLICATIONS FOR FUTURE HOUSING MIX

This appendix provides greater detail on the research conducted on the demographic trends that are summarized in the Table 7 through Table 9 in the HNA. This appendix is extracted from the memorandum to the Residential Lands Technical Advisory Committee called "Demographic Characteristics and Trends that will Affect Housing Demand in Bend for the 2008-2028 period" and dated July 23, 2014.

Key Findings by Topic

Aging Boomers

Question: Are aging Baby Boomers downsizing or staying put?

- **Some are downsizing.** "Thirty-two percent of Americans have moved in the past five years. More than half of the gen Yers report moving, and 31 percent of gen Xers have moved. Baby boomers and the oldest Americans are the least likely to have moved…Baby boomers and war babies/members of the silent generation are the most likely to have downsized in their most recent move. In fact, 50 percent of the oldest Americans report that their new home is smaller than their old one. One-third of baby boomers report moving into a smaller home, and 44 percent say they have moved into a larger home."[83]

Table A-22. Recent Movers Change in Home Size

	Recently moved?		Recent Change in Home Size			Expected Homeownership Status	
	Yes	No	Larger	Smaller	Same	Own	Rent
All Adults	32%	**67%**	**48%**	**27%**	**25%**	**73%**	**25%**
Gen Y	53%	47%	48%	25%	27%	69%	31%
Gen X	31%	69%	59%	20%	20%	81%	16%
Baby Boomers	20%	80%	44%	33%	22%	79%	20%
War babies/silent generation	19%	80%	24%	50%	25%	55%	36%

Source: ULI America in 2013, Leland Consulting Group

- **Preference for staying put increases with age.** The AARP conducted a housing preference survey of people age 45 or older and found that 73 percent of them strongly agreed with the statement, *"what I'd really like to do is stay in my current residence for as long as possible".* This preference increases with age. Seventy-eight percent of the respondents over 65 strongly agreed with the statement, whereas only 72 percent of those 50-64 and 60 percent of those age 45-49 strongly agreed with the statement.[84]

[83] American in 2013 Focus on Housing and Community, Urban Land Institute

[84] "Home and Community Preferences of the 45+ Population" November 2010, AARP, Keenan Teresa A.

"The aging of the population poses a different policy challenge. Most seniors prefer to age in place. While many of these households are currently well housed, their needs will change over time. Meeting those needs will require modifications to existing homes, the expansion of transportation networks and supportive services, and additions to the housing stock aimed specifically at the senior population. Many older Americans are also heading into their retirement years with little financial cushion and may find it difficult to find suitable housing that fits within their budgets. Expanding the range of housing options available to the country's growing senior population will require concerted efforts from both the public and private sectors."[85]

"Despite their shrinking households and declining labor force participation, Boomers do not appear to be altering their housing consumption by abandoning their detached single-family homes…In fact, contrary to the downsizing perception, the percent of Baby Boomers residing in single-family detached homes was at least as high in 2012 as at any time since the onset of the housing crisis. Even the oldest members of the Boomer generation, who have largely exited the childrearing stage and begun to retire in large numbers, show no major shift away from single-family residency….One likely mobility constraint is the substantial decline in Boomers' home values during the housing bust. Between 2006 and 2012, the average value of an owner-occupied single-family detached home with a Boomer householder declined by 13 percent."[86]

- **Being near friends, family, and social organizations grows increasingly important with age.** An AARP Housing Preference survey of householders 45 years and older, found that "Roughly two-thirds of respondents agreed that they want to stay in their home because *I like what my community has to offer me."* In contrast, roughly one-quarter agreed with the statement that they want to stay in their home because *"I cannot afford to move."…*When asked about seven different community aspects and the level of importance they have for them, two-thirds of respondents said that being near friends/and or family and being near where one wants to go (i.e., grocery stores, doctor's offices, the library) is *extremely* or *very important* to them. Roughly half noted that being near church or social organizations or being somewhere where it's easy to walk are *extremely* or *very important* to them, while somewhat fewer said the same thing about being near good schools or being near work. Only about one-fifth of respondents report that being near transit (bus or rail) was *extremely* or *very important* to them."[87]

[85] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[86] "Are Aging Baby Boomers Abandoning the Single-Family Nest?" June 12, 2014. Fannie Mae Housing Insights, Volume 4, Issue 3.

[87] "Home and Community Preferences of the 45+ Population," Keenan Teresa A. November 2010, AARP

Table A-23. Importance of Community Aspects for Staying in One's Community

Extremely or Very Important	Age		
	45-49	50-64	65+
Being near friends and/or family	60%	64%	71%
Being near where you want to go	68%	62%	70%
Being near church or social organizations	42%	43%	57%
It's easy to walk	46%	43%	51%
Being near good schools	64%	38%	31%
Being near work	43%	36%	21%
Being near transit	16%	22%	21%

Source: AARP

- **Retiring later.** "To put these trends in perspective, incomes among households under age 35 are back to 1990s levels. The recession had an even bigger impact on households between the ages of 35 and 54, whose incomes are now lower than those of similarly aged households in 1971. Now in what are typically the peak earning years, 45–54 year-olds have instead seen their real median incomes fall 6.0 percent from what they made ten years earlier (when they were aged 35–44). Over the next ten years, these households will be approaching typical retirement age, but the loss of income at such a critical point in their careers will make it difficult for many to save enough to stop working."[88]
- **Affordability for seniors.** "Affordability is a serious problem for seniors, especially for renters. According to a U.S. Department of Housing and Urban Development (HUD) report to Congress earlier this year, 1.33 million elderly renters (where the householder or spouse is age 62 or over, with no children under 18 present) had "worst case" housing needs in 2009. This meant that they earned less than half their metropolitan area's median income, received no government housing assistance and either paid more than half their income for rent, lived in severely inadequate housing, or both. Compared to 2007, the number of older renters in this category had increased by 120,000 (10 percent) – a change that the HUD report attributes to fallout from the foreclosure crisis and recession, as shrinking incomes drove increased competition for already scarce affordable housing. Seventy percent of senior renters spend at least 30 percent of their income on housing costs. Senior homeowners are not immune from affordability problems either: about three in 10 senior homeowners spend at least 30 percent of their income on housing and 17 percent pay at least half their income. Even seniors who own their houses free and clear face rising energy costs and, in some locations, rising property taxes."[89]
- **Housing released by seniors.** "Some seniors occupy newly constructed housing (so the total release of housing exceeds the net release). In 2009, for example, housing built since 2000 accounted for about seven percent of owner-occupied dwellings occupied by seniors

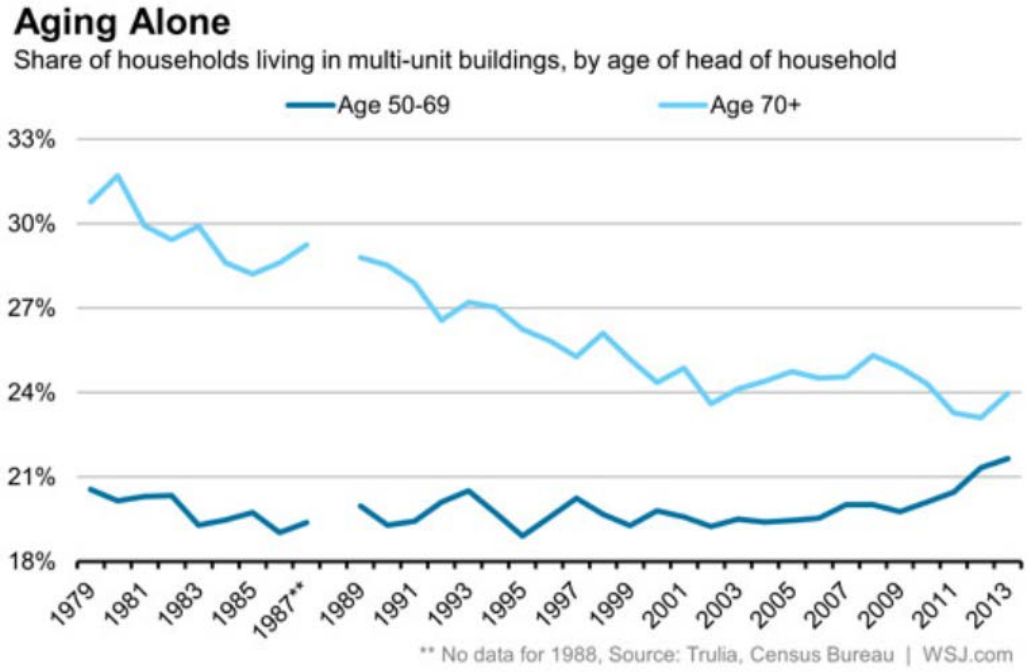
[88] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[89] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

and 10 percent of rentals. Seniors' consumption of new housing may rise in the next two decades as Baby Boomers – whose wealth and income are higher than that of today's retirees and who are entering retirement in vastly larger numbers – seek new options to downsize, accommodate disabilities or live in different types of neighborhoods. Just as demand created by Baby Boomers spurred new apartment construction in the 1970s, the sheer size of the Baby Boom generation could cause a dramatic increase in the construction of senior-accessible housing over the coming decades. Baby Boomers' ability to move into new housing, however, will depend on where, when and for how much they will seek to sell their current residences…..Despite potential increases in new construction, most of the houses that seniors will release in coming years were built when energy was inexpensive, nuclear families were the rule, incomes were increasing for most Americans, and mortgages were generally predictable and easy to obtain. Most observers expect the next 20 to 30 years to depart from this historic picture, with more expensive energy, growing diversity in race, ethnicity and in household structure, and more intense international economic competition. All of these factors will likely reduce demand for large single-family homes on large lots far away from established centers of employment and entertainment."[90]

- **Fewer elderly living alone in multifamily buildings.** The percent of people 70 years or older that head households in multifamily buildings has been in decline since 1979.[91]

Table A-24. Aging Alone



Source: The Wall Street Journal, Trulia, Census Bureau

[90] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[91] "Baby Boomers Aren't (Yet) Downsizing in Droves", Nick Timiraos, June 27, 2014, The Wall Street Journal

Delayed Millennial Household Formation

Are Millennials putting off housing formation as a short-term response to the recession or are there other underlying factors that will impact their housing decisions much farther into the future?

- **Student debt.** "For today's younger households, student loan debt may make the transition to homeownership more difficult. According to the Federal Reserve Bank of New York, the number of young adults under age 30 with student loan debt outstanding increased by 39 percent between the start of 2005 and the end of 2012, with the average amount rising from $13,300 to $21,400. However, concerns over rising student loan debt often overlook the fact that the trend also affects older households. The increase was even larger among adults in their 30s, with the number of borrowers up 76 percent and average debt climbing from $20,000 to $29,400. Moreover, of the $600 billion increase in student loans outstanding in 2005–12, fully 38 percent was among households over age 40. Since many of these older households already own homes, the sharp rise in student loan debt could affect their ability to meet their mortgage obligations."[92]
- **Diversity and household formation.** "To estimate the magnitude of the demand that Millennials may (or may not) bring to housing markets in the next 20 years, we developed three scenarios. We began with the 1990, 2000 and 2010 Census results and the Census Bureau's national population projections assuming a constant net rate of immigration at 975,000 people per year. Using the observed and projected population series, we computed national rates of household formation and homeownership for people grouped by age cohort (10-year groups starting at age 15) and by race/ethnicity (white non-Hispanic, black non-Hispanic, other non-Hispanic and Hispanic)…The range of estimates in these scenarios can be attributed to different rates of household formation for Millennials. Under the low scenario, people between 15 and 34 years old in 2010 (a span that includes Millennials plus five years of the Baby Bust generation) would form 15.6 million new households between 2010 and 2020. Other cohorts would account for the formation of an additional 5.4 million households over the same time period. The medium scenario would result in 17.1 million new Echo Boomer households and 6.1 million other households. The high scenario, finally, yields 18.8 million new Echo Boomer households and 6.7 million new households from other generations. Because changes in the number of older households are less sensitive to differences in economic assumptions, the decline in older households is more consistent across the three scenarios, ranging from 10.6 million fewer old households in the high scenario to 11.6 million fewer old households in the low scenario."[93]
- **Education.** "Compared to previous generations at the same age, Millennials are more likely to have completed high school, and more than half (54 percent) have at least some college education, compared to 49 percent of people in the Baby Bust generation and 36 percent of Baby Boomers when they were 18 to 28 years old. In terms of educational achievement, women of the Echo Boom generation have vaulted far above women of previous generations; in fact, among Millennials, more women than men and more women than in

[92] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[93] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

any previous generation have attained a college education…The growth in female educational attainment may also portend higher levels of household formation if it results in greater gender equity and gives women more financial independence. Other factors, however, could inhibit household formation and homeownership. Young adults carry high levels of credit card and student loan debt; even young people who already had formed households had higher debt loads in 2009 than people of the same age 10 years earlier.31 Rates of marriage declined in the 2000s from 8.2 per thousand to 6.8 per thousand.32 Finally, while all households lost wealth during the recession, average household wealth fell well below $10,000 for Hispanic and black households. Considering the diversity of the young population, this reduction in wealth among older adults will reduce the purchasing power of a significant fraction of young people who can no longer count on their parents' housing wealth."[94]

- **Household formation.** "At a basic level, changes in the number of adults and the rates at which adults head independent households determine household growth. On the plus side, the number of adults aged 18 and older rose by 18.1 million from 2005 to 2012 and fully 2.4 million in the past year alone. The echo-boom generation (born after 1985) fueled much of this growth, helping to boost the number of adults in their mid-20s—the group most likely to form new households. But while the young adult population has been growing, the rate at which members of this age group head their own households has declined. As a result, household growth has not kept pace with population growth. Going forward, though, even if today's low household formation rates persist, the aging of the large echo-boom cohort into their 30s will raise household headship rates because of lifecycle effects. Indeed, one out of every two 30–34 year-olds heads an independent household, compared with just one in four 20–24 year-olds. Since household headship rates continue to rise (albeit more slowly) through older adulthood, the rates for the Millennials will likely increase for years to come."[95]
- **Mobility and homeownership.** "While mobility rates have fallen for nearly all household types, the decline was particularly steep for homeowners that have mortgages. Mobility rates for this group fell from 7.1 percent in 2007 to only 4.9 percent in 2011. The reasons for this short-term drop are numerous and include the lock-in effect of home price declines, falling incomes, fewer new employment opportunities, and tightened credit standards making it more difficult to qualify for a new mortgage Mobility rates are highest among renters and young adults. In 2011, fully 28.8 percent of renter households changed residences, compared with just 4.4 percent of homeowners. Young householders are also more mobile, with rates at 52.7 percent for those under age 25—significantly higher than the 19.7 percent for household heads in the next older age group…The oldest Millennials are just beginning to swell the ranks of young adult movers. Having more young adults in the population may thus change the composition of housing demand in the coming years, given that younger households are more likely than older households to move into rentals (82

[94] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[95] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

percent vs. 67 percent) and less likely to move into single-family homes (42 percent vs. 50 percent)."[96]

- **Gen Y has more urban community characteristic preferences.** "Gen Y expresses preferences that differ from those of the other generations in interesting ways. Gen Y is the least likely to value neighborhood safety or space between neighbors, but the most likely to want high-quality public schools, a short distance to work or school, walkability, and proximity to amenities like shopping and transit...Among gen Yers, 54 percent—representing nearly 39 million people—would trade a larger home for a shorter commute. Among all generations, gen Y is the most attracted to living in a neighborhood close to a mix of shops, restaurants, and offices. Sixty-two percent of gen Yers (representing more than 44 million people) prefer this type of mixed-use community over one where shops, restaurants, and offices are farther away. Gen Y is also the only age cohort that shows a preference for living in a neighborhood where there is a mix of housing types. Fifty-nine percent of gen Yers—representing more than 42 million people—would like to live in a community where there is a range of housing. Similarly, 52 percent of gen Yers (representing more than 37 million people) would like to live in a community where there is a range of incomes."[97]

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[96] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[97] American in 2013 Focus on Housing and Community, Urban Land Institute

Table A-25. Community Characteristics

Importance of Community Characteristics Percentage ranking each characteristic 6 or higher in importance on a scale of 1 to 10	Homeownership status		By Generation				
	Owners	Renters	All Adults	Gen Y	Gen X	Baby boomers	War babies/ silent generation
Neighborhood safety	94%	88%	**92%**	88%	97%	92%	92%
Quality of local public schools	77%	83%	**79%**	87%	82%	74%	68%
Space between neighbors	75%	68%	**72%**	69%	79%	70%	70%
Short distance to work or school	66%	76%	**71%**	82%	71%	67%	57%
Distance to medical care	68%	65%	**71%**	73%	63%	72%	78%
Walkability	75%	79%	**70%**	76%	67%	67%	69%
Distance to shopping/entertainment	63%	71%	**66%**	71%	58%	67%	69%
Distance to family/friends	59%	70%	**63%**	69%	57%	60%	66%
Distance to parks/recreational areas	63%	64%	**64%**	68%	62%	63%	60%
Convenience of public transportation	44%	67%	**52%**	57%	45%	50%	56%

Source: Urban Land Institute

Housing choices of Hispanic and Latino households

Does the growing Hispanic population have different housing needs/preferences than the average household and how will this impact Bend's housing supply in the future?

- **Growth in home ownership.** "U.S. Census data over the past 12 years shows that despite suffering significant losses during the recent foreclosure crisis, Hispanics have achieved homeownership gains in all but two of those years. During the same 12-year period, the number of Hispanic homeowners grew from 4.24 million in 2000 to 6.69 million in 2012, a remarkable increase of 58 percent at a time when the rest of the U.S. population saw a net increase of only 5 percent. In 2012, home prices increased significantly in most markets across the country for the first time in half a decade. Hispanic household growth and home purchases were arguably the most important drivers of the housing recover."[98]
- **Recession and home value drop.** "Between 1995 and 2004, rates of homeownership among blacks rose by seven percentage points; among Hispanics, homeownership grew even more quickly – from about 40 percent in 1993 to 50 percent in 2005–2006. Between 2004–2006 and 2010, however, homeownership rates dropped sharply, and more so for Hispanic and black households than for white non-Hispanics. The overall homeownership rate of 65.1 percent in April 2010 was 1.1 percentage points lower than 10 years earlier. While the housing crisis has hurt people of all races and ethnicities, it has been devastating for many Hispanic and black families, reducing their median wealth by one half to two-thirds

and significantly increasing the number of households with negative net worth."[99]

"The recession-induced drop in home values has been especially damaging to minority and low-income households. On average, real home values for Hispanic owners plummeted nearly $100,000 (35 percent) between 2007 and 2010, while the decline for black owners was nearly $69,000 (31 percent). By comparison, average values for white homeowners fell just 15 percent over this period…Moreover, white homeowners still had $166,800 in home equity on average in 2010—about twice the amount that blacks and Hispanics held…Over the next decade, minorities will make up an increasing share of young households and represent an important source of demand for both rental housing and starter homes. While their housing aspirations are similar to those of whites, minorities face greater constraints in pursuing those goals because of their lower incomes and wealth."[100]

- **Hispanic population is younger.** "Hispanics are also a much younger demographic averaging a full 10 years younger than the overall population…Every month 50,000 young Hispanics reach the age of 18**…**With a median age of 27, the Hispanic population is 10 years younger than the total U.S. median age of 37 years. In particular, Hispanics are heavily represented in the 26 to 46 age range involved in most home sales."[101]
- **Hispanic households are larger.** Hispanic households are typically larger than the households of non-Hispanic Whites….Sixty-one percent of all Hispanic households consist of a married couple with children younger than 18."[102]
- **Hispanics believe that home ownership is a good investment.** "Despite being hit hard by the housing market downturn, three-in-four (75%) Latinos agree that buying a home is the best long-term investment a person can make in the U.S. This compares with 81% of the general population who say the same….Fully 83% of Latino homeowners say owing a home is the best long-term investment, while 70% of renters say the same. All of these demographic and cultural characteristics make Hispanics ideal homebuyers in the housing market. In fact, Hispanics are expected to comprise half of all new homebuyers by 2020"[103]
- **First-time homebuyers.** "Forward thinking companies are already changing their strategy to reflect this shift. Case in point: D.R. Horton, the nation's largest residential homebuilder, achieved huge profits in 2012 by constructing low-priced homes. Rather than focus on the move-up market, Horton cornered the entry-level market—the market most heavily represented by minority Hispanic and Asian first-time homebuyers…By virtue of their

[99] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[100] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[101] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[102] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[103] Pew Research Hispanic Trends Project, "III. Latinos and Homeownership", January 26, 2012.

population growth, rate of household formation and purchasing power, Hispanics are expected to drive demand for small starter homes in vibrant, high-density communities."[104]

- **Multigenerational.** "Indeed, as the Hispanic share of the U.S. population continues to grow, a substantial increase in demand is being created for building new homes that meet the structural housing needs of large and multi-generational Hispanic families…Some builders are already creating products that meet the shifting demand and needs of these consumer segments who want home with enough space to accommodate parents, adult children or tenants. These new floor plans feature a second, self-contained unit with its own entrance, bathroom and kitchenette—a development that meets both the short- and long-term needs of many Hispanic households."[105]
- **Demand for smaller units.** "Hispanics, in particular, will stimulate demand for condominiums, smaller starter homes, first trade-up homes and the estimated 11 million housing units that will become available between 2010 and 2020 as baby boomers retire."[106]
- **Preference for walkable neighborhoods.** According to the Pew Research Center, Hispanics prefer to live in neighborhoods where houses are smaller and closer together, but schools/stores are within walking distance by 60 percent compared to 44 percent of non-Hispanic Whites.[107]

Opportunities to provide housing development through infill and redevelopment

Are Bend residents really willing to trade single-family homes on larger lots for urban walkable neighborhoods?

- **Shorter commute for a smaller home.** According to the ULI, "among older Americans, many of whom have spent substantial time in the workforce and may continue working beyond the traditional retirement age, the preference for a shorter commute is very strong, even if it means living in a smaller home. Seventy-two percent of baby boomers, or nearly 53 million people, would make that tradeoff. Similarly, 65 percent of war babies and members of the silent generation—nearly 23 million people—would trade a larger home for a shorter commute. Almost 51 percent of these older Americans (representing 18 million people) also show a slight preference for living in areas close to a mix of shops, restaurants, and offices, reinforcing their preference, particularly as they age, for walkable communities near amenities."[108]

[104] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[105] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[106] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[107] 2014 Political Polarization Survey, Table 3.1 Preferred Community, Pew Research Center for the People and the Press, June 12, 2014

[108] American in 2013 Focus on Housing and Community, Urban Land Institute

Table A-26. Community Attribute Preferences

Community Attribute Preferences	Homeownership status		By Generation				
Percentage preferring listed attribute	Owners	Renters	All Adults	Gen Y	Gen X	Baby boomers	War babies/ silent generation
Shorter commute/smaller home	63%	56%	**61%**	54%	54%	72%	65%
Close to mix of shops, restaurants, and offices	49%	60%	**53%**	62%	50%	49%	51%
Mix of incomes	50%	53%	**52%**	52%	53%	53%	47%
Public transportation options	44%	62%	**51%**	55%	45%	52%	48%
Mix of homes	43%	57%	**48%**	59%	47%	42%	44%
Percentage choosing three or more of these compact development attributes	-	-	***54%***	*59%*	*49%*	*57%*	*51%*

Source: Urban Land Institute

- **Likelihood of moving and anticipated new housing.** "Many Americans report that they are likely to change homes during the next five years. *"America in 2013"* found that 42 percent of Americans—representing 98 million people—are likely movers. Making up that 42 percent are 25 percent who are very likely to move and 17 percent who are somewhat likely. Gen Yers are the most likely to move: 63 percent say they expect to move during the next five years. America's oldest generations are the least likely to move. Lower-income people are more likely to move than those with higher incomes. Fifty-one percent of the people making less than $25,000 report that they are likely to move in the next five years, compared with 43 percent of those making more than $75,000. Most movers—73 percent—believe they will own the primary residence they move into; one-quarter expect to rent. Gen Yers and the oldest Americans are the most likely to expect to rent their new home, and gen Xers are the least likely to expect to rent. Just 20 percent of the baby boomers expect to rent…Most movers in Generation X—87 percent—expect to live in a single-family home. For the oldest generations, 30 percent of movers expect to move to apartments or compact homes like townhouses or rowhouses."[109]

[109] *American in 2013 Focus on Housing and Community, Urban Land Institute*

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Table A-27. Recently Moved and Change in Home Size

	Recently moved?		Recent Change in Home Size		
	Yes	No	Larger	Smaller	Same
All Adults	32%	**67%**	**48%**	**27%**	**25%**
Gen Y	53%	47%	48%	25%	27%
Gen X	31%	69%	59%	20%	20%
Baby Boomers	20%	80%	44%	33%	22%
War babies/silent generation	19%	80%	24%	50%	25%

Source: Urban Land Institute

Table A-28. Likelihood of Moving and Expected Type of New Home

	Likely to Move		Expected Homeownership Status		Movers' Expected Type of Home			
	Likely to move	Not likely to move	Expect to own	Expect to rent	Single-family	Apartment	Duplex, townhouse, rowhouse	Manufactured/ mobile home
All Adults	42%	**57%**	**73%**	**25%**	**65%**	**15%**	**14%**	**2%**
Gen Y	63%	36%	69%	31%	60%	21%	17%	1%
Gen X	41%	59%	81%	16%	87%	6%	4%	1%
Baby Boomers	31%	68%	79%	20%	65%	11%	16%	6%
War babies/silent generation	22%	76%	55%	36%	58%	17%	13%	0%

Source: Urban Land Institute

- **Community preference.** "Americans prefer walkable communities, but only to a point. In most comparisons tested, a majority prefers the community where it is easier to walk or the commute is shorter. But when comparing a detached single-family house to an apartment or townhouse, the detached home wins out—even with a longer commute and more driving.

    - A majority prefers houses with small yards and easy walks to schools, stores and restaurants over houses with large yards but where you have to drive to get to schools, stores and restaurants (55 percent to 40 percent).

    - An even larger majority prefers houses with smaller yards but a shorter commute to work over houses with larger yards but a longer commute to work (57 percent to 36 percent).

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- A neighborhood with a mix of houses, stores and businesses that are easy to walk to is preferred over a neighborhood with houses only that requires driving to stores and businesses (60 percent to 35 percent).
- Nevertheless, when given a choice between a detached, single family house that requires driving to shops and a longer commute to work and an apartment or condominium with an easy walk to shops and a shorter commute to work, a strong majority prefers the single family home –even with the longer commute (57 percent to 39 percent)."[110]

Table A-29. Current Community Versus Preferred Community

	Where You Live Now	Where you Prefer to Live
City -Near mix of offices, apartments, and shops	16%	15%
City - Mostly residential neighborhood	19%	13%
Suburban neighborhood with a mix of houses, shops, and businesses	27%	30%
Suburban neighborhood with houses only	15%	11%
Small Town	11%	14%
Rural Area	11%	16%

Source: National Association of Realtors, 2013 Survey

- **Housing demand will shift.** According to the Director of the Metropolitan Research Center at the University of Utah, Arthur Nelson, housing demand is shifting from large lot homes to small lot, townhomes and attached housing and the current supply of housing will not meet future needs.[111]

[110] National Association of Realtors, National Community Preference Survey, 2013

[111] "Reshaping America's Built Environment", Arthur C. Nelson

Table A-30. US Housing Demand Shift 2010-2030

House Type	2010 Supply 2030 Demand	2030 Demand	Difference
Attached/Other	26%	34%	8%
Townhome	6%	18%	12%
Small Lot	11%	50%	39%
Large Lot	69%	34%	-35%

Source: Arthur C. Nelson, Presidential Professor & Director, Metropolitan Research Center, University of Utah

- **Political influence on housing preference.** "Given the choice, three-quarters (75%) of consistent conservatives say they would opt to live in a community where "the houses are larger and farther apart, but schools, stores and restaurants are several miles away," and just 22% say they'd choose to live where "the houses are smaller and closer to each other, but schools, stores and restaurants are within walking distance." The preferences of consistent liberals are almost the exact inverse, with 77% preferring the smaller house closer to amenities, and just 21% opting for more square footage farther away."[112]

- **Fewer households with children.** "Currently, only one third of U.S. households have children, and over the next two decades only 12% of new households being formed will have children. Childfree households are prime candidates for locating in denser areas of cities, within walking range of commercial services and entertainment. Households with two working parents are also increasingly seeking to live in urban areas to simplify their lives, taking advantage of child-care services and after-school educational opportunities available in urban areas."[113]

- **Recent movers prefer walkable communities.** "There is a wider divide among those who have moved in the last three years or are planning to move in the next three years. Recent movers prefer the walkable community by 20 points (58 to 38 percent), almost identical to the walkable community preference expressed by those who plan to move in the next three years (+18 points, 57 to 39 percent)."[114]

[112] Pew Research, Center for the People and the Press, Political Polarization in the American Public, Section 3: Political Polarization and Personal Life. June 12, 2014

[113] Business Performance in Walkable Shopping Areas, November 2013, Robert Wood Johnson Foundation.

[114] National Association of Realtors, National Community Preference Survey, 2013

Sources

The following list provides examples of key articles used in the research for this memorandum.

American Association of Retired Persons (AARP)

Multiple studies show that people over age 45 prefer to stay in their home or community as long as possible, including multiple surveys by AARP.

The AARP survey *Home and Community Preferences of the 45+ Population* shows that 85% of respondents want to stay in their current residence and community as long as possible.

The AARP survey *Approaching 65: A Survey of Baby Boomers Turning 65 Years Old* of people 65 years old shows that about 15% of responding households are planning to downsize to smaller homes over the next few years.

http://www.aarp.org/research/surveys

Bipartisan Policy Center

The *Demographic Challenges and Opportunities for U.S. Housing Markets* report discusses the housing implications of demographic trends and change including the growing senior population, the Millennials, the setbacks suffered by minorities during the recession, and the increasing demand for rental housing.

http://www.urban.org/UploadedPDF/412520-Demographic-Challenges-and-Opportunities-for-US-Housing-Markets.pdf

Fannie Mae

The report *Are Aging Baby Boomers Abandoning the Single-Family Nest?* by Fannie Mae notes that Baby Boomers are becoming empty-nesters, but they have not been giving up single family homes as once expected.

http://www.fanniemae.com/resources/file/research/datanotes/pdf/housing-insights-061214.pdf

Joint Center for Housing Studies of Harvard University

The State of the Nation's Housing is an annual report by Harvard University discussing national demographic trends, the housing recovery from the recession, mortgage markets and the implications for the ownership and rental housing.

http://www.jchs.harvard.edu/research/state_nations_housing

Metropolitan Research Center, University of Utah

Arthur C. Nelson, Presidential Professor & Director of the Metropolitan Research Center at the University of Utah, is well regarded for his research on the changing nature of housing in the US. He frequently posts research and presentations on his findings. The *"Reshaping America's Built Environment"* presentation in particular was referenced in this research.

http://faculty.utah.edu/u0621068-ARTHUR_C_NELSON/bibliography/index.hml

National Association of Hispanic Real Estate Professionals (NAHREP)

The *State of Hispanic Homeownership Report*, delves into the demand and drivers behind Hispanic homeownership.

http://nahrep.org/downloads/state-of-homeownership.pdf

National Association of Realtors (NAR)

The *National Community Preference Survey* asks residents about specific housing preferences. According to their 2013 survey, 60 percent of respondents prefer to live in mixed-use, walkable communities, and are willing to trade a shorter commute for a smaller house.

http://www.realtor.org/reports/nar-2013-community-preference-survey

Pew Research Center

The Pew Research Center is well-known for producing surveys and reports on a variety of topics, one report researched in this effort includes the *Second-Generation Americans: A Portrait of the Adult Children of Immigrants,* which compares first generation immigrants to their children and to the general population.

http://www.pewsocialtrends.org/2013/02/07/second-generation-americans/

The Hispanic Trends Project produced a report *"Latinos and Homeownership"* which looked specifically at the growing Hispanic population and the implications for homeownership, and noted that Hispanics were particularly hard hit during the recession.

http://www.pewhispanic.org/2012/01/26/iii-latinos-and-homeownership/

Another report looks at the correlation between a person's political preferences and housing and community preferences. *Political Polarization in the American Public, Section 3: Political Polarization and Personal Life.* June 12, 2014

http://www.people-press.org/2014/06/12/political-polarization-detailed-tables/

Robert Wood Johnson Foundation

The report, *Business Performance in Walkable Shopping Areas,* quantifies the performance of walkable places compared to suburban locations in the same market area.

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Urban Land Institute (ULI)

The ULI is well known for its expertise on land use issues. Examples of research include *Housing in America: The New Decade,* and the *Generation Y: America's New Housing Wave.* A national survey of Millennials in 2010 showing that: two-thirds of Millennials expect to own their home by 2015, that nearly two-thirds expect to live in a single-family home, one-quarter expects to live in an apartment or condominium. Another report, *America in 2013 Focus on Housing and Community,*

http://uli.org/wp-content/uploads/ULI-Documents/America-in-2013-Compendium_web.pdf

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APPENDIX B. REMAND DIRECTIVES AND STATUTORY REQUIREMENTS

Remand Directives

Note to reviewers: The Findings report will have the definitive version of this table for all remand issues. This version will be updated when the Findings report is revised.

Table B-1 lists the directives to the City from the Remand. Each of the directives are addressed in the housing needs analysis. Other remand directives about land use efficiency measures are addressed in the *Bend Urbanization Report*.

Table B-1. Policy Direction on BLI Issues to Date

HNA Issue	Directives to City on Remand	Where the HNA addresses the issue
Categories of housing used in the Housing Needs Analysis Section 2.3, Pages 26-33	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.[115] 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 area residents. [116]	Table 6
Comply with the analysis required in ORS 197.296, ORS 197.303 Section 2.3, Pages 26-33	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));[117]	Table 6 Table 19

[115] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 31

[116] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 31

[117] Report on Bend and Deschutes County's Amendment to the Bend Urban Growth Boundary, DLCD Order 001775, January 8, 2010, p. 46

HNA Issue	Directives to City on Remand	Where the HNA addresses the issue
Future Housing Needs Section 2.3, Pages 26-33	…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. [118]	Table 19
Adequate supply of buildable lands for affordable housing Section 2.4, Pages 33-36	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).[119]	Table 19
Future housing mix Section 2.4, Pages 33-36	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. 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.[120]	The City is planning for a different housing mix, shown in Table 17.
HNA and Efficiency Measures		

[118] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 32

[119] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 35

[120] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 35-36

HNA Issue	Directives to City on Remand	Where the HNA addresses the issue
Residential development density assumptions Section 3.1, Pages 48-54	LCDC concluded that the City's densities for housing were, in their view, low, resulting in land use that is not sufficiently efficient to meet Bend's needed housing. Need to determine if raising the minimum densities of the residential zones is necessary to encourage the development of needed housing 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 Nevertheless, given the apparent market demand for increasing density 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.[121]	This issue will be addressed in the HNA by the time it is finalized. For now, the HNA uses the Base Case scenario to estimate capacity, based on historical densities, shown in Table 20.
HNA and Employment Lane Needs		
Using residentially designated land for employment uses Section 5.8 Pages 82-	The City identified 119 gross acres of land as being necessary to accommodate employment on residentially zoned land. The analysis was presented in the City's economic opportunities analysis (EOA), not HNA. LCDC required the City's revised HNA to include analysis of land needed for employment uses within residential zones.	This issue will be addressed in the HNA by the time it is finalized.

[121] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 3.1 d, p. 50-53

Statutory Requirements

This section provides the full text of the key Oregon Revised Statutes that describe the requirements of a housing needs analysis.

ORS 197.296

(2) At periodic review pursuant to ORS 197.628 to 197.651 or at any other legislative review of the comprehensive plan or regional plan that concerns the urban growth boundary and requires the application of a statewide planning goal relating to buildable lands for residential use, a local government shall demonstrate that its comprehensive plan or regional plan provides sufficient buildable lands within the urban growth boundary established pursuant to statewide planning goals to accommodate estimated housing needs for 20 years. The 20-year period shall commence on the date initially scheduled for completion of the periodic or legislative review.

(3) In performing the duties under subsection (2) of this section, a local government shall:

(a) Inventory the supply of buildable lands within the urban growth boundary and determine the housing capacity of the buildable lands; and

(b) Conduct an analysis of housing need by type and density range, in accordance with ORS 197.303 and statewide planning goals and rules relating to housing, to determine the number of units and amount of land needed for each needed housing type for the next 20 years.

(4)(a) For the purpose of the inventory described in subsection (3)(a) of this section, "buildable lands" includes:

(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.

(b) For the purpose of the inventory and determination of housing capacity described in subsection (3)(a) of this section, the local government must demonstrate consideration of:

(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

(C) The presence of a single family dwelling or other structure on a lot or parcel.

(c) Except for land that may be used for residential infill or redevelopment, a local government shall create a map or document that may be used to verify and identify specific lots or parcels that have been determined to be buildable lands.

(5)(a) Except as provided in paragraphs (b) and (c) of this subsection, the determination of housing capacity and need pursuant to subsection (3) of this section must be based on data relating to land within the urban growth boundary that has been collected since the last periodic review or five years, whichever is greater. The data shall include:

(A) The number, density and average mix of housing types of urban residential development that have actually occurred;

(B) Trends in density and average mix of housing types of urban residential development;

(C) Demographic and population trends;

(D) Economic trends and cycles; and

(E) The number, density and average mix of housing types that have occurred on the buildable lands described in subsection (4)(a) of this section.

(b) A local government shall make the determination described in paragraph (a) of this subsection using a shorter time period than the time period described in paragraph (a) of this subsection if the local government finds that the shorter time period will provide more accurate and reliable data related to housing capacity and need. The shorter time period may not be less than three years.

(c) A local government shall use data from a wider geographic area or use a time period for economic cycles and trends longer than the time period described in paragraph (a) of this subsection if the analysis of a wider geographic area or the use of a longer time period will provide more accurate, complete and reliable data relating to trends affecting housing need than an analysis performed pursuant to paragraph (a) of this subsection. The local government must clearly describe the geographic area, time frame and source of data used in a determination performed under this paragraph.

In addition, ORS 197.303 and 197.307 define needed housing and what actions a local government must take to ensure an adequate supply of land is available for the development of needed housing. The pertinent sections of these statutes are:

197.303 "Needed housing" defined. *(1) As used in ORS 197.307, until the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing" means housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels. On and after the beginning of the first periodic review of a local government's acknowledged comprehensive plan, "needed housing" also means:*

(a) Housing that includes, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy;

(b) Government assisted housing;

(c) Mobile home or manufactured dwelling parks as provided in ORS 197.475 to 197.490; and

(d) Manufactured homes on individual lots planned and zoned for single-family

residential use that are in addition to lots within designated manufactured dwelling subdivisions.

197.307 Effect of need for certain housing in urban growth areas; approval standards for certain residential development; placement standards for approval of manufactured dwellings.

***

(3)(a) When a need has been shown for housing within an urban growth boundary at particular price ranges and rent levels, needed housing, including housing for farmworkers, 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.

draft

URBAN GROWTH BOUNDARY REMAND

BEND

Residential TAC Meeting Packet
Part 2

August 25, 2015

Contents:

- Agenda
- Minutes - July 21 TAC Meeting
- Draft Residential Chapter and Policies
- Draft Residential Policies (Tracked Changes Version)
- Efficiency Measures Memorandum & Table
- Draft Urbanization Report

URBAN GROWTH BOUNDARY REMAND

Meeting Agenda

Residential Technical Advisory Committee – Meeting 10
Tuesday August 25, 2015 10 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 the draft Housing chapter of the Comprehensive Plan (aka General Plan), including V2 of the policies
- Review and approve, for further work, updated Efficiency Measures
- Review and approval of three technical documents: the draft Buildable Lands Inventory (BLI); draft Housing Needs Analysis (HNA); the first two chapters of the draft Urbanization Report

A process note: As you can see, we have a very full agenda this month. The technical reports, placed at the end of the agenda, are essentially packaged versions of previously discussed materials, with some enhancements to documentation and format. In the interest of forward momentum, the team encourages the TAC to focus its agenda time on larger questions and not technical detail.

The Housing chapter of the Comprehensive Plan has been updated using a new format for Bend's 1998 vintage plan. Introductory text is relatively brief (4 pages for Housing as compared to 24 pages in the current Plan), with a focus on a succinct description of important trends, issues, and the Plan designations. The full factual base is provided in supporting documents such as the Housing Needs Analysis. The policies in this packet are a "V2" update, reflecting input from the TAC's July meeting and written comment that followed. TAC approval of these draft materials is requested. Please note that a "clean" complete Housing Chapter is provided, along with a track change version of the policies.

Building on input received from the TAC regarding Efficiency Measures (EMs), the attached memo identifies a "short list" of EMs that merit discussion. Following discussion of those, TAC approval of the entire list is requested. The next steps are: the team will prepare draft code for the EMs that are ready, and, conduct further work on those so noted in the memo.

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.

The BLI and HNA are supporting technical documents to the Comprehensive Plan. The BLI provides the factual base regarding Bend's land supply, which is used for estimating growth capacities and other growth management planning. The HNA is the Plan's factual base for establishing Bend's 20-year housing need. Both are technical documents that have been discussed previously by the TAC (a draft BLI in February, and portions of the draft HNA during Phase 1 meetings). Approval of the drafts is requested.

The Urbanization Report is another supporting technical document of the Comprehensive Plan. It documents the growth capacity analyses prepared for the Urban Growth Boundary (UGB), starting with the base case, and progressing through efficiency measures, alternative expansion scenarios, and ultimately the proposed Bend UGB expansion. The TAC will review the Introduction, Methodology, and Base Case chapters at the August meeting – these chapters capture and further explain analyses prepared in Phase 1. As with the BLI and HNA, the core content of the Urbanization Report Chapters 1-3 were discussed in Phase 1 of the project. TAC approval is requested. Additional chapters will be reviewed by the TAC in future meetings.

Agenda

1.	**Welcome** a. Welcome and convene b. Where we are in the process – a brief look back and look forward c. Review and approve minutes	10:00 AM Chair Joe Dills, Brian Rankin
2.	**Draft Housing Chapter and Revised Residential Policies** *Information, discussion and action* a. Presentation and discussion: • Updates to proposed policy amendments based on TAC feedback • Highlights of the draft introductory text b. TAC action: • Recommend approval of the draft Housing Chapter to the USC	10:10 AM Wendy Robinson & Mary Dorman, APG

3. Residential Land Use Efficiency Measures — 10:50 AM

Information, discussion and action

a. Presentation and discussion:
   - Key recommendations based on TAC feedback

Becky Hewitt, APG

b. TAC action:
   - Provide direction on the team's recommendations, and discuss those EMs noted as requiring further work
   - Approve recommendations to include in subsequent modeling and forward to draft code language

4. Draft Technical Reports — 11:30 AM

Information, discussion and action

a. Presentation and discussion:
   - Overview of technical reports and their roles and relationships
   - Highlights of Draft Buildable Lands Inventory Report
   - Highlights of Draft Housing Needs Analysis
   - Highlights of Draft Urbanization Report, Chapters 1-3

Becky Hewitt, APG and Bob Parker, ECONorthwest

b. TAC action (one motion per report):
   - Recommend approval of working draft BLI, HNA, and Chapters 1-3 of the Urbanization Report to the USC

5. Public Comment — 12:15 PM

6. Project News and Adjourn — 12:25 PM

City of Bend
Residential Lands Technical Advisory Committee
Meeting Notes
Date: July 21, 2015

The Residential Lands TAC held its regular meeting at 10:00 am on Tuesday, July 21, 2015 in the Council Chambers of Bend City Hall. The meeting was called to order at 10:03 am by Al Johnson.

Roll Call

☐ Kristina Barragan	☐ David Ford	☐ Gordon Howard
☐ Allen Johnson	☐ Lynne McConnell	☐ Don Senecal
☐ Sidney Snyder	☐ Kirk Schueler	☐ Stacy Stemach

Agenda

1. Welcome

Introductions
Al called the meeting to order at 10:03 am, and informed the TAC that he will convene and serve as chair. He mentioned Joe will run the meeting, and that Tom Kemper is now representing the Residential TAC on the expanded Boundary TAC.

Where are we in the process?
Joe welcomed the TAC and provided a framing of the work completed to date and where the UGB process is going. Since the April (4/30/2015) workshop, the Boundary TAC has developed three (3) UGB expansion scenarios that were refined and approved for study by the UGB Steering Committee (USC). The project crossed this major milestone in June. The decisions on the three scenarios kicked off a summer of evaluation of these scenarios. The results of the analysis will be presented to the Boundary TAC and USC this fall to start narrowing down to a preferred scenario.

He mentioned that parallel with these evaluations, the Residential and Employment TACs have number of assignments. These assignments will come to the TACs in August and October, and involve their review of several project documents. Brian Rankin added that the Boundary TAC and USC approved the analysis of lands in addition to those included in three scenarios. Those areas that are adjacent to but fell outside the respective scenarios. He then described the three scenarios and supplemental analysis areas.

At this point the TAC members had several questions. Sid inquired about the schedule and interaction with the Boundary TAC. The tentative meeting date is October 7. This discussion touched on what amount of projected growth that can accommodated in the UGB based on the efficiency measures being considered today. What if City Council comes to a different decision? How do we do this in this time frame?

Joe and Brian addressed this by pointing out some decisions may require re-analysis, and this would affect time and schedule. Public input may also influence this, especially when people understand how decisions made today will change the Bend we see today. Kirk provided a last comment that we keep a thought in mind; we may need to do a final tweak based on outside actions and city actions.

Review and Approve Minutes

Joe then asked for a motion to approve the minutes from the last TAC meeting (February 23, 2015). Kirk moved approved of the minutes and Dave provided a second to the motion. The motion passed unanimously.

2. Proposed Amendments to Residential Policies

Joe introduced and framed up this topic for the TAC. He referred to the packet, starting on page 8. The proposal before the TAC includes a body of policies related to the residential chapter of the comprehensive plan. These policies serve several purposes, including serving as criteria for future changes in the comprehensive plan, and implementing recent decisions and discussions. The goal for this meeting is to get the TAC's review of all the policies, and conduct the word picking and editing subsequent to the meeting. He asked the TAC to look at intent, deletions, and offered that the team could create an email comment period. Brian added to this by asking the TAC to consider if the team missed something that should be included. The City team, including Growth Management (GMD) staff and staff outside of GMD have already looked at the Residential policies.

Joe also informed the TAC that the comprehensive plan will include a new Urbanization chapter. Certain topics not included in the Residential Chapter of the Plan will be captured in this chapter. The focus for today's meeting is on residential policies.

Is Urbanization in draft form? Residential TAC will weigh in, starting in October of this year. The team is working on a new format for the General Plan. This new format will include less narrative in text and more background moved to ancillary documents. The Housing Chapter will be brought to the TAC along with the draft Urbanization Chapter.

Following this introduction and discussion, Mary Dorman of the APG Team began a review of the changes proposed for the Residential Policies. The TAC will be considering all of the Residential Policies, including new policies developed to help achieve the goals in the 2015 Housing Needs Analysis. The new plan chapter itself will be distilled down into about three pages of text to provide a high level context for the policies that follow.

Mary then referred the TAC to the proposed policy amendments, starting at page 12 of the meeting packet. The proposals for Chapter 4, Population and Demographics, include deleting this chapter and its existing policies. The Housing Needs Analysis includes updated demographic data, and the City already has a new population forecast developed by Portland

State University. She then directed the TAC to the proposed changes to Chapter 5, Housing and Residential Lands. The team has not proposed new or changes to existing goals; the current goals are in a narrative format. She then walked the TAC through the proposed changes to the housing policies starting on page 12. These changes included population forecasts, housing mix, density, and affordability of housing. She provided additional background and touched on explanations for the proposed changes.

The TAC provided the following feedback on the policy changes presented on pages 12 through 16 of the meeting packet:

- Question – why updated HNA? Policy Choice of City Council?
- Population forecasts – 2nd and 3rd bullet don't require city to do anything?
- Periodic review. Look at policies that keep things focused on future policy amendments.
- Analysis of impediments to fair housing; should we mention fair housing in here; make sense to have in here? We have a 2013 analysis of impediments to fair housing (product). Bookend discussion – looking at changes and updates to further the UGB update process.
- Monitoring parking needs (new policy on page 15 of packet) – what is the intention? Monitor or look at less parking required? Intent is to lower the minimum and look at maximum parking standards. Be careful on reducing the maximum; might kill some projects. Grocery stores need about 4 stalls per 1,000. Focusing on residential chapter here.
- Criteria for monitoring parking needs? Discussion of parking standards, how to monitor whether more or less are needed, how will this be incorporated into the development code. What about higher density parking standards?
- See two parking policies at bottom of page 16. City considering lowering the parking standards in the development code. Different standards for suburban versus infill.
- May address this topic in the urbanization chapter. Discussed with areas of infill and redevelopment in UGB.

Joe clarified the intent behind the proposed parking policies; to monitor their performance and learn from their application, and then set lower parking standards; are we Okay coming away with intent. Al asked what's relevant to the capacity and the current project. The discussion the followed Al's question addressed whether standard is irrelevant, the use of the term "will" – does this mean we have a development code requirement that does these things; and whether a time element needs to be added to the policies to assist in determining whether the city will get things done.

Following this brief discussion, Mary and the TAC returned to reviewing the draft policies. A new Policy 26 – master planning; 20 plus acres was proposed. The TAC questioned if density is being increased why aren't we considering a minimum number of units to justify a master plan on a particular site? Why acreage alone? The TAC agreed to revisit this topic during the efficiency measure discussion. The TAC also questioned whether Policy 28 was needed; this

policy may need to be eliminated or re-written. After Policy 28 the TAC had no further comments on this section of the policy changes.

The TAC then started to review the Residential Compatibility policies starting on page 16 of packet. Joe and Mary mentioned that TAC would also touch on this in the efficiency measures discussion. The TAC discussed changing Policy 8 on page 17 to include "shall."

Neighborhood appearance starts on page 17. No comments on the proposed Neighborhood Appearance policies. The TAC then reviewed the proposed changes to the Transportation Connectivity and Public Utilities policies. The discussion of the Transportation Policies addressed proposed changes to Policies 32, 36, 37, and 38. Sid Snyder also questioned whether existing Policy No. 48 was needed in the Plan. When they reached the discussion of the proposed changes to the Destination Resorts policies, there was discussion to delete several of these policies as proposed. One question was raised for future answering regarding how destination resorts would be treated once the City reaches a population of 100,000. State law prohibits destination resorts from being cited a certain distance from cities that have a population of 100,000 or more.

The TAC concluded their review of the proposed policy changes by considered the changes to the Refinement plan areas – repeating policies from chapter 1. This discussion included proposed language for policy changes - Use minimize, maximize, as practical – stay away from this language.

Joe wrapped up this discussion and review by proposing a period within which TAC members could send in additional comments by email. These comments can be in track changes and based on the version that's included in the packet. The TAC agreed to provide any additional changes by the close of business on July 30, 2015 to Wendy Robinson.

3. Residential Land Use Efficiency Measures

Joe framed up this item before Becky Hewitt of APG gave a presentation. Becky referred the TAC to the table in the packet (starting at page 32 of 40 of the meeting packet and titled "Residential Efficiency Measures: Refinement and Implementation Strategies").

Becky's presentation touched on the proposed efficiency measures that involve changes to the text of the Bend Development Code and potential changes to the Zoning Map:

- Minimum density – the proposed measures increase minimums in the RS and the RH zones
- Exemptions to density standards; currently very subjective. See RTA 2 – referred to four bullets listed under RTA 2 Description
- Master Plan requirements; applies to over 20 acres in contiguous ownership; the proposed is to increase minimum to 70% of maximum density for the zone.
- Parking Requirements - See RTA 4. The proposal would reduce required number of spaces by ½ space per unit if within ¼ mile of transit or if unit was designated for

affordable housing. The approach to parking may be refined through the parking study. This discussion touched on what types of housing are considered affordable. This is based on Area Median Income and percentage of expenses.

- Map amendments – Ward property and COID property (RMA 1 and RMA 2)
- Map amendments to upzone along transit corridors (See page 40 of 40 in packet), RMA 4, 5, 6 and 7 on the east side – for residential map amendments. All areas within infill potential and close to transit.

Joe then began facilitating the discussion with the TAC, working from the table (See pages 32 through 40 of the meeting packet). The discussion included questions and comments on:

- How density is calculated. Gross applies to maximum, minimum density calculated on everything except sensitive lands.
- Cluster or cottage housing – how are these related to accessory dwelling units (ADUs'). ADU''s addressed separately in table – See RTA 11 about ADU's.
- Timing of all this – how will these be adopted? Do they have to be adopted at the same time the council adopts the UGB? The proposed measures in the table will guide the team work to draft code and adopt with UGB (most of it). Development code changes (text) can be packaged with the UGB. Things listed as "UGB Project" in the Adoption Strategy column refer to those that will be brought forward with the adoption of the UGB.
- Putting it all together – about 4,000 extra housing units could be developed through efficiency measures.
- Prioritization added to give TAC and BCC some sense of what's important.

The TAC discussion that followed focused on substance and intent of the proposed measures, and included the following topics.

- Small lots – RM for example and reduced parking – vehicular access standards. Current standards would make these lots unbuildable.
- ADA parking for multi-family situation. Small lot, 2 to 3 units become difficult because they need spaces plus drive aisle; two thirds of you lot is now asphalt.
- Lowering parking standards good; may be an issue on smaller lots. Combination of parking, width of a drive aisle, ADA requirements, lot size
- Gap in the densities – RS tops out at 7.3; RM zone new minimum is 12. There is now a density gap between RS and RM (> than 7.3 and < 12). 12 units per acre generally considered supportive of transit. Worth flagging and taking a second look – cluster or cottage housing may be in the gap (greater than 7 and less than 12). Cottage requires a minimum of 12 du/acre in the RM zone. Have to do it at 12 in the RM. In the RS, you have to develop cottage at 4. Take a second look at the gap (7 to 12) – top of RS to the bottom of RM.
- Master planning – relying heavily to get our yields. Generates Transportation Planning Rule (TPR) application; room for people to file appeals. Needs master plan ordinance that's very objective. Al recommended private property owners work on master plans.

Challenges with using master planning; one idea is two paths: 1. Clear and objective or 2. Discretionary. TPR needs to be addressed with master plan requirements.

- Exemptions to minimum densities; what about minor partitions?
- See EMA #5 – What does it take to get vertical mixed use in these areas? Areas built out with many small parcels.
- See Remand Requirements with respect to ETA 1a and EMA 1b – for Central Area Plan. Will talk about opportunity sites and expansion in Urbanization Chapter. Central Area – one of the highest performing in terms of capacity Galveston – have any bearing? Council choices? Galveston – low potential for redevelopment; higher potential in Central Area
- Central Westside Plan – reasonably likely approach in UGB process.
- Lot coverage - think about floor area ratio (FAR) instead. Avoid development that's out of scale with the neighborhood. FAR – amount of building on a lot scales with the lot. Way of controlling massing on a lot.
- See RTA 6a – 6e and rely more on FAR in the RS zone. FAR above grade

Joe wrapped up the discussion of efficiency measures by outlining next steps. A period within which TAC members can submit written comments by email is open; comments must be sent to Wendy by close of business on July 30, 2015. He also referred the TAC to the map amendments on page 40, described on page 37 of 40 (See RMA 4, 5, 6, and 7). He asked what level of enthusiasm the TAC had for these measures. These are not included in the modeling work done to date for capacity. Should we package these with the UGB? Sid thinks we should; concern over timing and make sure we get these done.

4. Public Comment

The only public comment provided was from Jodie Ward. She said the TAC was doing a good job and had no further comments for this meeting.

5. Project News and Adjourn

Joe informed the TAC that the next meeting for this group is August 25, 2015. He then adjourned the meeting at 12:21 pm.

Action Items/Next Steps

Action	Assigned To
Review of proposed policy amendments	TAC members to provide edits in track changes to Wendy by July 30, 2015
Residential Land Use efficiency measures	TAC members to provide final comments to Wendy by July 30, 2015

Chapter 6: **Housing**

HOUSING

ADOPTED AMENDMENTS

EFFECTIVE DATE	ORD #	CHANGES
7/14/2015	-	Created template.

BACKGROUND

Context

Bend's population grew rapidly between 1990 and 2014, increasing from about 20,000 to 80,000 people during that period. At the same time, Bend's housing stock nearly tripled. Most new housing development during this time was single-family detached housing.

This rapid population growth increased the demand for all types of housing. During the same period, average wages were flat and the combined result was a decline in housing affordability. Housing sales prices more than doubled between 2000 and 2014, while household income levels increased by only about 18 percent. In addition to wage stagnation, several other factors contributed to a decline in affordability between 1990 and 2014, including

- High demand for second homes in Bend
- Significant growth in the tourism/recreation economy and the associated jobs that tend to pay lower wages
- Demographic changes, as described in the Demographic Trends section below

As growth continues, Bend must carefully plan for new housing that meets the needs of its changing population. The Comprehensive Plan's goals and policies support residential neighborhoods that are safe, convenient, affordable, healthful, and attractive places to live, and which provide a range of housing choices matched to Bend's needs. One of the challenges facing the community is how to plan for a variety of housing options in existing neighborhoods and new residential areas that support the changing demographics and lifestyles of Bend's current and future residents.

Demographic Trends

There are a number of factors that will increasingly affect the choices people make when it comes to housing type; three primary factors are a person's age, the number of people in the household and household income. In Bend, and across the country, the first two decades of the 21st century saw some key demographic changes that will impact the way communities plan for the housing needs of their existing and future populations.

- **Growth in Baby Boomers.** The number of people over age 65 is projected to increase significantly. Households over 65 tend to have less income than younger households and are more likely to choose lower-cost multifamily housing. Some baby boomers may also choose to downsize their housing, resulting in greater demand for small dwellings.

- **Growth in Millennials.** Millennials are people who will be between 31 and 44 years old in the year 2028. This segment of the population is also expected to increase in Bend. Younger millenials typically have lower incomes and may have higher debt. Growth in millennials will increase need for affordable housing rental and ownership options.

- **Growth in Hispanic and Latino population.** The Hispanic and Latino population in Bend more than doubled between 2000 and 2014, and growth is expected to continue. Many Hispanic and Latino residents in Bend are also within the Millennial age range. To the extent that Hispanic and Latino households currently have lower household incomes than the population as a whole, demand for more affordable housing, both rental and ownership options, will increase.

In 2015, Bend will also welcome its first four-year university, which will ultimately bring up to 5,000 students into the mix. While some of these students will live on campus, there will also be a need for affordable student housing off campus.

Based on these trends, the future housing mix in Bend will look different than it has in the past. There is a growing need to provide a wider range of housing sizes and prices to accommodate the shifting demographics. Evidence suggests that a substantial portion of Bend's residents will live in attached housing, such as townhouses, cottage housing, duplexes, garden apartments, or urban apartments. At the same time, Bend also has a continuing demand for single family detached housing, primarily on small or moderately sized lots (5,000 to 7,000 square feet). A growing share of households will be renters, either by choice (e.g., Baby Boomers who prefer to rent smaller units) or by economic necessity. Demand for these types of homes will be particularly high in areas close to Bend's commercial and recreational amenities. In planning for future housing, Bend must pay close attention to the following housing issues:

- **Widening demand for a range of housing types by retirees.** Older households tend to move less frequently than younger households, and a large majority would like to age in place. Being near family, friends, and social organizations in walkable neighborhoods also becomes increasingly important with age.

- **Increasing demand for family housing.** Millennials and Hispanic households are poised to account for the largest percentages of growth in Bend over the next 20 years. Millennial will be entering the phase of life when they form families and have children. In addition, Hispanic households have larger than average household size because they often live in multi-generational households and have a larger average number of children. Growth in households with families will drive need for housing that is both affordable and has sufficient space.

- **Increasing demand for affordable housing.** A substantial proportion of Bend's households cannot afford housing in Bend. Many workers in Bend live

in nearby communities because affordable housing is in short supply in Bend, and the demand for small-lot housing with nearby amenities is increasing. For two of the fastest growing demographics in Bend, the Millennials and Hispanic and Latino population, affordability is more likely to be a barrier to homeownership or higher-cost rental housing.

- **Location and design of housing.** The location of housing is becoming increasingly important, with increased demand for housing in walkable neighborhoods near retail and other amenities. Well-designed multi-family and compact single-family homes located in desirable neighborhoods can provide opportunities for a wider range of housing options.

Neighborhood Livability

While the range of housing types and prices in Bend will expand, Bend will continue to emphasize livability in all neighborhoods, old and new. What does a livable neighborhood look like?

- Safe and convenient for travel by foot, car and bike
- Natural features, parks, open space
- Small-scale shops and places to eat and drink in the neighborhood or nearby
- Well-designed, quality housing
- Diverse housing types that “fit” the neighborhood

RESIDENTIAL PLAN DISTRICTS

The Comprehensive Plan has five residential districts that are shown on the Comprehensive Plan Map and described in Table 6-1 below. These districts provide for variety and choice in housing types, lot sizes, and locations needed to serve the existing and future housing markets. In addition to these residential districts, some future housing will occur in the Plan's mixed use districts and as secondary uses in some commercial areas.

Table 6-1. Residential Plan District

Residential District	Implementing Zone(s)	Density Range (dwellings per gross acre)*	Characteristics
Urban Reserve Area	Urban Area Reserve (UAR-10)	No min. Max 1 per 10 acres.	The Urban Area Reserve District is a holding zone for urban development. Areas with Suburban Low Density Residential zoning reflect the existing development patterns and presence of community water systems. Primary uses: single-family detached homes Secondary uses: destination resorts in specific areas only, accessory dwelling units (SR-2½ only)
	Suburban Residential (SR-2½)	No min. Max: 1 per 2.5 acres	
Urban Low Density	Residential Low Density (RL)	Min: 1.1 Max: 2.2	This district applies primarily to areas developed with single-family homes that are away from the city center. Primary uses: single-family detached homes Secondary uses: duplexes, manufactured home parks, accessory dwelling units
Urban Standard Density	Residential Standard Density (RS)	Min: 4.0 Max: 7.3	This is the primary district for existing and future single family homes, and is distributed throughout the urban area. Primary uses: single-family detached homes, duplexes Secondary uses: manufactured home parks, cluster/cottage housing, accessory dwelling units

* See Bend Development Code for methodology to calculate minimum and maximum densities

Residential District	Implementing Zone(s)	Density Range (dwellings per gross acre)*	Characteristics
Urban Medium Density	Residential Medium Density (RM-10)	Min: 6.0 Max: 10.0	This district is distributed throughout the urban area in a pattern that reflects both existing developments and land for future development or redevelopment. These areas are generally adjacent to commercial areas and along or near major transportation and transit corridors. Primary uses: attached housing, manufactured home parks, accessory dwelling units Secondary uses: single-family detached homes, boarding houses, cluster/cottage housing, neighborhood commercial uses
	Residential Medium Density (RM)	Min: 12.0 Max: 21.7	
Urban High Density	Residential High Density (RH)	Min: 21.7 Max: 43.0	This district allows the greatest concentration of population in the city and is generally applied in proximity to downtown and adjacent to commercial areas and/or transit corridors. Primary uses: multifamily and attached housing Secondary uses: neighborhood commercial uses

Additional information about how the need for housing is determined can be found in the Housing Needs Analysis (HNA), which is a supporting document to the Comprehensive Plan. The HNA documents historical housing and demographic trends, the projection of population and housing growth, and analysis of housing affordability. Based on this analysis, the HNA estimates needed housing density and mix for the planning period.

The need for housing correlates strongly to the need for land within Bend's urban growth boundary. The Urbanization Chapter (Chapter X) of the Comprehensive Plan provides a discussion about how land needs for housing and other uses are determined and how Bend will meet residential land needs over time.

GOALS

The intent of the Comprehensive Plan is to provide and maintain sufficient residential land to accommodate needed housing units under Statewide Planning Goal 10 (Housing). The following goals set the context for the policies in this chapter. The citizens and elected officials of Bend wish to:

- Keep our neighborhoods livable by offering a variety of living styles and choices, creating attractive neighborhoods located close to schools, parks, shopping and employment.
- Accommodate the varied housing needs of citizens with particular concern for safety, affordability, open space, and a sense of community.
- Recognize the importance of transportation linkages (streets, bikeways, sidewalks and paths) in connecting neighborhoods and building and maintaining a sense of community.
- Promote more flexibility in development standards to balance the need for more efficient use of residential land and preservation of natural features.

POLICIES

Population Forecasts

6-1 The City will coordinate with and provide data to Portland State University for their preparation and regular update of a coordinated 50-year population forecast for the Urban Growth Boundary.

6-2 Using the new coordinated 50-year forecast, the City will, within 5 years after acknowledgment of the current update becomes final and no longer subject to appeal, initiate a supplemental legislative review to demonstrate continuing compliance with state needed housing laws for a new full 20-year planning period .

6-3 The City will use regular updates of population forecasts and Housing Needs Analyses to monitor housing trends relative to the planned housing mix, densities, location, and affordability assumed within the Urban Growth Boundary.

Housing Mix, Density, and Affordability

6-4 The City will apply plan designations, zoning districts and development code regulations to implement the mix of housing indicated in the adopted Housing Needs Assessment.

6-5 The main purpose of maximum densities shown on the Plan Map is to maintain proper relationships between proposed public facilities and services and population distribution. One purpose of minimum densities is to assure efficiency of land use, particularly for larger sites. Another is to encourage development of housing in locations and at densities that support

healthy, accessible, and affordable housing choices.

6-6 Upon request, the City shall zone residential lands in accordance with their plan designations, and without a separate showing of public need, subject only to conditions, if applicable, requiring annexation or availability of public sewer or public water before occupancy.

6-7 The City will continue to create incentives for and remove barriers to development of a variety of housing types in all residential zones, consistent with the density ranges and housing types allowed in the zones. This policy is intended to implement the City's obligation under the State Housing Goal to "encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type, and density".

6-8 The City will apply innovative and flexible zoning tools to support a mix of housing types and densities.

6-9 The City and County will support public and private non-profit and for-profit entities that provide affordable housing in Central Oregon.

6-10 The City and County will coordinate with each other and other affected governments as required by the State Housing Goal to ensure that "the needs of the region are considered in arriving at a fair allocation of housing types and densities" and that "needed housing is provided on a regional basis through coordinated comprehensive plans".

6-11 The City will continuously monitor the yield of efficiency measures as required by the state needed housing statute and publish the results on its Growth Management Documents website not less than once a year.

6-12 To promote complete neighborhoods and the integration of other supporting uses, the City will employ a master planning process for large development sites which are 20 acres or greater. The master plan process will offer two options for approval 1) applying clear and objective standards or 2) applying discretionary standards for more flexibility.

6-13 Existing Residential Standard density areas that are adjacent to commercial or mixed use development may be re-designated for Residential Medium and High density development.

6-14 The City will support re-designation of suitable low density areas that are within a 15-minute walk to transit corridors for medium-density development.

6-15 The City shall employ special redevelopment standards and other strategies for manufactured home parks as an incentive to retain and redevelop existing affordable housing stocks at affordable prices and rent levels.

6-16 The City may consider density bonuses as an incentive to providing affordable housing.

6-17 The City will monitor parking needs for residential uses and set parking requirements to the lowest standards that will meet the community's needs in order to reduce land utilized for parking, reduce the cost of housing development, and encourage a more walkable development pattern.

6-18 The City will assist in identifying, obtaining and leveraging funding sources for the development of new housing for very low, low, and moderate - income residents, as determined by appropriate percentages of Area Median Family income in the Housing Needs Assessment.

6-19 The City will monitor the results of actions and programs funded through the use of the City's Affordable Housing Fee Trust Fund.

Residential Compatibility

6-20 Private and public nonresidential uses are necessary and will be encouraged within residential areas for the convenience and safety of the residents. Such facilities shall be compatible with surrounding developments, and their appearance should enhance the area.

6-21 Of necessity, nonresidential uses may abut residentially planned and zoned areas in different parts of the community. In these instances, nonresidential uses will be subjected to special development standards such as setbacks, landscaping, sign regulations, and building design that harmonize and provide transitions consistent with the primary purposes of the adjacent zones.

6-22 Homes built to HUD Class A manufactured home standards will be permitted either in manufactured home parks, or on individual lots. Non-Class A manufactured homes may be allowed in manufactured home parks or as replacement for non-conform-

ing manufactured homes subject to conditional use approval standards that are clear and objective and that encourage retention and replacement of existing affordable housing stock.

6-23 Homes built to HUD manufactured home standards located on individual lots in areas already developed with conventional housing shall be subject to special siting standards as provided by the state needed housing law.

6-24 Manufactured and modular homes meeting IRC Modular and CABO building code standards shall be permitted on the same basis as site-built homes.

6-25 Private covenants and deed restrictions recorded hereafter that support compact urban form, higher densities and better access to affordable housing are encouraged as supportive of City policy while those that undermine these goals are discouraged and should be considered as contrary to City policy in any legal proceedings to enforce, interpret or apply them.

6-26 Neighborhood commercial shopping areas may be located within residential districts and shall have development standards that appropriately limit their scale and recognize their residential setting.

6-27 In many cases, small home-based businesses are a legitimate use within residential areas, and may be permitted subject to design and nuisance standards in the Development Code.

6-28 Certain private recreational uses, such as golf courses or tennis courts, may be successfully integrated into residential areas provided the location, design, and operation are compatible with surrounding residential developments and do not prevent development of lands inventoried for needed housing to minimum density standards.

6-29 Residential areas will offer a wide variety of housing types in locations best suited to a range of housing types, needs and preferences.

Neighborhood Appearance

(See related policies in Chapter 9, Community Appearance.)

6-30 Above-ground installations, such as water and sewer pumping stations, power transformer substations or natural gas pumping stations, shall be screened and designed to blend with the character of the area in which they are located.

6-31 All new developments shall include trees in the road right of way, as practical, in the planter strip between the curb and sidewalk.

6-32 Walls and fences along arterial or collector streets shall be subject to special design standards. The fence or wall, and the area between the fence or wall and the curb or pavement, shall be landscaped.

6-33 All residential development will respect the natural ground cover of the area and existing and mature trees within the community should be preserved where practicable.

6-34 The City encourages flexibility in design to promote safety, livability and preservation of natural features. To that end, the City will provide development code standards to allow flexibility on dimensional standards, such as lot size and setbacks, to achieve these objectives.

6-35 Hillside areas shall be given special consideration in site design by both the developer and local regulations. Building sites, streets, and other improvements shall be designed and permitted in a manner that will minimize excessive cuts and fills and other erosion-producing changes. (Note: see related policies in Chapter 10, Natural Forces.)

Transportation connectivity

(See related policies in Chapter 7, Transportation Systems, and Chapter 3, Community Connections.)

6-36 Medium-and high-density residential developments should have good access to transit (preferably within ¼ mile of transit corridors), K-12 public schools, commercial services, employment and public open space to provide the maximum access to the highest concentrations of population.

6-37 Street widths on residential local streets shall be as narrow as reasonably possible to preserve safety, and limit the effects of surface runoff and excessive vehicle speed.

6-38 The City may require adjustments to the street design in order to discourage high speed traffic on local residential streets.

6-39 In all residential areas the City shall encourage the use of open space amenities such as landscaped traffic islands or extra-width planting strips.

6-40 Schools and parks may be distributed throughout the residen-

tial sections of the community, and dwelling units should have safe and convenient access to schools and parks.

6-41 The City will coordinate with the school and parks districts to ensure that the respective plans of each local government are coordinated and consistent with state law.

6-42 Sidewalks will be required in all new developments. Separated sidewalks will be required on all new streets. However, an alternative system of walkways that provide adequate pedestrian circulation may be approved.

6-43 Per the City's Transportation Systems Plan, the City will complete or connect priority walkways on routes to schools, parks, or commercial areas.

6-44 Bikeways shall be considered as a transportation element, and adequate facilities shall be provided as a part of new development.

6-45 Efforts will be made to extend trails, pedestrian ways, and bikeways through existing residential areas. Existing trails, pedestrian ways, and bikeways will be extended through new developments to allow further extension and promote alternative modes of travel.

6-46 The City will encourage pedestrian scale block length to encourage connectivity and pedestrian access. When existing conditions or topography prevent a cross street, a pedestrian accessway to connect the streets may be required.

6-47 Residential local streets shall be developed whenever practicable to increase connectivity within and between neighborhoods.

6-48 Cul-de-sac and "hammer-head" residential streets may be allowed only where existing development, steep slopes, open space, or natural features prevent connections, or when the objectives of connectivity are met within the neighborhood.

6-49 The City will consider the need for emergency equipment access for any new development.

Public utilities and services

(See related policies in Chapter 1, Plan Management and Citizen Involvement and Chapter 8, Public Facilities and Services.)

6-50 All residential areas will be provided with community water and sewer services and other facilities necessary for safe, healthful,

convenient urban living consistent with the density of development.

6-51 Residential development shall be coordinated with other land use elements and community facilities which are consistent with projected housing densities.

6-52 Electric power, telephone, and cable TV distribution and service lines shall be located underground in new developments.

6-53 Street names shall be unique within the County.

Destination Resorts

6-54 A destination resort within the Urban Area Reserve may be served by municipal water and sewer service or an approved community water and sewer service for domestic use compliant with state law.

6-55 Properties that are eligible for destination resort development will lose that eligibility upon inclusion into the UGB.

Refinement Plan Areas

(See related policies in Chapter 1, Plan Management and Citizen Involvement.)

6-56 A refinement plan that includes residential areas may prescribe residential density limits on specific properties which differ from the density range provided for in the General Plan. However, the average density of residential development allowed within a refinement plan area shall not be less than 80 percent or more than 100 percent of the maximum density, including applicable density bonuses or transfers, prescribed for the area by its pre-existing comprehensive plan map designations.

PROPOSED POLICY AMENDMENTS: RESIDENTIAL POLICIES

Proposed amendments are presented in an annotated table with language in underline/strikeout format; underlined text indicates new policy language and ~~strikeout~~ text indicates deleted language. The left column contains the amended policy language and the right column provides a brief explanation for the change. Changes to goals, policies or rationale since the July 21st TAC meeting are highlighted in yellow. Policy language that has not been amended is retained in plain text. Policies will need to be renumbered as appropriate for final adoption.

Chapter 4 Population and Demographics

Proposed Policy Amendment	Rationale for Amendments
POLICIES • ~~The City shall review and update the urban area population forecast every five years.~~ • ~~The City shall update income levels, household size, and other demographic information for the urban area after every U.S. census, or when other data for the City of Bend are available.~~	Deleting this chapter reflects approved legislation assigning coordinated population forecasting to the Population Research Center (PRC) at Portland State University (PSU). The PRC will provide coordinated forecasts with a 50-year forecast horizon for Oregon counties and cities no less than once every 4 years.

Chapter 5 Housing and Residential Lands

Proposed Policy Amendment	Rationale for Amendments
GOALS The intent of the Comprehensive Plan is to provide and maintain sufficient residential land to accommodate needed housing units under Statewide Planning Goal 10 (Housing). The following goals set the context for the policies in this chapter. The citizens and elected officials of Bend wish to: • Keep our neighborhoods livable by offering a variety of living styles and choices,	These existing goals are presented in paragraph format at the beginning of Chapter 5. Format revised for consistency with the bulleted goals in the Economy and other Plan

Proposed Policy Amendment	Rationale for Amendments
creating attractive neighborhoods located close to schools, parks, shopping and employment. • Accommodate the varied housing needs of citizens with particular concern for safety, affordability, open space, and a sense of community. • Recognize the importance of transportation linkages (streets, bikeways, sidewalks and paths) in connecting neighborhoods and building and maintaining a sense of community. • Promote more flexibility in development standards to balance the need for more efficient use of residential land and preservation of natural features. ~~*"Throughout the public workshops, visioning exercises, and committee meetings, one of the common themes was the desire to keep our neighborhoods livable. Bend will continue to offer a variety of living styles and residential choices, creating attractive neighborhoods located close to schools, parks, shopping and employment. It is a goal of the General Plan to accommodate the varied housing needs of citizens with particular concern for safety, affordability, open space, and a sense of community.*~~ ~~*A transportation system of streets, sidewalks, bicycle ways, and trails that connect our neighborhoods to schools, parks, shopping and employment and to other neighborhoods is an important factor in building and maintaining a sense of community. It is a goal that these neighborhood transportation linkages shall provide ways to move about the community, and also create a positive community image through design elements that provide for safe and attractive neighborhoods.*~~ ~~*The need for more housing in the urban area and the ever-increasing price of land can both work against preserving natural features in new developments. It is a goal that the General Plan policies and development standards thatwill promote more flexible and creative subdivision designs that will help preserve natural features, while containing development within the Urban Growth Boundary."*~~	chapters. Revisions to the format and substance of the goals may be needed to reflect UGB Remand requirements and findings, new policy direction on efficiency measures, and TAC input.

Proposed Policy Amendment	Rationale for Amendments
POLICIES ***Population Forecasts*** • The City will coordinate with and provide data to Portland State University for their preparation and regular update of a coordinated 50-year forecast for the Urban Growth Boundary ~~as scheduled by Portland State University~~. • Using the new coordinated 50-year forecast, the City will, within 5 years after acknowledgment of the current update becomes final and no longer subject to appeal,~~The city~~ initiate a supplemental legislative review ~~in order~~ to demonstrate continuing compliance with state needed housing laws for a new full 20-year planning period. ~~as defined in the needed housing statutes. should consider updating the Housing Needs Analysis after the release of a final population forecast for Bend by Portland State University. This update will include any needed data, including but not limited to household size, income levels, and demographic characteristics.~~ • The City ~~should~~ will use ~~the~~ regular updates of ~~the~~ population forecasts and Housing Needs ~~Analysis~~Analyses to monitor housing trends relative to the planned housing mix, ~~and~~ densities, location, and affordability assumed within the Urban Growth Boundary.	New policy language to reflect the new approach to regular updates to population forecasts and related updates to HNA. Population forecasts and HNA will be updated every 4-5 years and adopted as ancillary documents to the Comprehensive Plan. Revised second bullet and deleted initial rationale (below) based on TAC input. Commit to initiating legislative review for full 20-year planning period within 5 years after UGB decision is acknowledged and final. ~~Updating the HNA may drive the need to amend the UGB. This is more of a policy choice by the City Council, than a technical study. Policies directing analysis would be fine, but not necessarily the HNA.~~ Revised third bullet based on TAC input.
Housing mix, density and affordability • The City will apply plan designations, zoning districts, and development code regulations to implement ~~allow and encourage~~ the mix of housing ~~assumed~~ indicated in the adopted Housing Needs Assessment ~~HNA~~. 21. The main purpose of maximum densities ~~recommended~~ shown on the Plan Map ~~shall be recognized in order~~ is to maintain proper relationships between proposed	These policies have been moved up earlier in Chapter 5. Renumbering of policies will be done later. New policy to recognize and implement the updated HNA. Wording revised based on TAC input.

Proposed Policy Amendment	Rationale for Amendments
public facilities and services and population distribution. ~~The~~One purpose of minimum densities is to assure efficiency of land use, particularly for larger sites. Another is to encourage development of housing in locations and at ~~the~~ densities that support healthy, accessible, and affordable housing choices.	Policy 21 revised to articulate the purpose for minimum and maximum densities and provide policy support for proposed efficiency measures relating to minimum densities. Wording revised based on TAC input.
~~22. In developing a subdivision, Planned Unit Development, or multifamily housing project the following uses and natural conditions may be deducted from the gross acreage of the property for the purpose of density calculations:~~ ~~• areas dedicated for public park use or public open space;~~ ~~• areas developed for active recreational uses such as golf courses, tennis courts, swimming pools, and similar uses;~~ ~~• land in excess of 25 percent slope that is not developed;~~ ~~• natural wetlands and riparian areas that remain in a natural condition; and,~~ ~~• "Areas of Special Interest" designated on the General Plan Land Use Map.~~	Policy 22 is more appropriate as code language and may conflict with existing code provisions. Additional discussion will be needed regarding calculation of minimum/maximum densities (gross/net acres), particularly for master plan areas.
~~23. The City shall rezone residential lands to the designated General Plan densities when sewer service is available to the area.~~ Upon request, the City shall zone residential lands in accordance with their plan designations, and without a separate showing of public need, subject only to conditions, if applicable, requiring annexation or availability of public sewer or public water before occupancy.	
• The City will continue to create incentives for and remove barriers to development of a variety of housing types in all ~~low- and medium-density~~ residential zones, consistent with the density ranges and housing types allowed in the zones. ~~and with~~ This policy is intended to implement the City's obligation under the State Housing Goal to "encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type, and density".	Policy 23 is overly broad and compels the City to upzone when it may not be supported by the residents. The modification of this policy reflects TAC input and links zone change to availability of adequate public facilities. New policies to generally support efficiency measures and achieve housing mix identified in

Proposed Policy Amendment	Rationale for Amendments
• The City will consider the relative enforceability, potential impact, and effectiveness of affordable housing incentives created by the private sector in considering the economic and social consequences of including competing potential urban growth areas in urban growth boundary expansions.	the updated HNA. Expanded policy language reflects TAC input and emphasizes City obligations under the State Housing Goal.
• The City will apply innovative and flexible zoning tools to support ~~allow for~~ a mix of housing types and densities. ~~, including but not limited to development code language that allows for accessory dwelling units and small lot (cottage) development and incentives for housing in mixed use developments.~~	New policy in second bullet recommended by TAC member. Staff recommends including this policy in the new Urbanization Chapter where it could be considered as part of the "balancing" of Goal 14 factors for UGB expansion areas.
• ~~24. Accessory dwellings to a single family home may be allowed in new subdivisions or Planned Unit Developments, provided that the maximum General Plan density is not exceeded. The City will calculate accessory dwelling density using the same fraction of a full dwelling unit provided in the Systems Development Charges resolution~~.	Policy in third bullet revised based on TAC input.
25. The City and County will ~~work~~ support ~~with~~ public and private non-profit and for-profit entities ~~organizations~~ that provide affordable housing in Central Oregon~~within the urban area~~.	Policy 24 deleted - accessory dwellings are considered a housing type and therefore do not need to be called out in policy.
• The City and County will coordinate with each other and other affected governments as required by the State Housing Goal to ensure that "the needs of the region are considered in arriving at a fair allocation or housing types and densities" and that "needed housing is provided on a regional basis through coordinated comprehensive plans".	Policy 25 revised and bulleted policy added based on TAC input and to reflect Goal 2 coordination requirements.
~~26. The City shall evaluate the community's housing mix and density levels every five years beginning in 2000~~.	
• The City will continuously monitor the yield of efficiency measures as required by state needed housing statute and publish the results on its Growth Management Documents website not less than once a year.	

Proposed Policy Amendment	Rationale for Amendments
• ~~The City will require master planning for large development sites (+20 acres) to ensure that a mix of housing types and densities will be provided.~~ • To promote complete neighborhoods and the integration of other supporting uses the City will employ a master planning process for large development sites which are 20 acres or greater. The master plan process will offer two options for approval 1) applying clear and objective standards or 2) applying discretionary standards for more flexibility. ~~27. When new commercial centers are created in developing residential areas, the City and County may allow up to 20 acres of medium-density residential housing within one-eighth of a mile of the commercial center.~~ 28. Existing ~~low-density r~~Residential Standard density areas that are adjacent to commercial or mixed use development ~~at the south or north ends of the commercial corridor~~ may be re-designated for ~~medium-density~~ Residential Medium and High density development. • The City will support re-designation of suitable low density areas that are ~~adjacent~~ within a 15-minute walk to transit corridors for medium-density development. 29. The City shall ~~provide~~ employ special redevelopment standards and other strategies for manufactured home parks as an incentive to retain and redevelop existing affordable housing stocks at affordable prices and rent levels. 30. The City may consider ~~D~~density bonuses ~~may be considered~~ as an incentive to providing affordable housing. • The City will monitor parking needs for residential uses and set parking requirements to the lowest standards that will meet the community's needs in order to reduce land utilized for parking, reduce the cost of housing development, and	Policy 26 replaced with new policies under Population Forecasts above. Trying to avoid reference to specific years in the Comprehensive Plan that are quickly out of date. New policy to implement and monitor efficiency measures and achieve the housing mix/densities identified in the updated HNA through master planning. Policies revised based on TAC input, including new policy directive to offer two options for master plan approval. Policy 27 is old and more multi-family housing may be needed on a case by case basis. New policy to support transition to transit-supportive densities where appropriate. Wording of policies 28-30 revised based on TAC input.

Proposed Policy Amendment	Rationale for Amendments
encourage a more walkable development pattern. • The City will assist in identifying, obtaining and leveraging funding sources for the development of new housing for very low, low, and moderate - income residents, as determined by appropriate percentages of Area Median Family income in the Housing Needs Assessment. • The City will monitor the results of actions and programs funded through the use of the City's Affordable Housing Fee Trust Fund.	New policy to support efficiency measures related to reduced parking. New policy to implement efficiency measures and achieve the housing mix/densities identified in the updated HNA. The City Council recently extended the sunset date for the Affordable Housing Fee. It makes sense to monitor the results of all adopted efficiency measures, but the details and schedule for monitoring do not need to be specified in the plan policy.
Residential compatibility 1. ~~Future development and local development standards shall recognize and respect the character of existing areas.~~ 2. ~~In areas where existing urban level development has an established lot size pattern, new infill subdivision or PUD developments shall respect have a~~	

Proposed Policy Amendment	Rationale for Amendments
~~compatible lot transition that respects the number of adjoining lots, lot size and building setbacks of the existing development while developing residential densities within the range for the underlying zone. New developments may have smaller lots or varying housing types internal to the development.~~ ~~3. The development of infill areas may, as an alternative to the standard subdivision review process, proceed through a public involvement process that would allow the maximum flexibility of design and provide for neighborhood participation.~~ 4. Private and public nonresidential uses are necessary and ~~should~~ will be ~~permitted~~ encouraged within residential areas for the convenience and safety of the ~~people~~ residents. Such facilities shall be compatible with surrounding developments, and their appearance should enhance the area. 5. Of necessity, nonresidential uses may ~~will have to~~ abut residentially planned and zoned areas in different parts of the community. In these instances, ~~any~~ nonresidential uses ~~shall~~ will be subjected to special development standards such as ~~in terms of~~ setbacks, landscaping, sign regulations, and building design that harmonize and provide transitions consistent with the primary purposes of the adjacent zones. 6. Homes built to HUD Class A manufactured home~~s~~ standards ~~shall~~ will be permitted in ~~as part of a~~ manufactured home park~~s~~, ~~or part of a planned unit development, or~~and on individual lots. Non-Class A manufactured homes may be allowed in manufactured home parks or as replacement for non-conforming manufactured homes subject to conditional use approval standards that are clear and objective and that encourage retention and replacement of existing affordable housing stock. 7. Homes built to HUD manufactured home standards located on individual lots in areas already developed with conventional housing shall be subject to special	Wording of policies 4 and 5 revised based on TAC input. Policies 6 and 7 revised and supplemented based on TAC input relating to manufactured home standards.

Proposed Policy Amendment	Rationale for Amendments
siting standards as provided by state needed housing law. • Manufactured and modular homes meeting IRC Modular and CABO building code standards shall be permitted on the same basis as site-built homes. • Private covenants and deed restrictions recorded hereafter that support compact urban form, higher densities and better access to affordable housing are encouraged as supportive of City policy while those that undermine these goals are discouraged and should be considered as contrary to City policy in any legal proceedings to enforce, interpret or apply them.	New policy recommended by TAC to address private covenants.
8. Neighborhood commercial shopping areas may be located within residential districts and ~~shall~~shall have development standards that appropriately limit their scale and recognize their residential ~~area~~setting.	Wording of policies 8 through 11 revised based on TAC input. Revised Policy 10 clarifies that private recreational uses shall not prevent development of lands inventoried for needed housing.
9. In many cases, ~~home occupations~~ small home-based businesses are a legitimate use within residential areas, and ~~shall~~ ~~will~~ may be permitted subject to design and nuisance standards in the Development Code. ~~provided that the use displays no outward manifestations of a business.~~	
10. Certain private recreational uses, such as golf courses or tennis courts, ~~can~~ may be successfully integrated into residential areas provided the location, design, and operation are compatible with surrounding residential developments and do not prevent development of lands inventoried for needed housing to minimum density standards ~~as assumed in the current Residential Lands Update~~.	
11. Residential areas ~~shall~~ will offer a wide variety of housing types in locations best suited to ~~each~~ a range of housing types, needs and preferences.	
~~12. Rehabilitation or redevelopment of older residential areas shall be encouraged.~~	Policy 12 deleted because it is so broad and doesn't provide guidance for planning or land use decisions.

Proposed Policy Amendment	Rationale for Amendments
Neighborhood Appearance (See related policies in Chapter 9, Community Appearance.) 13. Above-ground installations, such as water and sewer pumping stations, power transformer substations or natural gas pumping stations, shall be screened and designed to blend with the character of the area in which they are located. 14. All new developments shall include trees in the road right of way, as practical, in the planter strip between the curb and sidewalk. ~~Such trees shall be consistent with the City's Urban Forestry Plan.~~ 15. Walls and fences along arterial or collector streets shall be subject to special design standards. The fence or wall, and the area between the fence or wall and the curb or pavement, shall be landscaped ~~and maintained by abutting property owner(s) or homeowners association.~~ ~~16. Walls and fences in the setback area between the front of the house and the adjacent street shall not exceed 3½ feet in height.~~ 17. All residential development ~~should~~ will respect the natural ground cover of the area ~~insofar as possible,~~ and existing and mature trees within the community should ~~should~~ ~~shall~~ be preserved where ~~to the greatest extent~~ practicable. 18. The City encourages flexibility in design to promote safety, livability and preservation of natural features. ~~Lot sizes as small as 4,000 square feet may be applied for in the RS zone to meet these objectives.~~ To that end, the City will provide development code standards to allow flexibility on dimensional standards, such as lot size and setbacks, to achieve these objectives. ~~19. To encourage flexibility in design and preservation of natural features in areas planned for medium density housing, lots as small as 2,500 square feet shall be~~	Revise Policy 14 - City does not have an Urban Forestry Plan. Wording of Policies 14 through 18 revised based on TAC input. Policy 16 deleted because it is not policy language and is more appropriate for code standards (implemented in 3.2.500) Policy 18 revised to support efficiency measures and remove development standards (lot sizes) from the policy language. Policy 19 deleted and replaced with more general language in Policy 18.

Proposed Policy Amendment	Rationale for Amendments
~~allowed in the RM-10 and RM zoning districts.~~ 20. Hillside areas shall be given special consideration in site design by both the developer and local regulations. Building sites, streets, and other improvements shall be designed and permitted in a manner that will minimize excessive cuts and fills and other erosion-producing changes. (Note: see related policies in Chapter 10, Natural Forces.)	
Transportation connectivity (See related policies in Chapter 7, Transportation Systems, and Chapter 3, Community Connections.) 31. Medium-and high-density residential developments ~~shall~~ should have good access to transit (preferably~~be located~~ ~~where they~~ within ¼ mile of transit corridors), K-12 public schools. ~~have good access to arterial streets~~ and ~~be~~ ~~near~~ commercial services, employment and public open space to provide the maximum ~~convenience~~ access to the highest concentrations of population. 32. Street widths on ~~public~~ residential local streets shall be as narrow as reasonably possible to preserve safety, and limit the effects of surface runoff and excessive vehicle speed. ~~may vary depending on topography, anticipated traffic volumes, natural features that warrant protection, and existing street patterns in the neighborhood. Narrower streets may have limited on-street parking to ensure emergency vehicle access.~~ 33. The City may require adjustments to the street design ~~pattern or installation of traffic calming devices~~ in order to discourage high speed traffic on local residential streets. 34. In all residential areas the City ~~should~~ shall~~shall~~ encourage the use of open space amenities such as landscaped traffic islands or extra-width planting strips. 35. Schools and parks may be distributed throughout the residential sections of the	Policies revised by staff to streamline and clarify language. Modifications to wording of Policies 31 through 43 based on TAC input.

Proposed Policy Amendment	Rationale for Amendments
community, and ~~every~~ dwelling units ~~in the area~~ should ~~be within convenient distance of~~ have safe and convenient access to ~~a~~ schools ~~or~~ and ~~a~~ parks ~~based on the standards of the school and park districts~~. • The City will coordinate with the school and parks districts to ensure that the respective plans of each local government are coordinated and consistent with state law. 36. Sidewalks ~~shall~~ will be required in all new ~~residential~~ developments. Separated sidewalks ~~shall~~ will be required~~, as practical,~~ on all new streets ~~that provide or will provide access to schools, parks, or commercial areas~~. However, an alternative system of walkways ~~and trails~~ that provide adequate pedestrian circulation may be approved. 37. Per the City's Transportation Systems Plan ~~Efforts shall the City shall continue to~~ the City will complete or connect ~~existing walks along~~ priority walkways on routes to schools, parks, or commercial areas. 38. Bikeways shall be considered as ~~both a circulation and recreation~~ a transportation element ~~in the Plan~~, and adequate facilities ~~should~~ shall be ~~obtained for this purpose in all~~ provided as a part of new development. 39. Efforts ~~shall~~ will be made to extend trails, pedestrian ways, and bikeways through existing residential areas. Existing trails, pedestrian ways, and bikeways will be extended through new developments to allow further extension and promote alternative modes of travel. 40. ~~To~~ The City will encourage pedestrian scale block length to encourage connectivity and pedestrian access~~, residential block length shall not exceed 600 feet except for topographic constraints~~ standards shall be included in the Development Code~~.~~ When existing conditions or topography prevent a cross street, a pedestrian	New policy added for Goal 2 coordination with school and park districts.

Proposed Policy Amendment	Rationale for Amendments
accessway to connect the streets ~~shall~~ may be required. 41. Residential local streets shall be developed whenever practicable to increase connectivity within and between neighborhoods. 42. Cul-de-sac and "hammer-head" residential streets may be allowed only where existing development, steep slopes, open space, or natural features prevent connections, or when the objectives of connectivity are met within the neighborhood. 43. The City will consider the need for emergency ~~Emergency~~ equipment access ~~shall be considered during~~for any new ~~residential~~ development.	
Public utilities and services (See related policies in Chapter 1, Plan Management and Citizen Involvement and Chapter 8, Public Facilities and Services.) 44. All residential areas ~~shall~~ will be provided with community water and sewer services and other facilities necessary for safe, healthful, convenient urban living consistent with the density of development. 45. Residential development ~~shall will~~ shall be coordinated with other land use elements and community facilities which are consistent with projected housing densities. 46. Electric power, telephone, and cable TV distribution and service lines ~~shall will~~ shall be located underground in new developments. ~~Efforts shall be made to place existing utility lines underground in established residential areas.~~ ~~47. Street lighting shall be provided in all new subdivisions at the time of development. Street light fixtures shall be shielded to direct light down.~~ 48. Street names shall be unique within the County.	Minor changes to wording based on TAC input. Policy 46 revised and Policy 47 deleted because they are implemented through the Development Code.

Proposed Policy Amendment	Rationale for Amendments
Destination Resorts	
~~49. In addition to lands excluded from eligibility for destination resort siting under state law, the following lands within the Urban Area Reserve shall not be mapped as eligible for destination resort siting:~~ ~~(a) All lands owned by public agencies.~~ ~~(b) All lands zoned for surface mining.~~ ~~(c) All lands zoned SR 2 ½ and all lands platted for subdivisions.~~ ~~(d) Land for which contiguous area not otherwise removed from eligibility is less than 160 acres, except where adjoining land under the same ownership outside the Urban Area Reserve is mapped with the Deschutes County destination resort (DR) overlay.~~ ~~(e) Single parcels, or adjoining parcels in the same or related ownership (including lands outside the Urban Area Reserve) of less than 160 acres.~~ ~~(f) Lands not adjacent to either (1) F1 zoning, or (2) Deschutes County destination resort (DR) overlay adjoining F1 zoning.~~	Policies 49 and 50 deleted: Destination resorts in the UAR are regulated by Deschutes County, and are therefore not under the City's jurisdiction. These policies are not required in the Bend UGB. Same explanation applies to policies 52-55.
~~50. Destination resorts, as defined by state law, shall only be allowed in areas designated for such use as shown on the adopted destination resort map. An exception to statewide goals relating to agricultural lands, forestlands, public facilities and services or on the eligible lands in the urban area.~~	
51. A destination resort within the Urban Area Reserve ~~shall~~ may be served by municipal water and sewer service or an approved community water and sewer service for domestic use, ~~subject to City approval~~compliant with state law.	Policy 51 revised because destination resort developers may not want urban services.
• Properties that are eligible for destination resort development will lose that	New policy language to assure that any land

Proposed Policy Amendment	Rationale for Amendments
eligibility upon ~~annexation into the City~~inclusion into the UGB. ~~52. No destination resort master plan shall be approved in the Urban Area Reserve until the County, pursuant to its management agreement with the City, has adopted destination resort development standards that, at a minimum, satisfy the standards in state law.~~ ~~53. Any destination resort developed within the Urban Area Reserve shall provide a sufficient open space buffer between any development and the Deschutes National Forest lands to protect against wildfires and to protect the scenic values and wildlife values of the forest.~~ ~~54. Destination resorts shall provide for any arterial or collector streets that are shown on the transportation system plan map to be extended through the site, or as needed as a result of a traffic study.~~ ~~55. Destination resorts shall provide for pedestrian and bicycle access through the development from the urban area to the National Forest and/or other public lands such as parks, scenic areas, and designated trails.~~	added to the UGB is developed for urban uses and densities.
Refinement Plan Areas (See related policies in Chapter 1, Plan Management and Citizen Involvement.) 56. A refinement plan that includes residential areas may prescribe residential density limits on specific properties which differ from the density range provided for in the Comprehensive Plan. However, the average density of residential development allowed within a refinement plan area shall be not less than 80 percent or more than 100 percent of the maximum density, including applicable density bonuses or transfers, prescribed for the area by its pre-existing comprehensive plan map designations~~comply with the density limitations of the General Plan~~. ~~57. The Lava Ridge Refinement Plan is adopted as part of the Bend Area General~~	Policy 56 revised based on input from TAC.

Proposed Policy Amendment	Rationale for Amendments
~~Plan.~~ ~~58. If the City and County do not adopt refinement plans for the two study areas shown on Figures 22A and 22B by January 2000, the RL zoned land in those areas shall be rezoned to RS.~~	Policies 57 and 58 no longer necessary because refinement plans have been adopted.

Memorandum

August 19, 2015

To: Residential Lands Technical Advisory Committee

Cc:

From: Angelo Planning Group Project Team

Re: Efficiency Measures – Follow up on key code concepts and issues

INTRODUCTION

This memorandum is a follow up to the Residential Lands Technical Advisory Committee (Residential TAC) discussion on July 21st, 2015 regarding residential efficiency measures. Several issues were raised in the Residential TAC review and subsequent comments from individual TAC members that warrant further discussion and explicit direction from the Residential TAC. This memorandum summarizes those issues and presents a project team recommendation for each. In addition, an updated table is attached that reflects minor clarifications to the efficiency measures table (shown highlighted) based on Residential TAC feedback at and after the last meeting.

REMAINING QUESTIONS ON EFFICIENCY MEASURES

Minimum Residential Density for RS (RTA 1a)

The recommendation in Residential Text Amendment (RTA) 1a in the July 15, 2015 memo and table was an increase in minimum density from 2 to 4 dwelling units per gross acre (excluding sensitive lands). One Residential TAC member noted that in previous materials (Efficiency Measures memo dated November 10, 2014), this was characterized as a minimum of 4 or 5 units per acre (gross density), with 4 being a "conservative" approach and 5 being an "aggressive" approach, and questioned why the team had recommended 4 rather than 5 as the minimum density standard.

At the time of the November 2014 memo, the team had yet to make a recommendation on whether to apply the increased minimum density to the whole RS zone or whether to create a new zone (e.g. "RS-2") to implement the change. Since then, the team has recommended that the minimum density be applied throughout the RS zone, with exceptions for approved subdivisions and already-developed lots under an acre. The fact that the revised standard will apply to the whole RS zone is what led the project team to recommend the lower of the two options initially identified for minimum density. This will provide more flexibility to implement the

minimum within a wide range of site conditions and lot configurations. The team believes this is an appropriate level of increase from the current 2 units per acre minimum.

A few additional pieces of information are provided below to provide context for the recommendation.

- As noted in the November 2014 memo, the average density of development (for all housing types) in the RS zone from 1998-2008 was roughly 4.9 units per net acre. This translates to approximately 3.8 units per gross acre (assuming 21% for right of way).
- While the density standards are gross density and do not directly relate to lot size standards, an average lot size that would achieve 4 units per acre would be roughly 10,000 square feet, while an average lot size to achieve 5 units per acre would be about 8,000 square feet.

Project Team Recommendation: The project team recommends that the minimum density for the RS zone be increased from 2 units per gross acre to 4 units per gross acre (excluding sensitive lands).

Addressing Residential Density "Gaps" due to Higher Minimum Densities

This issue was not called out in the previous table, but was raised by the Residential TAC and noted in previous memos where minimum densities were discussed. Currently, the full range of densities from 1.1 to 43 units per acre is allowed in at least one residential zone. With the recommendations to increase the minimum density in RS and RM (RTA 1a and 1b, respectively), "gaps" would be created so that there would not be a zone applied on the ground that allowed development in the 7.3 to 12 dwellings per acre range (between the upper end of RS and the proposed minimum for RM), or in the 2.2 to 4 dwellings per acre range (between the upper end of RL and the proposed minimum of RS). There are several ways to address this issue. Some of these are explored below.

Increase Maximum Densities

Increase the maximum density of the lower density zone: increase the maximum density of RL to 4 dwellings per acre and/or increase the maximum density of RS to 12 dwellings per acre.

For the RL zone, the minimum lot size currently is 15,000 square feet; this will need to be reduced to 10,000 square feet in order to allow development up to 4 units per gross acre. This change would allow a minimal amount of lot-splitting while largely retaining the character of existing neighborhoods. The low maximum density in the RL zone currently is due to the fact that some areas are still on septic; however, sewer service is being extended to these areas within the next few years, which will allow for higher densities. The proposal to allow 4 units per acre in the RL zone could only be achieved after sewer is available.

For the RS zone, 12 dwellings per acre would be a significant increase over the current maximum of 7.3. However, the maximum could be increased to 9 or 10 dwellings per acre. If the current minimum lot size (4,000 square feet for single family detached) were retained, this would allow for a different mix of housing types but wouldn't change the range of housing

products allowed (e.g. wouldn't allow single family homes on smaller lots than currently allowed). This would encourage development on the smaller end of the lot size range allowed today and encourage a greater variety of housing types while retaining the character of residential neighborhoods. The minimum for RM could be set to 10 rather than 12 units per acre in order to retain that portion of the density spectrum.

Provide a new (or repurposed) zone

Create or repurpose an additional zone (e.g. RM-10) to cover the missing portion of the density spectrum. For example, the city's existing RM-10 zone, while not currently applied, is available for zone change requests. The maximum density of that zone could be increased to 12 units per acre so that it would cover the full extent of the missing densities. The RM-10 zone currently implements the RM plan designation, so for a zone change to be consistent with the comprehensive plan, it would have to have the RM plan designation, which would have the effect of reducing the density on the site unless a change to the plan designation were approved as well.

Alternatively, a new zone could be created (or the RM-10 zone could be revised and repurposed) as a higher density version of the RS zone that would implement the RS plan designation and be available for zone changes that meet certain criteria (e.g. proximity to commercial / parks / schools / transit; adequacy of infrastructure is already required for all zone changes). If implementing the RS plan designation, the upper end of the range for the RS plan designation would still need to be increased. Once TPR analysis was done for that change to the plan designation, a rezone consistent with the plan designation would not require TPR analysis under state law; however, the Bend Development Code does not exempt zone changes that are consistent with the plan designation from Transportation Impact Studies.

This option is more complex, and city staff generally prefers to avoid creating new zones.

Project Team Recommendation: Increase the maximum density of the RL plan designation and zone to 4 units per acre. Continue to explore and test options for the gap between the RS and RM zones.

Minimum Density for Master Plan Development (RTA 3b) and Density Transfers (RTA 3c)

The recommendation in RTA 1a in the July 15, 2015 memo and table was a minimum density of 70% of the maximum density for the zone. One Residential TAC member noted that in previous materials (Efficiency Measures memo dated November 10, 2014), the recommendation was that it be set at 80% of the maximum (the current standard is 60% of the maximum), and questioned why it had been revised downward.

The density ranges in the RM and RH zones are so broad that the high end is rarely used. The minimum density for each zone with the existing 60% standard, the proposed 70% standard, and the previously identified 80% standard are in Table 1 below.

Table 1: Maximum and Potential Minimum Densities by Zone for Master Planned Neighborhoods

Zone	Maximum Density (units/gross acre)	Minimum Density @60% (units/gross acre)	Minimum Density @70% (units/gross acre)	Minimum Density @80% (units/gross acre)
RS	7.3	4.4	5.1	5.8
RM	21.7	13.0	15.2	17.4
RH	43.0	25.8	30.1	34.4
RM-10	10.0	6.0	7.0	8.0

As shown in the table, a minimum of 80% pushes densities to fairly aggressive levels for the RM and particularly for the RH zone. How challenging this would be for developers depends in part on how much averaging across zones is allowed. This was addressed in RTA 3c, with the recommendation that density transfers across zones be limited in order to ensure that needed housing types would be built. An alternative would be to require a minimum of 80% of the maximum total housing capacity be provided, but allow a greater degree of density transfer among the zones, or have a tiered set of minimum density standards based on the total residential acreage so that larger sites with more room for averaging would have to achieve higher minimums.

The rationale for limiting density transfers across zones is to ensure that needed housing types are built, so that a site with a mix of RS, RM, and RH has to build at least some housing at RH densities. Some amount of density transfer will need to be allowed in order to provide some flexibility. This could be limited to a certain percentage of total units (e.g. 20% of the minimum required units from a given zone) that could be "transferred" to a different portion of the site. Alternatively, the limit could be that the final density in all zones must be no more than a certain percentage (e.g. 10%) above or below permitted density range.

Project Team Recommendation: Because of the wide ranges of allowed densities in the RM and RH zones and the proposed mix of zones for large opportunity sites inside the UGB as well as expansion areas that will be subject to master plan requirements (which will all or nearly all include RM and/or RH), the project team continues to recommend 70% of maximum density and limitations on density transfers among zones within a master plan site. The project team will refine the approach to density transfers on split-zoned sites as part of developing draft proposed code language.

Lot Coverage vs. Floor Area Ratio

The recommendations in the July 15, 2015 memo and table included reductions to lot coverage standards in the RS and RM zones and elimination of this standard in the RH zone (RTA 6a, 6b and 6c). A Residential TAC member suggested moving to Floor Area Ratio (FAR) rather than lot coverage as a tool to regulate structure size. A described in RTA 6d, the city also has floor area ratio limitations for certain small lots; amendments are proposed to these standards as well.

The purpose of lot coverage or floor area ratio standards is generally to control the scale of the structure relative to the size of the lot. The proposed amendments were intended to prevent these standards from becoming an obstacle to development on the very smallest lots, since minimum lot size is proposed to be reduced for the RH and RM zones. However, they may produce unintended consequences for larger lots, allowing larger structures than can be built under current regulations.

There are a number of different ways to approach this issue. For example, the City of Portland uses maximum building coverage that varies by lot size for all single family residential zones (see table below).

Table 110-4
Maximum Building Coverage Allowed in the RF through R2.5 Zones [1]

Lot Size	Maximum Building Coverage
Less than 3,000 sq. ft.	50% of lot area
3,000 sq. ft or more but less than 5,000 sq. ft.	1,500 sq. ft. + 37.5% of lot area over 3,000 sq. ft.
5,000 sq. ft. or more but less than 20,000 sq. ft.	2,250 sq. ft + 15% of lot area over 5,000 sq. ft.
20,000 sq. ft. or more	4,500 sq. ft. + 7.5% of lot area over 20,000 sq. ft.

Notes:
[1] Group Living uses are subject to the maximum building coverage for institutional development stated in Table 110-5.

In Portland's multifamily residential zones, the maximum building coverage ranges from 45% to 100% of site area. Portland also has required outdoor areas of at least 250 square feet for all single family residential zones and at least 48 square feet per unit for all multifamily zones.

Multiple Residential TAC members referenced FAR standards in NorthWest Crossing. These are not in the development code; they are likely part of the privately enforced design guidelines. The NorthWest Crossing overlay Zone has lot coverage standards for single family areas that depend on the lot size: 35% for lots 6,000 square feet or more; 50% for lots under 6,000 square feet.[1] There are no lot coverage standards in the overlay for multifamily housing or townhomes.

Project Team Recommendation: In order to better understand the implications of various options for regulating structure size, the project team proposes testing case studies and example lots to refine the proposed standards.

Multifamily Parking Standards

The proposed amendments in the July 15 memo included RTA 4: reducing parking requirements for all affordable housing and all multi-family within a quarter-mile of transit. A Residential TAC member questioned why this had been changed from reducing all multifamily parking standards to applying the reduced standards only in limited circumstances. In the

[1] BDC 2.7.320.B.6.c

January Residential TAC meeting when efficiency measure packages were discussed, concerns were raised about reducing parking standards for multi-family in existing neighborhoods. As a result, the project team refined this measure to apply in more targeted circumstances. However, the city-wide parking study starting soon offers an appropriate venue to consider broader changes for multifamily parking standards.

Project Team Recommendation: Add to RTA 4 a recommendation to evaluate across-the-board reductions to multifamily parking standards through the Parking Study.

Accessory Dwelling Unit Standards

The proposed amendments in the July 15 memo included RTA 11a and 11b, which would make it marginally easier to create Accessory Dwelling Units (ADUs). A Residential TAC member suggested additional amendments for ADUs, including increasing the maximum size from 600 square feet to 800 square feet; eliminating or upwardly revising the requirement that ADUs be no larger than 40% of the primary dwelling; and SDC reform that encourages ADU development. The development code (3.6.200.B) currently limits the size of an ADU to 600 square feet. The ADU standards note that these units are "usually the size of a studio apartment". However, the limitation to 40% of the area of the primary dwelling is only applicable to ADUs within NorthWest Crossing (2.7.310.A).

Project Team Recommendation: The project team recommends advancing the currently-proposed text amendments but does not recommend increasing the size limit for ADUs or revising the specific standards for NorthWest Crossing. Creation of larger ADU units within an existing home may be more appropriately advanced through RTA 10b, which would allow conversion of an existing structure to a duplex or triplex outright in the RS and RL zones if there is no modification to the building footprint and if off-street parking requirements can be met.

TAC ACTION AND NEXT STEPS

The Residential TAC is asked to endorse the project team's recommendations on the issues raised above. Following this meeting, the project team will bring draft development code language for the proposed efficiency measures to the Residential TAC's next meeting in October.

Residential Efficiency Measures: Refinement and Implementation Strategies

Recommended Code and Map Amendments, Priorities, Adoption Strategy, and Comments
TAC Review Draft: August 19, 2015

Key:

- RTA = Residential Land Potential Text Amendments
- RMA = Residential Land Potential Map Amendments
- ETA = Employment Land Potential Text Amendments
- EMA = Employment Land Potential Map Amendments
- CDD = Community Development Department
- EDD = Economic Development Department
- PC = Planning Commission
- CWP = Central Westside Project
- TPR = Transportation Planning Rule

★ = High priority item

Table 1: Residential Lands Efficiency Measures, Potential Text Amendments

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 1a ★	Increase minimum density standards in RS and RM zones	**Set minimum gross density to 4 DU/acre for RS** (vs. 2 now); max density same (7.3).	**High**	UGB project	2.1.600 Residential Densities	Would not trigger TPR since still consistent with comprehensive plan. Specifically identified in Remand. Generally would not affect existing development (see RTA 2)
RTA 1b ★		**Set minimum gross density to 12 DU/acre for RM** (vs. 7.3 now); max density same (21.3).	**High**	UGB project	2.1.600 Residential Densities	Generally would not affect existing development (see RTA 2). Most areas planned for RM are close to transit and/or commercial services. 12 units per acre is generally considered a transit-supportive density. Would not trigger TPR since still consistent with comprehensive plan. Specifically identified in Remand.
RTA 2 ★	Limit and clarify exceptions to minimum density standards	**Revise exemptions to density standards.** Rather than exempting any redevelopment or infill within an existing pattern of development: • allow replacement of an existing single family home in any residential zone; • exclude sensitive lands (including wetlands, significant trees, steep slopes, floodplains, Areas of Special Interest, and Goal 5 resources) from land area used to calculate minimum, but not maximum, density (requires revising definition of density) • exempt development on vacant lots in approved subdivisions (except those identified for future phases); and • exempt infill and redevelopment on already-developed lots under an acre, provided that it does not decrease density.	**High**	UGB project	2.1.600.B Exceptions to Residential Density (paragraphs 7 and 8) and 2.1.600.A (intro text); Chapter 1.2 (definitions); 4.5.400.C.3	Because existing exemptions to density standards are broad and loosely worded, without these changes, stronger minimum density provisions may be undermined and have little impact. This will become more important as minimum density standards are increased. Needs to accompany minimum density increase so people can understand how the changes work together.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 3a	Adjust requirements for master planning to further promote desired housing types and densities	Reduce threshold to require master planned neighborhood development per 4.5.400 from 40 acres to 20 acres	Moderate to High	CDD/UGB project collaboration	4.5.400A	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.
RTA 3b ★		**Increase minimum required density for master planned developments from 60% of maximum density to 70% of maximum density for the zone** (calculated excluding acres used for non-residential development and acres of sensitive lands).	**High**	CDD/UGB project collaboration	4.5.400 C.3	This could have a fairly large impact on capacity. It is less important (and also less onerous) for the RS zone. It has more impact, but is potentially more challenging for developers, on sites with significant areas zoned RM or RH, where recent development has generally not been at the upper end of the allowed density range.
RTA 3c		Add provisions to address sites with multiple zoning districts, clarifying that the total required number of units is 70% of the maximum total that could be built, given the amount of land in each zone, but limiting ability to transfer density among zones.	Moderate	CDD/UGB project collaboration	4.5.400 C	With certain large opportunity sites potentially having multiple residential zones, it should be clear how the density standards apply, and ensure that a mix of housing types will be provided.
RTA 3d		Revise limitation on maximum density on area developed with housing so that it excludes land developed with non-residential uses, but not land preserved as open space, in order to make clustered residential development more feasible.	Moderate to High	CDD/UGB project collaboration	4.5.400 C.3	Current standards limit the maximum density of the area developed with housing to 110% of the maximum gross density. Implementing the clustered concept around the edges of the UGB may require additional flexibility to increase net residential density while keeping the maximum gross density the same.
RTA 4 ★	Reduce residential parking requirements to reduce development cost and allow more efficient use of land	Multifamily housing: **reduce parking requirements for all affordable housing and all multi-family within a quarter-mile of transit** 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). In addition, evaluate broader parking reductions for multifamily as part of the parking study.	Partially Done; **High** for remainder	UGB project / parking study	Table 3.3.300D	New provision adopted 05/05/15 reduced parking for affordable housing located within 660 feet of a transit corridor to one space per unit regardless of size. Parking ratios are a limiting factor on development density today.
RTA 5a	Decrease minimum lot size and dimensions in order to allow building at higher densities with single family (attached or detached) homes	Decrease minimum lot size in RM zone (and/or RM-2) for Single Family Detached from 3,000 to 2,500 square feet	Moderate	UGB project	Table 2.1.500	Smaller lot sizes make it easier to reach the upper range of the density. If not palatable everywhere, at least apply in proposed new RM-2 zone where minimum density is higher.
RTA 5b		Decrease minimum lot size in RH zone for Single Family Attached from 2,000 to 1,600 square feet	Moderate	UGB project	Table 2.1.500	The current minimum lot size limits single family attached to the very bottom end of the allowed density in the RH zone if there is very little right-of-way, but because the minimum density is a gross density standard, it may not be possible to meet the minimum density with single family attached housing in RH without including some multifamily housing as well unless the minimum lot size is decreased. With the minimum lot dimensions of 80'x20' (which relate to minimum block length), 1,600 sf is the smallest lot that would meet the width and depth standards.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 6a	Revise lot coverage and setback standards to allow greater utilization of small lots	In the RH zone, eliminate maximum lot coverage requirements; allow minimum parking and minimum landscaping requirements to set upper limit on lot coverage	Moderate	UGB project	Table 2.1.700	Common open space of at least 10% of site area (in addition to required setbacks and required private open space) is required for multifamily developments over 20 units.
RTA 6b		In the RM zone, increase maximum lot coverage for Single Family Attached and Single Family Detached dwellings from 40% to 60%	Moderate	UGB project	Table 2.1.700	Lot coverage on small lots may need to be higher in order to allow single family homes or townhomes at a typical size.
RTA 6c		In the RS zone, increase maximum lot coverage for two-story Single Family Attached dwellings from 35% to 50%	Low	UGB project	Table 2.1.700	Minimum lot area in the RS zone is 2,000 sf for single family attached housing. This limits townhomes on 2,000 sf lots to 1,400 square feet, which is fairly small. Allowing larger townhomes would have a minor impact on the feasibility/desirability of building townhomes in the RS zone. Single story already at 50% lot coverage.
RTA 6d		Modify floor area ratio limitations on new single family detached homes and expansions: • Apply to all lots under 6,000 square feet in all residential zones, regardless of plat date or adjacent land plat date, except as modified through the Master Plan provisions (for simplicity) • Set maximum floor area to 2,000 square feet or half the lot area, whichever is greater (to ensure development is still feasible on the smallest lots)	Low to Moderate	CDD	2.1.400	The floor area ratio is more restrictive on smaller lots; in the RM zone, it would limit a home on a 2,500 square foot lot (if the reduced lot size is approved) to 1,250 square feet, which is fairly small.
RTA 6e		Reduce front setback from 10' to 5' in RM (and/or RM-2) zone for Single Family Detached and Single Family Attached, except where fronting on Collector or Arterial streets. Retain garage setback of 20' to ensure any parking of vehicles does not extend into public rights of way (sidewalk).	Low	UGB project	Table 2.1.300 and text in 2.1.300C	Would make it easier to build on smaller lots.
RTA 7a	Revise or eliminate standards that restrict the development potential of infill sites	Eliminate the residential compatibility standards under 2.1.300(G) entirely or remove all restrictions on lot size.	In progress; Moderate	CDD	2.1.300G	This provision was intended to protect properties outside the UGB from incompatible development at urban levels on the inside of the boundary. It was debated by council at the time and expanded to apply to any property inside the boundary as well. This should be repealed and possibly replaced by the provisions to buffer for fire protection at the edge of the UGB. Code amendments before the Planning Commission in June include significant revisions to the residential compatibility standards to limit them to apply only to lots abutting RL land and to affect only setbacks (removing lot size restrictions).

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 7b		Change building height threshold for increased side & rear setbacks in RH & RM zones: • Increase height threshold from 20' to 30' • Apply only to buildings abutting the RS zone, not existing single-family housing in other zones	Low	CDD	Table 2.1.300 and text in 2.1.300E	This was not modeled explicitly but is a "supportive" measure. As currently written, the code would require a 2-story building in the RH or RM zone abutting any existing single family home (even in the same zone) to be set back more than the 5' minimum from the shared lot line (setbacks increase by 0.5 ft for each foot by which the building height exceeds 20 ft. when abutting single family housing or the RS zone). The RS zone height limit is 30'. When buildings in abutting higher density zones will be taller than this, it is reasonable to require those buildings to be set back more than the minimum, but buildings that are under 30' should not have to be set back more than they would be in the RS zone. May get compatibility argument in older neighborhoods.
RTA 7c		Allow exceptions to minimum lot width and depth in conformance with BDC 4.5.200 (Infill Options)	Low to Moderate	CDD	Table 2.1.500; 4.5.200	Table 2.1.500 already notes an exception to minimum lot width in the RS and RM-10 zones for "flag lots and lots served by private lanes (see BDC 4.5.200)". This does not appear to apply to lot depth or to the RM zone. Enabling the type of infill described in 4.5.200 may flexibility on lot width and/or depth, depending on the option selected.
RTA 8	Preserve the RH zone for attached housing types	Prohibit new Single Family Detached housing in the RH zone (existing single family homes would be permitted and would be allowed to be replaced)	Moderate	UGB project	Table 2.1.200 Land Uses;	There is relatively little RH-zoned land in the current UGB and many places to build single family housing other than the RH zone; multifamily capacity could be eroded if RH land is developed with single family homes. 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. This was originally proposed in 2006 when the Dev Code was updated and was not successful. If prohibiting single family detached in RH is not palatable now, consider decreasing the minimum lot size for single family detached in the RH zone to 2,000 sf (from 2,500 sf) and other modifications to development standards (e.g. reducing front setbacks and eliminating maximum lot coverage) to make it possible to meet the minimum density with Single Family Detached housing, and add a footnote in Code table to make it clear that SFD has to meet minimum density requirements for the zone.
RTA 9a	Allow cluster / cottage housing development	In RS zone, allow cluster / cottage housing up to max density in RS zone, otherwise same standards as for NW Crossing	Done	Done	New Chapter - 4.5.600 adopted 5/6/2015	New code amendments adopted 5/6/2015 allow cottage housing in the RS zone. Minimum density for cottage housing in RS was set at 4 units/acre, with a density bonus for affordable housing.
RTA 9b		In RM zone, allow cluster / cottage housing at gross densities allowed in the RM zone, otherwise same standards as for NW Crossing	Done	Done	New Chapter - 4.5.600 adopted 5/6/2015	New code amendments adopted 5/6/2015 allow cottage housing in the RM zone. Minimum density for cottage housing in RM was set at 12 units/acre, with a density bonus for affordable housing.
RTA 10a	Make it easier to develop duplexes and/or triplexes	Allow duplexes outright rather than conditionally on corner lots in the RL zone & RS zone, subject to existing standards	Done	Done	New Chapter provisions change to table 2.1.200 adopted 5/6/2015	New Code Amendments allow duplex units on corner lots in RS and RL. Triplexes do not lend themselves to corner lots as easily.

Ref #	Efficiency Measure Concept	Description	Priority Level	Adoption Strategy	Affected Code Provision(s)	Comments / Notes:
RTA 10b		Allow conversion of an existing structure to a duplex or triplex outright in RS and RL if there is no modification to the building footprint and parking requirements can be met (waive minimum lot size for duplex – subject to SFD min lot size)	Low to Moderate	CDD	Table 2.1.200	This would allow an increase in density and mix in existing neighborhoods with minimal impact. Converted units are more likely to be small and affordable than new construction. The parking requirements may limit the applicability of this option, especially if they are not reduced as recommended elsewhere in this table. This may not comply with maximum density standards – may need exception in order to enable this.
RTA 10c		For subdivisions creating 10 or more new lots in the RS zone, allow creation of duplex and triplex lots that meet lot size standards for those housing types in locations other than corners (require recording on plat). Allow duplex and triplex outright on lots that were identified for those uses on the plat at land division.	Low to Moderate	CDD	Table 2.1.200, Chapter 4.3? Also see 2.1.600.A	This would make it easier to build new duplex and triplex units in new neighborhoods where they can be designed to fit in from the beginning.
RTA 10d		Change parking requirements for duplexes and triplexes to regulate based on the number of bedrooms: 1 for 1 bedroom and 2 for 2 or more bedrooms	Moderate	CDD	Table 3.3.300	This is consistent with how multifamily housing parking requirements are structured and would reduce parking requirements for smaller units.
RTA 11a	Make creation of Accessory Dwelling Units (ADUs) easier	Permit ADUs outright rather than conditionally in SR 2 1/2, RL and RS zones on lots created prior to December 1998; create and apply new ADU design standards	Low to Moderate	CDD with Planning Commission	Table 2.1.200 Land Uses; Chapter 3.6	This change affects a relatively limited amount of land and would generate a relatively small number of additional units. The existing residential design standards applicable to ADUs are not working, according to current planning staff. ADUs should have their own, new easy-to-apply design standards. Creating those is outside the scope of the UGB project.
RTA 11b		ADUs: waive off-street parking requirement for ADUs added to an existing developed lot where existing home meets or will be made to meet off-street parking requirements	Low	CDD	Table 3.3.300 and development standards in 3.6.200B	Supportive measure that could remove barriers to adding ADUs to existing homes. Little potential impact on capacity.

Table 2: Residential Land Efficiency Measures, Potential Map Amendments

Ref #	Efficiency Measure Concept	Area[1]	Priority Level	Changes to Zoning Map	Changes to General Plan Map	Adoption Strategy	Comments / Notes:
RMA 1 ★	Create complete and efficient new neighborhoods on large vacant residential sites	**Opportunity Area 7: SE 15th St**	**High**	RS to a mix of RS, RM, RH, CC, and ME	RS to a mix of RS, RM, RH, CC, and ME	UGB project – policy language	Will likely require TPR analysis. Owners' master plan includes ME on the northern end, adjacent to the railroad. This may be appropriate to create a more complete community. If adoption of the plan and zone amendments is not feasible with UGB adoption due to TPR issues, an alternative may be to identify the area as an opportunity area and write policy language describing the long-term vision for the area and the general mix of uses and housing types envisioned there. Because this area will be required to undergo master-planning, and because the master plan requirements include findings of consistency with the General Plan, development on the site would have to be consistent with a General Plan policy to this effect.
RMA 2 ★	Make efficient use of constrained sites while preserving natural areas near the river through clustered housing	**Opportunity Area 9: COID Property**	**High**	None	PF to RS	UGB project – policy language	Although this has existing residential zoning, its plan designation is PF, which will have to be changed before development can occur. Will likely require TPR analysis.
RMA 3		Opportunity Area 8: River Edge	Low	RL to RS	None	Development application	Site has an existing plan/zone conflict. Current city regulations would require rezoning prior to development through a fairly simple review process. Would not trigger TPR analysis
RMA 4	Up-zoning for transit-supportive residential development and to encourage infill	Reed Market & 15th (SW corner)	Moderate	RS to RM & CC	RS to RM & CC	UGB project – policy language	Total of 16 acres; over 12 acres under common ownership. Adjacent to transit; potential for small, walkable commercial area to serve adjacent neighborhoods. Would require TPR analysis.
RMA 5		Brosterhous corner	Moderate	RS to RM	RS to RM	UGB project – policy language	Total of 27 acres; over 10 acres under common ownership. Adjacent to transit. Would require TPR analysis.
RMA 6		Bear Creek & 27th area	Low to Moderate	RL and RS to RM and/or RH	RL and RS to RM and/or RH	UGB project – policy language	Would require TPR analysis. Area is adjacent to transit and walkable to commercial areas. Vacant parcels are relatively small but cumulative effect over time could be meaningful. Little infill/redevelopment likely within 2028 planning horizon, but may be relevant for ILUTP.
RMA 7		Boyd Acres area	Low to Moderate	RM to RH	RM to RH	UGB project – policy language	Total of roughly 25 acres; over 18 acres under common ownership. Largely vacant. Adjacent to transit. Would require TPR analysis.

[1] See attached map for locations referenced.

Table 3: Employment Lands Efficiency Measures, Potential Text Amendments (selected amendments relevant to housing in commercial and mixed use zones)

Ref #	Efficiency Measure Concept	Description	Priority Level	Affected Code Provision	Adoption Strategy	Comments / Notes:
ETA 1a ★	Encourage vertical mixed use in commercial and mixed use areas	**Adopt Bend Central Multi-modal Mixed Use Overlay Zone**	**High**	Chapter 2.7	UGB project, CDD & EDD collaboration	Modeling work assumes mixed use generally consistent with the MMA recommendations, including increased height limits. Adoption of the Central Area Plan and 3rd Street MMA may require a financing strategy to pay for infrastructure improvements. Some provisions may be pulled out of the MMA overlay for use more broadly; code amendments would need to be adjusted accordingly. In addition, a few questions remain in the proposed code amendments for the MMA; these will need to be resolved prior to adoption.
ETA 1b		Create a new mixed use zone or overlay. Require mixed use or more strongly encourage than in current commercial zones.	Moderate	Chapter 2.7 or Chapter 2.3	Evaluate and refine through Central Westside Project	We have assumed a new mixed use designation that has more residential emphasis than the current commercial designations do in certain limited areas, including along part of Highway 20 near downtown and along certain commercial corridors in the central west side of the city. The CWP may make recommendations for mixed use zones or overlays for that area – if one is developed that would be appropriate for Highway 20 area, it can be applied there as well. If the CWP does not identify any new mixed use zones or overlays, this would be applied in such a limited area that it may not be worth pursuing. UGB project could identify key ideas from MMA code recommendations that should be considered for broader application in walkable, mixed use areas.
ETA 1c		Allow a reduction in total parking requirements for vertical mixed use developments (by 5% to 25% depending on the area, e.g. 5% baseline, additional 5% if within a quarter mile of transit, additional 5% if certain pedestrian amenities are provided, etc.)	Moderate	3.3.330.C.4	Evaluate and refine through parking study	If a walkable commercial areas overlay is created, this would be an appropriate incentive to apply in those areas. (Originates from MMA recommendations.)
ETA 1d		Allow 10' height bonus for residential on upper floors (as part of vertical mixed use) in the MR District	Moderate	Table 2.3.300	UGB project	This would be consistent with a provision in the commercial zones (see 2.2.400.B.1) and would provide an incentive for vertical mixed use. If controversial based on view concerns, consider limiting to certain areas of the MR District.
ETA 1e		Revise Convenience Commercial Development Standards to create an exception to maximum building size standards for vertical mixed use	Low to Moderate	2.2.400.C	CDD	Existing standards for the CC zone restrict building size. They do not contain an exception for residential uses. The CC zone is often used in areas where mixed use would be appropriate; making it easier to build residential above commercial in these areas could remove a barrier to vertical mixed use (though this is likely not the main reason why vertical mixed use is not common in those areas).

Table 4: Employment Lands Efficiency Measures, Potential Map Amendments

Ref #	Area[2]	Description	Priority Level	Changes to Zoning Map	Changes to General Plan Map	Adoption Strategy	Comments / Notes:
EMA 1a	**Opportunity Area 1: Central District Mixed-Use Multimodal Area (MMA)**	Rezoning some areas to ME	Moderate to High	IL to ME between Hwy 97 and 2nd street in certain areas	None	UGB project	Consider as interim solution to allow broader range of uses and greater flexibility for near-term.
EMA 1b ★		Apply MMA overlay	**High**	Apply special plan district Hwy 97 to 4th street south of Revere	None	UGB project, CDD & EDD collaboration	Adoption of the Central Area Plan and 3rd Street MMA may require a financing strategy to pay for infrastructure improvements.
EMA 2 ★	**Opportunity Area 4: SW Century Drive**	Area becomes university-serving mixed-use community with housing component.	**High**	TBD	TBD	Evaluate and refine through Central Westside Project	UGB project will roll in land use designations and recommended map amendments from preferred scenario selected through CWP.
EMA 3	Opportunity Area 2: East Downtown	Becomes an extension of downtown	Moderate to High	CG to CB	CG to CB	UGB project – policy language	Likely triggers TPR analysis. Would require text amendments to CB zone development standards to apply appropriate height limits (2.2.800.H.2) and consider whether all design standards/guidelines should apply to the blocks facing Hwy 97. Current zoning and parcelization does not allow economics to work in favor of redevelopment. More intensive designation may be required to incentivize redevelopment.
EMA 4	Opportunity Area 5: Mill District/Core Pine	Becomes new designation, similar to Mixed Riverfront in character, to create a new mixed use, multi-story, retail, office, housing, entertainment district.	Moderate to High	IG to MR or ME	IG to MR or ME	UGB project – policy language	If MR designation is applied, height limits for that designation may need to be revisited to allow taller buildings in this area. Big redevelopment opportunity. Large property close in. Current industrial use is not a good fit for surrounding uses.
EMA 5	Opportunity Area 3: Central Highway 20	Becomes Neighborhood Mixed Use corridor with limited multifamily attached.	Low to Moderate	Mixed use overlay from 4th to 10th along Hwy 20	None	UGB project – policy language	Depending on approach to encouraging mixed use (see ETA 1b & 1c), an overlay may or may not be needed for the commercial zoning along Hwy 20. Could support a greater mix of retail, or small scale mixed use.

[2] See attached map for locations referenced.

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Bend Urbanization Report

Bend's Growth to 2028

Draft, Part 1: August 19, 2015

DRAFT

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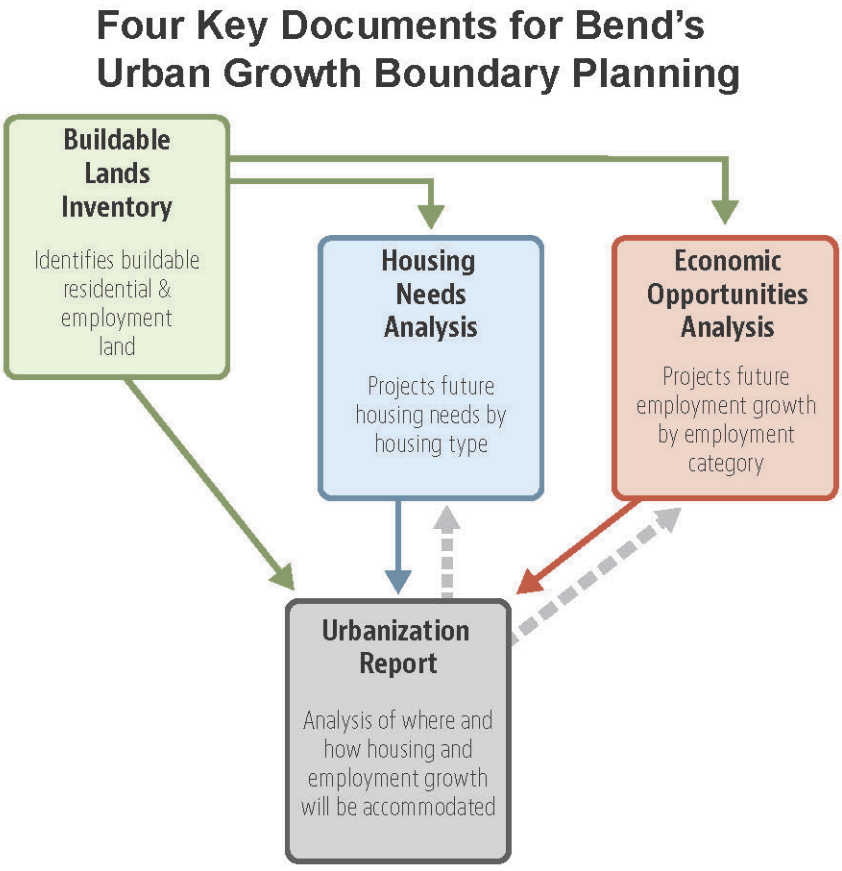
EXECUTIVE SUMMARY

Introduction

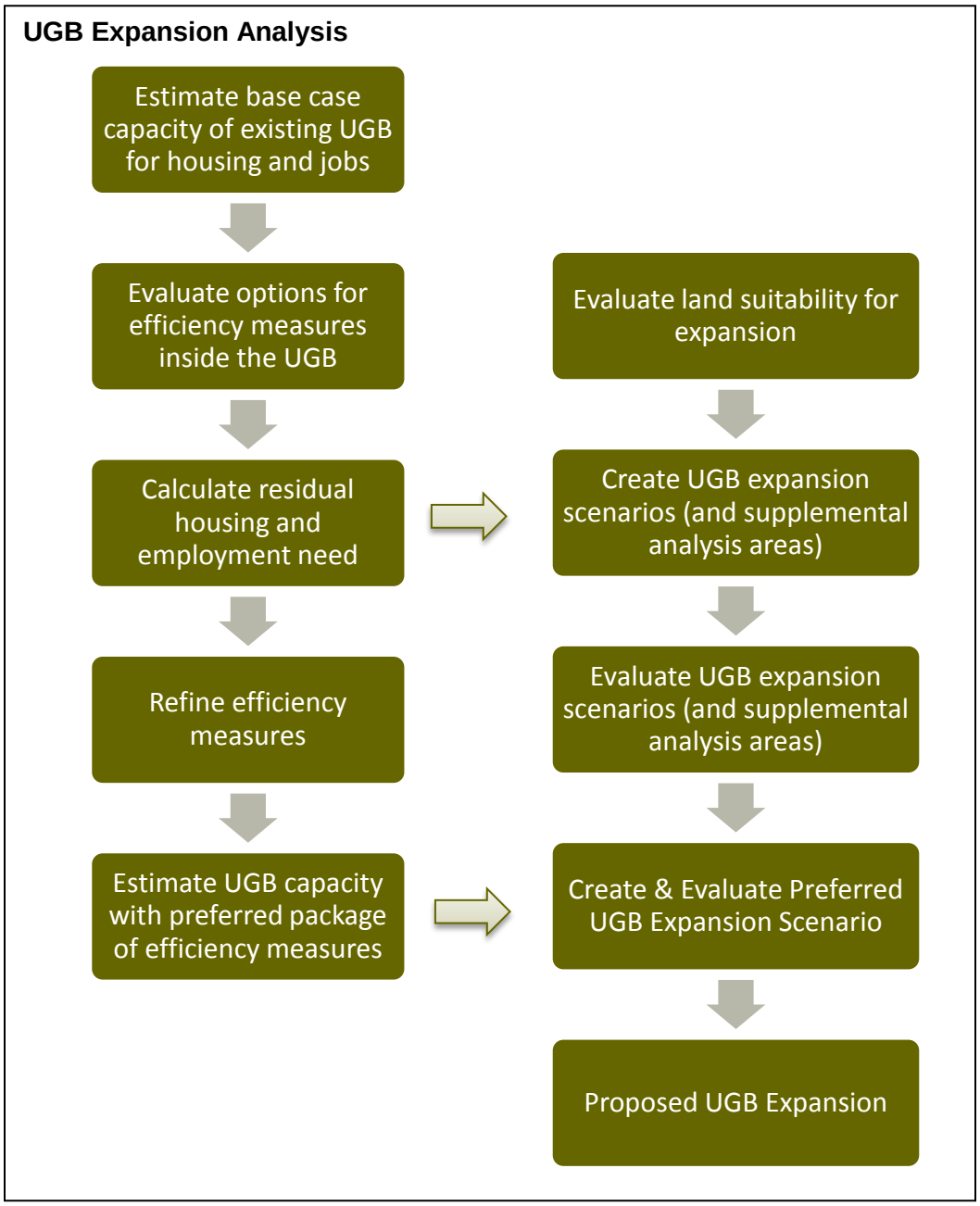
The Urbanization Report presents an analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas. The analysis addresses requirements pertaining to UGB expansions under Oregon state law and administrative rules. The Urbanization Report draws on information from the Housing Needs Analysis, the Economic Opportunities Analysis, and the Buildable Lands Inventory, as illustrated on Figure ES-1.

Figure ES-1: Relationship of Urbanization Report to other Technical Documents for UGB Planning



This Urbanization Report: summarizes the methodology used to determine land sufficiency and future UGB land need (illustrated in Figure ES-2); estimates the capacity of the existing UGB under current policies and with land use efficiency measures applied; summarizes the remaining residual growth that cannot be accommodated within the existing UGB; documents the evaluation of UGB expansion alternatives;, identifies proposed UGB expansion areas to meet residual land needs; and, documents the factual base for the inclusion of expansion area in the UGB.

Figure ES-2: UGB Expansion Analysis Process Summary



A scenario planning tool called "Envision Tomorrow"[1] was used to analyze capacity and options for future growth in Bend. Envision Tomorrow applies development assumptions spatially and provides a sketch-level analysis of the possible impacts of policies, development decisions and growth trajectories. Development assumptions within the model include: a mix of specific building prototypes, which are based on information including parking requirements, height limits, and lot coverage ratios; streets, neighborhood parks, and other set-asides; net residential and job density; and rate of redevelopment. All assumptions are calibrated to Bend's

[1] Information and download available at http://www.envisiontomorrow.org/

development and market conditions. The model summarizes total residential and employment growth, including providing information about the overall mix of units and jobs, and can be used to provide sub-area summaries. It also provides a comprehensive range of indicators relating to land use, housing, demographics, economic growth, environmental factors, and quality of life. To complement the indicators available in Envision Tomorrow, additional modeling and analysis tools were used to evaluate infrastructure needs and implications of UGB expansion scenarios, including a Travel Demand Model for transportation analysis and water and sewer optimization models.

Base Case UGB Capacity

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.

In total, the base case shows that the current UGB (as of July 2014) can accommodate roughly 9,300 housing units and a little over 12,000 jobs under the current plan designations and policies and historic trends in development density. This represents just over half of both the total housing and total employment needs forecasts for 2028. The estimated capacity is not evenly distributed across all needed housing types and employment categories.

The mix of housing units projected under the base case is roughly 70% single family detached, 25% multifamily, and 5% single family attached, because most of the total housing capacity (over 60%) is in the Standard Residential (RS) plan designation. As a result, much of the total single family housing need can be met inside the UGB in the Base Case, but only about a third of the single family attached and multifamily housing needs, respectively, can be accommodated.

The mix of jobs that can be accommodated inside the UGB under the base case is a fairly even split between retail/hospitality, office, industrial, and public. All of the public employment needs (and more) can be accommodated on existing land inside the UGB; about 60% of the retail/hospitality, half the industrial, and a third of the office needs can be met inside the UGB.

These results indicate a need for land use efficiency measures to increase the likelihood that needed housing types will be built inside the UGB, and to make better use of both residential and employment land inside the current UGB.

[Note: the remainder of the executive summary will be written as the other chapters of the report are prepared.]

CHAPTER 1. INTRODUCTION

Role of the Urbanization Report

The Urbanization Report presents an analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas. The purpose of this report is to address requirements pertaining to UGB expansions under Oregon's Statewide Planning Goal 14 (Urbanization) and Oregon Administrative Rule (OAR) 660, Division 24 (these are summarized in the following section). The Urbanization Report is a supporting document of the City of Bend General Plan, referred to as the Bend Comprehensive Plan in this report.[2] The Urbanization Report:

- documents current UGB capacity under existing policies and based on historic development trends and current land supply from the Buildable Lands Inventory, including documentation of the capacity analysis methodology, assumptions and results;
- documents land use efficiency measures those considered, those applied, and their impact on capacity;
- translates growth projections from needed housing units and jobs by type (based on projections in the Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA) to needed acres by plan designation;
- summarizes the remaining residual growth that cannot reasonably be accommodated within the existing UGB, documents the evaluation of alternative boundary location alternatives; and
- identifies proposed UGB expansion areas to meet residual land needs documented by a factual base for their inclusion in the UGB.

The Urbanization Report is one of four related technical reports that contain the City's analysis related to growth (see Table 1). The documentation of housing and employment need projections is contained in the HNA and the EOA; this report will include only the final need numbers. Existing land supply is documented in the Buildable Lands Inventory (BLI); this report will include only brief references and results. The policies that implement the conclusions from this report and the other supporting reports are found in the City's Comprehensive Plan.

[2] The Bend General Plan is the official title of the city's comprehensive plan as of the writing of the first public review draft of this report. The City anticipates amending the title to be Bend Comprehensive Plan when the plan is amended in 2016.

Table 1: Four Key Documents for Bend's Urban Growth Boundary Planning

Document	Buildable Land Inventory (BLI)	Housing Needs Analysis (HNA)	Economic Opportunities Analysis (EOA)	Urbanization Report (UR)
Purpose	Identify buildable residential & employment land by category	Address the requirements for planning for needed housing, including analysis of national, state, and local demographic and economic trends, and recommendations for a mix and density of needed housing types	Document historical employment and demographic trends, the projection of employment growth, identification of target industries, and evaluation of site characteristics needed to accommodate target industries	Analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas
Primary Legal Standards[3]	ORS 197.296 OAR 660, Divisions 8 and 9	Statewide Planning Goal 10: Housing ORS 197.296 and 197.303 OAR 660, Division 8	Statewide Planning Goal 9: Economic Development OAR 660, Division 9	Statewide Planning Goal 14: Urbanization ORS 197.298 OAR 660, Division 24
Key Subject Matter	Development status categories and definitions Methodology for assigning categories and conducting inventory Inventory results: acres by plan designation and development status	Projection of population and total housing growth Housing market and development trends Demographic characteristics and trends Analysis of affordability Estimate of needed housing (mix and density) Comparison of housing capacity to need	Existing policy and vision National, state, local trends Employment projections Target industries Site needs and characteristics Special site needs Redevelopment analysis Comparison of employment capacity to need and characteristics	Methodology for capacity estimates Pre-policy ("base case") capacity estimate for current UGB Efficiency measures (EMs) proposed Current UGB capacity with EMs UGB alternatives evaluation methodology and results Proposed UGB expansion and summary of Goal 14 evaluation results

[3] OAR = Oregon Administrative Rules; ORS = Oregon Revised Statutes

Framework for the Urbanization Report

State Statutes and Administrative Rules

Overview

Statewide Planning Goal 14 requires that cities establish and maintain UGBs to provide land for urban development needs and to identify and separate urban and urbanizable land from rural land. Goal 14 and Oregon Revised Statutes (ORS) 197.296 and 197.298 contain requirements for how local governments identify how much land is required to meet urban development needs, how they establish the capacity of the existing UGB, and how to identify and evaluate land for UGB expansion if needed. These requirements are summarized in brief below; the full text of the relevant statutes and rules is included in Appendix A.

Establishing Land Needs

Establishment and change of the UGB must be based on the demonstrated need for housing, employment opportunities, and/or other urban land uses such as public facilities, streets and roads, schools, parks or open space over a 20-year period.[4] Housing needs must be established consistent with a coordinated 20-year population forecast, the requirements for determining housing needs in Goals 10 and 14, and related rules and statutes (see Bend Housing Needs Analysis for a summary of these requirements).[5] Employment needs must comply with applicable requirements of Goal 9 and related administrative rules (see EOA for a summary of these requirements). [6]

Inventory and Land Sufficiency

Local governments "must inventory land inside the UGB to determine whether there is adequate development capacity to accommodate 20-year needs". Inventories must comply with requirements in OAR 660-024 and other statutes and rules (see Bend Buildable Lands Inventory for a summary of these requirements).[7]

"If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs ..., 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."[8] Local governments may adopt new measures that increase the housing capacity of the existing UGB as part of meeting demonstrated housing needs.[9] Local governments must demonstrate that needs cannot

[4] Goal 14: OAR 660-015-0000(14), effective April 28, 2006.

[5] OAR 660-024-0040(4), effective March 25, 2015.

[6] OAR 660-024-0040(5), effective March 25, 2015.

[7] OAR 660-024-0050(1), effective March 25, 2015.

[8] OAR 660-024-0050(4), effective March 25, 2015.

[9] ORS 197.296(6) through (9), effective 2003.

reasonably be accommodated on land already inside the urban growth boundary prior to expanding the UGB. [10]

Identifying Boundary Expansion Areas

In considering locations for UGB expansions, local governments must determine which land to add by evaluating alternative boundary locations.[11] State statute classifies rural land into priority categories for purposes of evaluating potential UGB expansions, with the intent of protecting high-value agricultural and forest land for those uses. Local governments must begin by evaluating the highest priority of land available, and determine whether land in that priority category is suitable and sufficient to meet the identified land needs before moving on to consider land in lower priority categories.[12] If there is more land in a given priority category than needed to satisfy the deficiency, local governments must consider and balance four factors in Goal 14 to choose which land from that priority category to include in the UGB:

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.[13]

The "relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services" must also be evaluated and compared.[14] The local government may specify certain characteristics that are necessary for land to be suitable for specific types of identified land needs, and may consider only land that has those characteristics.[15]

Prior Work and Remand Issues

UGB Expansion History

The City's process for demonstrating a need for UGB expansion began in 2004, and included the development and adoption of a coordinated population forecast with Deschutes County, followed by three years of technical work on buildable lands inventories, housing needs analysis, economic opportunities analysis, forecasting additional residential and employment lands, and public facilities (water, sewer, transportation) planning. The City and county

[10] Goal 14: OAR 660-015-0000(14), effective April 28, 2006; OAR 660-024-0040(1), effective March 25, 2015; and OAR 660-024-0050(4), effective April 16, 2009.

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

[12] ORS 197.298, effective 1999; and OAR 660-024-0060(1), effective April 16, 2009.

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

[14] OAR 660-024-0060(8), effective April 16, 2009.

[15] ORS 197.298, effective 1999; and OAR 660-024-0060(5), effective April 16, 2009.

conducted extensive public outreach, including work sessions and hearings, on the UGB expansion in 2007 and 2008. The Bend City Council and Deschutes County Board of County Commissioners' approved the UGB expansion proposal in 2009. These local adoptions were followed by a number of appeals to the Land Use Board of Appeals (LUBA) and Land Conservation and Development Commission (LCDC).[16] The Oregon Department of Land Conservation and Development (DLCD) Director's Report in January 2010 remanded the proposal back to the City for further work; the City of Bend and 11 other parties filed appeals to LCDC. In November 2010, LCDC issued an order that partially acknowledged and partially remanded Bend's proposed UGB expansion. Certain elements of the City's proposal were approved (acknowledged); the remaining elements required additional explanation and/or work (remand). The Commission's final order became final on January 3, 2011. That order is referred to as the Remand.

From January 2011 to the present, the City established a special Task Force and then three Technical Advisory Committees supported by city staff and a team of consultants working to address the issues raised in the Remand.

Remand Issues Addressed

This report provides updated analysis related to a number of issues raised in the Remand. These are summarized in brief below, with references to their number in the Remand Scope Index, which was prepared by City staff to compile all Remand directives to the city (see Appendix B for index of relevant Remand directives; details of how each Remand issue has been addressed will be in the Findings Report).

- Determining current UGB capacity based on past trends and current policies (see Remand Directives 2, 12 through 14, 58, 59 and 75);
- Consideration of land use efficiency measures (see Remand Directives 26 and 30 through 50);
- Documentation or re-evaluation of the employment land redevelopment rate (see Remand Directives 62 and 63); and
- Evaluation of alternative expansion areas (see Remand Directives 22, 91, 93 through 101, 105 through 110).

Time Periods and Data used in the Urbanization Report

State statute and rule requires the use of a 20-year planning horizon for UGB expansion. OAR 660, Division 24, clarifies that the 20-year period must begin on the date initially scheduled for completion or adoption of the amendment.[17] Because this report is completing work required under the Remand of the 2009 UGB expansion proposal, the 20-year planning period begins in 2008 and runs through 2028. However, this report is being completed in 2015/2016 based on analysis that began in 2014. Despite the economic recession that affected most of the

[16] LUBA dismissed the appeals after the City showed the matter was before LCDC.

[17] OAR 660-024-0040(2), effective March 25, 2015.

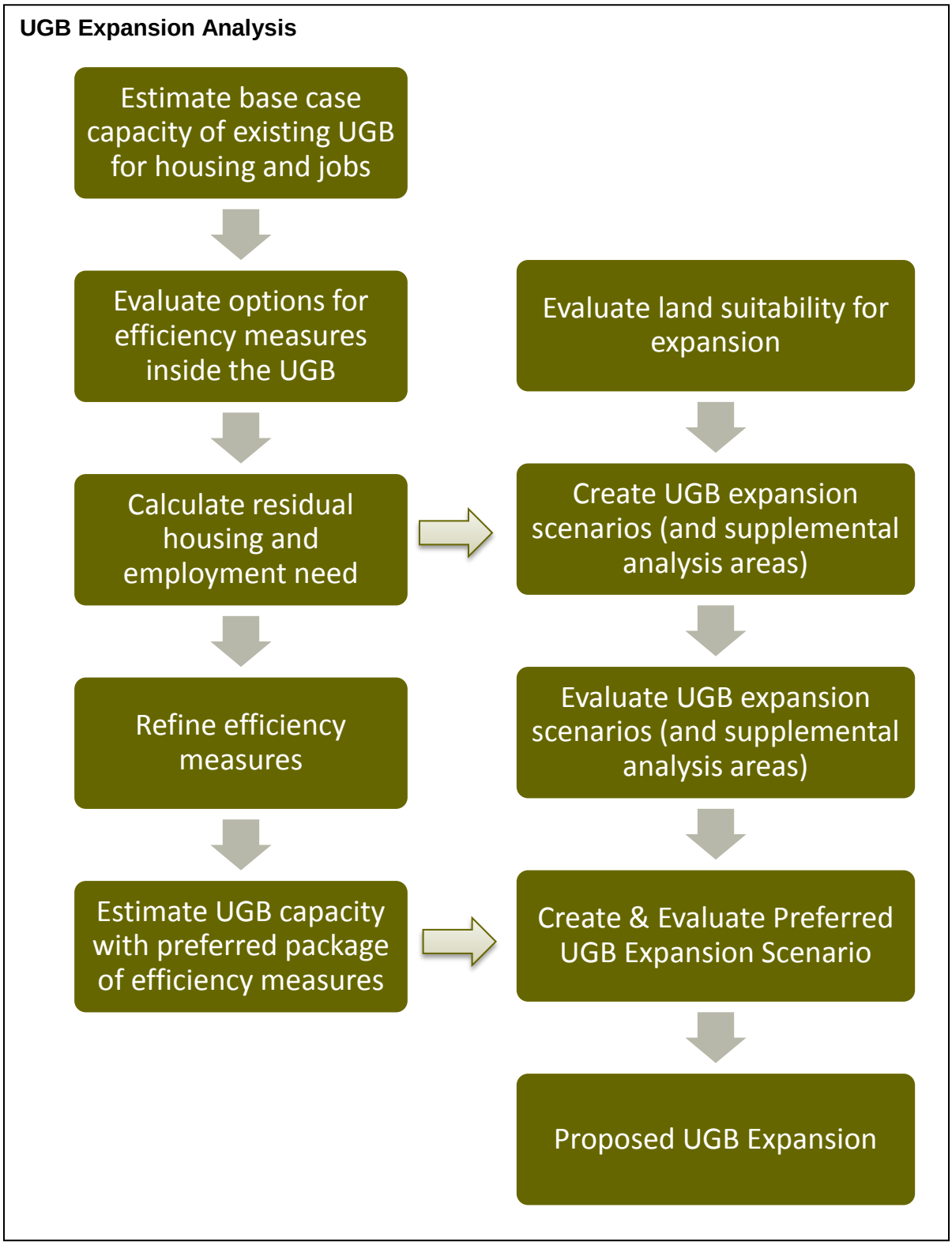
intervening years, development did occur in Bend between 2008 and 2014 (and continues as this report is being prepared). To provide the most current data possible of remaining capacity inside the current UGB and how much of the projected 20-year housing and employment growth has already occurred, the buildable lands inventory was updated in 2014 and housing and employment growth through 2014 has been estimated and deducted from the projected 2028 needs. This report focuses on the remaining capacity and growth needs from 2014 to 2028.

CHAPTER 2. METHODOLOGY

Analysis Steps

The process of determining land sufficiency and UGB expansion need is summarized in Figure 1. Each step of the process outlined in Figure 1 is summarized in this report. In addition to the process described in Figure 1, three different Technical Advisory Committees (TACs) and a UGB Steering Committee (USC) were used to guide the technical work and make decisions prior to formal adoption by the governing bodies. The TACs and USC provided guidance and feedback on each step of the process described in Figure 2 through more than 10 meetings taking place over nearly two years.

Figure 1: UGB Expansion Analysis Process Summary



Analysis Tools

Overview

A scenario planning tool called "Envision Tomorrow"[18] was used to analyze capacity and options for future growth patterns in Bend. Envision Tomorrow applies development assumptions spatially and provides a sketch-level analysis of the possible impacts of policies, development decisions and growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, environmental factors, and quality of life. (See next section for more on this model and how it works.)

To complement the indicators available in Envision Tomorrow, additional modeling and analysis tools were used to evaluate infrastructure needs and implications of UGB expansion scenarios, including a Travel Demand Model for transportation analysis (to supplement a transportation analysis tool that is part of Envision Tomorrow's suite of planning tools) and water and sewer optimization models. These tools and their role in this analysis are discussed in more detail in Chapter 5.

About the Envision Tomorrow model

Envision Tomorrow applies a set of assumptions about future development spatially to land with development or redevelopment potential. These assumptions are organized into "development types" that reflect different types of residential and employment development. The model does not predict exactly how a given parcel will develop; rather, it applies a mix of different types of development and land set-asides (using percentages of available acres) across multiple parcels. Results are calculated at the parcel level, but, because they represent blended averages for future development rather than site-specific assumptions, they are only appropriate to report at a summary level.

The development types generally represent Bend's Comprehensive Plan designations. Assumptions within the development types were calibrated to Bend by the project team with the best available information and with Technical Advisory Committee (TAC) direction at various stages. Development type assumptions include:

- A mix of specific building prototypes, which are based on information including parking requirements, height limits, and lot coverage ratios from the current Development Code (and as modified through specific Efficiency Measures);[19]
- Streets, neighborhood parks, and other set-asides;
- Net residential density and net job density; and
- Rate of redevelopment.

Each of these assumptions is discussed in Chapter 3, beginning on page 15.

[18] Information and download available at http://www.envisiontomorrow.org/

[19] Prototype buildings were reviewed by the Residential and Employment TACs in August, 2014.

Development types are assigned to lands through "painting" tax lots, or portions of tax lots.[20] Each buildable acre of land where a development type is applied is assigned a percentage of each of the building types as well as the specified percentage set asides that comprise the development type. The identification of buildable land is described in detail in the BLI. That report should be consulted for details, but, in brief:

- Development constraints, such as floodplains and steep slopes, are identified as "constrained" in the model, and no development or redevelopment is assigned to them.
- Existing development is identified as "developed" in the model;[21] growth on "developed" land is controlled through the redevelopment rate in each development type. The redevelopment rate specifies what percentage of the developed land should have the development assumptions of the development type applied to it. It does not specify which land exactly is redeveloped, only how much of it is redeveloped overall.
- Unconstrained and undeveloped land is identified as "vacant" in the model; growth is projected on vacant land using the assumptions built into the development type.

The model summarizes total residential and employment growth, including providing information about the overall mix of units and jobs, for the scenario as a whole. The model can also be used to provide sub-area summaries for a variety of different geographic areas. In addition, because the model incorporates financial information (including locally-calibrated construction costs) for each of the building prototypes, the model can provide information about the affordability of future development.

Envision Tomorrow also includes a specialized tool for analyzing vehicle miles traveled and mode split based on the future land use and household characteristics. This tool is discussed further in Chapter 5 (see page X) with regard to evaluation of UGB expansion alternatives.

Forecasts and Land Needs

The methodology and details of the population/housing unit and employment forecasts summarized in this section can be found in the HNA and EOA, respectively. The tables below summarize the remaining need within the planning period (2014 to 2028) by housing type and employment category for reference only. The translation of these housing and employment needs (units and jobs) to land needs in terms of acres by plan designation is presented in Chapter 5.

[20] Inside the UGB, large tax lots (over 14 acres) were split into 14-acre grid squares in order to allow assigning multiple development types to a single large parcel. Outside the UGB, tax lots were divided into 3.5-acre grid squares.

[21] See Step 4 of the BLI for how vacant and developed acres were determined for lots that have some development but also have remaining development potential.

Table 2: Summary of New Housing Units by Type and Category, Bend UGB, 2014-2028 [22]

Needed Housing Types	2014-2028 Needed Housing Units		2014-2028 Needed Group Quarters Units	2014-2028 Second Homes	2014-2028 Total New Housing Units	
	Units	Mix	Units	Units	Units	% of Total Units
Single-family detached (including mobile homes)	7,574	55%		1,652	9,225	54%
Single-family attached	1,377	10%		300	1,677	10%
Multifamily	4,819	35%	461	1,051	6,331	37%
Total	**13,770**	**100%**	**461**	**3,003**	**17,234**	**100%**

Table 3: Employment Forecast by Employment Category, non-shift workers, Bend 2013 to 2028 [23]

Employment Categories	2013 Employment	2028 Employment Forecast	2013 to 2028 Growth
Industrial			
Industrial Heavy	2,889	5,180	2,291
Industrial General	3,771	8,002	4,231
Retail			
Large Retail	3,057	5,849	2,792
General Retail	3,096	5,293	2,197
Office/Srv/Medical	16,435	23,593	7,158
Leisure and Hospitality	4,017	5,532	1,515
Other / Misc	1,505	1,547	42
Government	3,894	5,611	1,717
Total	38,664	60,607	21,943

[22] Based on the definitions in OAR 660-008-0005 and in the Bend Development Code, the needed housing types are defined as follows:

- "Attached Single Family Housing" means common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot.
- "Detached Single Family Housing" means a housing unit that is free standing and separate from other housing units (includes courtyard housing, detached single family dwellings, accessory dwelling units, manufactured homes on individual lots, and manufactured homes in parks).
- "Multiple Family Housing" means attached housing where each dwelling unit is not located on a separate lot (includes condominium, duplex, triplex, and multi-family housing with more than 3 units).

[23] 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.

In addition to housing and employment needs, the City has identified several other land needs, including public parks, public schools, and special site needs for large lot industrial development and a university. These are summarized in brief below.

[Note: a summary of the original 2008 to 2028 land needs identified for these other uses and an update of remaining need as of 2014 will be provided for schools, parks, and special site needs.]

CHAPTER 3. BASE CASE UGB CAPACITY

About 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, using 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.

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.

Creating and Calibrating Development Types

Overview

As noted previously, the development types generally match existing Comprehensive Plan categories. For residential development types, the densities and mix of housing types were set to match the observed trends from 1998 to 2008 by plan designation, documented in Appendix C.[24] The city is required to base capacity analysis on data since the last periodic review, in 1998.[25] The city's continued reliance on the 1998-2008 data analysis is justified because the residential development in the city from 2008 to 2014 was largely limited to building individual homes on lots created before 2008, due to the economic downturn.[26] This means that the density for the development was set prior to 2008 for nearly all recent residential building activity.

[24] There is one exception: the observed average density in the RH zone between 1998 and 2008 falls below the current minimum density for the zone (which was adopted in 2006). Based on guidance from the Remand, the base case uses the minimum density for the RH zone rather than the observed average.

[25] ORS 197.296(5)(a) requires determination of housing capacity 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 City of Bend Comprehensive Plan.

[26] Land use permit data indicates roughly a dozen residential subdivisions and two multi-family development projects approved (but not necessarily built) since 2008, all in 2013 and 2014, compared to between 600 and 700 single family homes built since 2008 on platted lots.

Employment development types were calibrated to the observed employment mix and density as of 2006, documented in Appendix D.[27]

A few specialized development types were created to address specific situations, such as:

- The Medical District Overlay Zone (MDOZ), an area with primarily residential plan designations but subject to an overlay that allows and encourages development of medical and office uses;[28]
- Identified locations for future schools and parks (see page 18);
- Institutional uses such as Central Oregon Community College (COCC) and the planned site of Oregon State University's Cascades Campus (OSU Cascades);
- Properties with approved development applications that made them more closely resemble a different development type; and
- Vacant platted lots subject to Covenants, Conditions and Restrictions (CC&Rs).[29]

Appendix E provides additional information about each of the development types (such as residential and employment mix and density), including those used in the base case as well as those developed later to incorporate efficiency measures.

[Note: Appendix E will be included with the final Urbanization Report, but is not included at this time.]

Redevelopment

Residential Land

Residential 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."[30]

City staff, in 2011, performed a detailed analysis of residential development activity in the city from 1999 through 2008 by BLI status. The analysis found:

- Land classified as "partially vacant" had very low levels of building permit activity – only 80 permits over 10 years.

[27] The densities and mix in Appendix C were calculated based on City of Bend GIS analysis using Oregon Employment Department (OED) 2006 geo-coded Quarterly Census of Employment and Wages (QCEW) data for City of Bend. They have been adjusted to represent covered employment without shift-workers, employees in public schools, on institutional/recreational lands, and employees working in their own homes. These densities were approved as part of the 2008 EOA by LCDC in the Remand.

[28] The MDOZ development type assumes a mix of uses consistent with the observed employment and housing densities and mix from the same 2006 and 2008 data sets described above.

[29] This development type includes exclusively single family housing and does not include set-asides for other uses or right of way. The density was set such that it generates one housing unit per lot.

[30] OAR 660-008-0005(7), effective February 2012.

- Under 6% of lots (and 26% of acres) classified as "developed with infill potential" in 1999 received building permits for residential infill by 2008: 4% of the lots under one acre (4.5% of the acres in this category) and 36% of the lots over one acre (51% of the acres in this category).

- There was virtually no redevelopment activity – where an existing structure was demolished and additional units were built – on fully developed land during 1999-2008.[31]

The Envision Tomorrow model was calibrated to be roughly consistent with these observations. Because of the way developed and vacant land were identified for lots classified as "partially vacant" and "developed with infill potential" (see Step 4 of the BLI), developed land for the purposes of this analysis is essentially only the portions of those properties where demolition of existing structures would be required in order to allow for redevelopment. For example, within tax lots identified as "developed with infill potential" and under 1 acre, a total of 152 acres were identified as vacant out of 1,440 (11%), with the remainder identified as developed. For larger sites identified as "developed with infill potential", a total of 746 acres were identified as vacant out of 1,130 (66%). On properties classified as "partially vacant," all 93 acres were identified as developed.[32] Thus, the estimation of vacant and developed acres on lots that are "developed with infill potential" or "partially vacant" accounts for an amount of further development that is roughly consistent with, but slightly higher than, the amount that has been seen historically. There is very little evidence of redevelopment through demolition in Bend to date. Thus the redevelopment rate for the developed portion of the partially vacant and developed with infill properties (which also applies to land that is fully developed) is set at zero.

Employment Land

ECONorthwest prepared an evaluation of redevelopment potential on employment land that took into consideration the ratio of improvement to land value, total value per square foot, employment density, and residual land value (given assumptions about building type and rent). A residual land value analysis modeled the financial feasibility of developing prototypical buildings based on achievable rents and current land values. Areas with positive residual land values after redevelopment (i.e. areas where property values are below the amount that a given type of development can afford to pay based on projected rents and costs) are areas where

[31] There were a total of 50 permits issued on lands classified as developed where there was an existing unit AND where the existing unit was demolished; however, only 2 of them resulted in more units than had existed prior to the demolition. In both of these cases, duplexes were built after a single family home was demolished. The rest of the 50 permits resulted in the same number of units (e.g., a single family home was demolished and replaced with another single family home). Therefore, we can assume that only 2 permits were the result of redevelopment; the other 48 were merely replacements of existing units. This is not unexpected, given that for land to be classified as developed it had to be fully developed under the existing zoning regulations.

[32] The partially vacant lands are all less than a half-acre in size. Few have the right to add more than two additional units under current zoning, and none have the right to add more than four additional units. Nearly all are developed with an existing single-family home, and nearly half of the existing homes have been built since 1990. Given that they are, by definition, too small to further divide, the only way to add units would be through conversion to a duplex or triplex or to single family attached housing.

redevelopment is most likely to be financially feasible under current conditions without public investment. The details of the redevelopment analysis can be found in Appendix X of the EOA.

[Note: this is not included with the current draft of the EOA, but is planned to be included with the final EOA. It will be a summary of the memos presented to the Employment TAC on approach to redevelopment analysis.]

In short, it found potential for roughly 1,360 new employees, or 6.6% of total forecast employment, on already developed employment land under the base case. As a percent of developed acres, this redevelopment is equivalent to roughly 1.5% of developed acres overall, with higher percentages in the Central Business District (CB), Industrial Limited (IL), and Mixed Employment (ME) plan designations.

Redevelopment rates for the development types (as a percent of developed acres) were calibrated to the results of the redevelopment potential analysis. Redevelopment rates for employment designations vary as follows:

- 4-6% for Community Commercial (CC), Commercial Limited (CL), General Commercial (CG), ME, Public Facilities (PF), and the industrial designations
- 8-10% for Mixed Riverfront (MR) and MDOZ
- 25% for Central Business District (CB)

Only employment parcels with some likelihood of development or redevelopment were painted with a development type in Envision Tomorrow. Development types were not applied to developed land unless the existing employment density was less than one third of the average employment density of the development type in question.

Set-Asides

In order to account for right of way, neighborhood parks and trails, and "other uses" such as churches, golf courses, etc. that may occupy land in a variety of plan designations but are not employment or housing uses, the development types also include set-asides that convert from gross vacant buildable acres to net residential and employment acres. The approach and general assumptions for these set-asides are documented below. The total amount of land for each set-aside inside the UGB under the Base Case is documented as part of the "Base Case Capacity Estimate" section.

Right of Way

As part of the analysis for the 2008 UGB expansion effort, the City of Bend calculated the amount of land used for right of way city-wide, across all plan designations, at 21%.[33] The "development types" in Envision Tomorrow include some variation in right of way set asides based on the city's block size and street standards for different plan designations, and are also calibrated to result in the overall amount of right of way calculated in 2008.

[33] See Rights of Way Methodology from Brian Rankin; Rights-of-way for roadways variable: final memorandum post DLCD Comments (12/4/2008).

Parks and Trails

Parks are accounted for in two different ways in Envision Tomorrow: future Community Parks are identified with their own development type and an approximate location and size,[34] while neighborhood parks and trails are accounted for through set-asides in certain development types (described below).

Neighborhood parks and trails are built into residential and mixed use development types, on the assumption that they will primarily be built in those areas. Bend Parks and Recreation District (BPRD) has adopted "Level of Service" (LOS) standards for neighborhood parks and trails that specify a target number of acres or miles to be available per 1,000 service population. In their 2012 Parks Master Plan, BPRD set a neighborhood park standard of 1.5 acres/1,000 population. However, their previous standard was 2.0 acres/1,000 population, and in discussions with city staff, BPRD indicated that they may want to revert to the higher standard in planning for higher density future growth. BPRD also has an adopted trails standard of 1 mile/1,000 population. Using an assumed 20' right of way for trails, this translates to 2.4 acres/1,000 population for trails.

Set asides in the development types have been calibrated to provide for a combined total of 4.1 acres of neighborhood parks and trails per 1,000 of new population (see Appendix E [placeholder - not included in the current draft] for details by development type). This includes 2.4 acres/1,000 population for trails and 1.7 acres/1,000 population for neighborhood parks – halfway between BPRD's adopted neighborhood park standard of 1.5 acres/1,000 population and the 2.0 acres/1,000 population they indicated they may want to use for higher density expansion areas.

Schools

Future public K-12 schools are accounted for in Envision with their own development type, similar to community parks. Future school locations inside the UGB were identified based on information provided by city staff and the Bend-La Pine School District. [35]

Other Lands

As part of a 2007 Residential Land Study by Angelo Planning Group, the City of Bend calculated the amount of land used for "other lands" city-wide, including uses such as churches, fraternal organizations, golf courses and other uses that are neither housing nor employment (schools and parks are addressed separately as discussed above). Overall, 12.8% of the city's land area was found to be dedicated to these uses. This percentage set aside is applied to development types representing all plan designations in Envision Tomorrow.

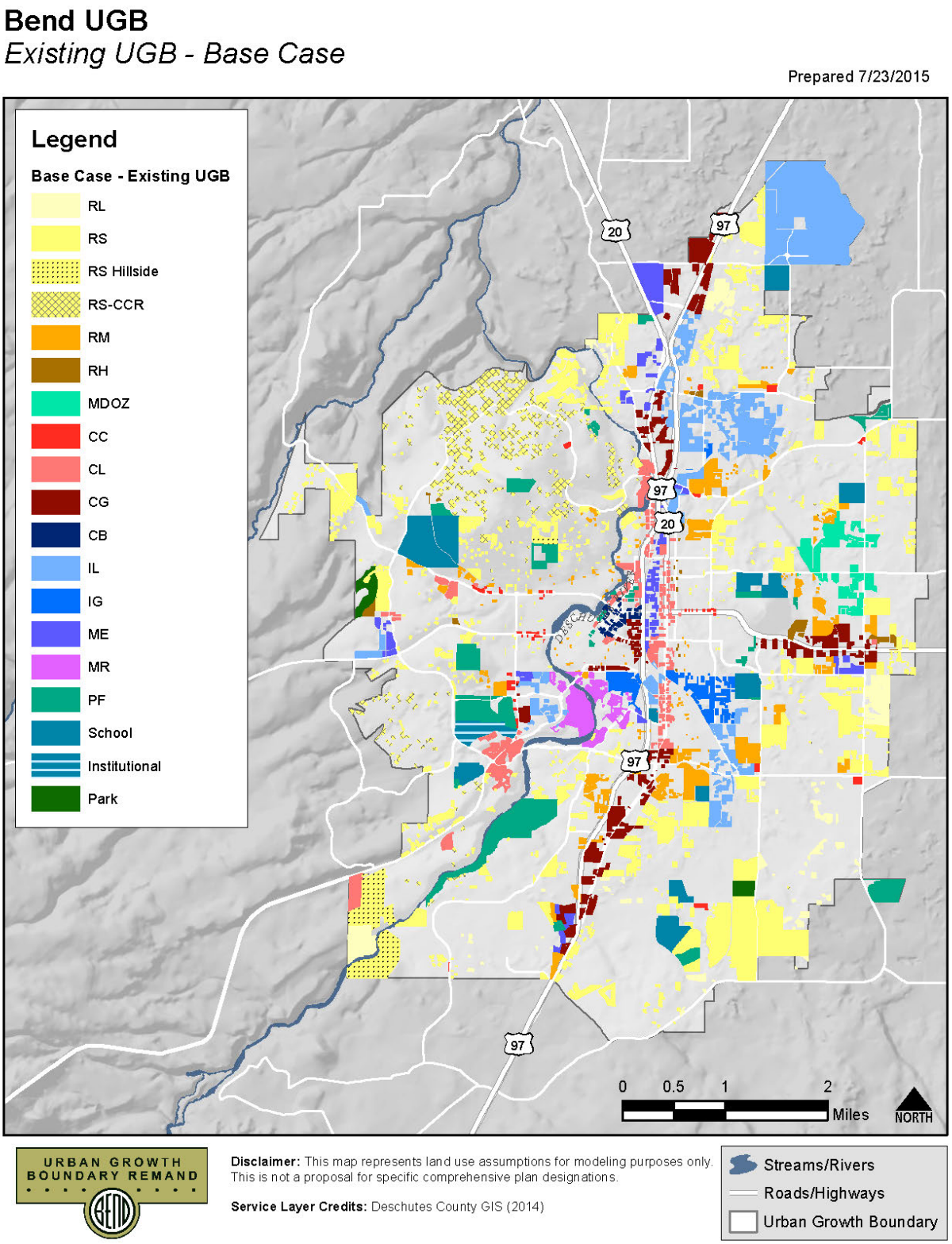
[34] Future community park locations identified in the model are not necessarily under Park District ownership; the locations identified are based on available information and professional judgement about possible future park needs, but are approximate and subject to change.

[35] Future school locations identified in the model are not necessarily under School District ownership; the locations identified are based on available information but are approximate and subject to change.

Applying Development Types

As noted previously, the development types were applied to residential land with development potential, as indicated by having some vacant acres on the parcel. The development type applied was generally consistent with the existing plan designations, except for the special situations identified on page 14. For employment land, as noted previously, development types were also applied to developed land with redevelopment potential. Figure 2 shows the map of development types applied under the Base Case.

Figure 2: Development Types Applied inside UGB: Base Case



Base Case Capacity Estimate

This section provides an estimate of the residential and employment capacity of the current UGB stated in terms of housing units and jobs, as required by OAR 660-024-0050.

Housing Capacity

The following tables and figures describe the residential capacity estimated in the base case scenario. Note that the number of new housing units reported is net of any existing units that may be lost through redevelopment in non-residential districts, and housing unit estimates are rounded to the nearest 10 units. In total, the base case shows that the current UGB can accommodate roughly 9,300 housing units under the current plan designations and policies and historic trends in development density. The mix of units projected under the base case is roughly 70% single family detached, 25% multifamily, and 5% single family attached. Most of the total housing capacity (over 60%) is in the RS plan designation. Only 5% of the total housing capacity is in the RH zone, the city's only high-density residential plan designation. The RH plan designation and the MDOZ collectively provide close to 40% of the total multifamily housing capacity in the city, and are geographically concentrated in a few areas. As shown on Figure 3, overall housing growth is concentrated in the southeast and east, where there is more vacant land.

Table 4: Base Case Housing Capacity

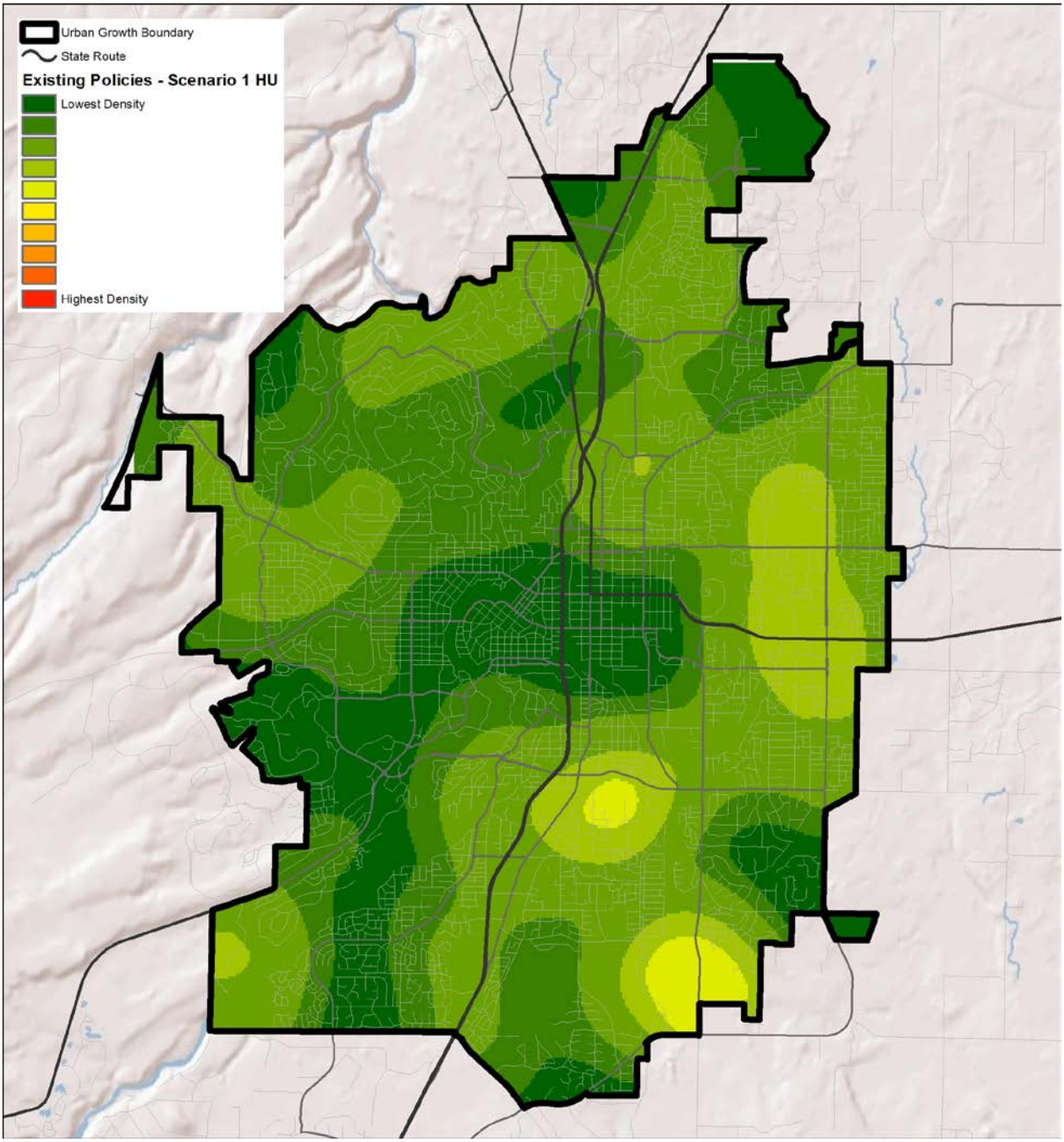
Housing Type	Net New Housing Units	Percent of new housing units
Single Family Detached	5,870	70%
Single Family Attached	440	5%
Multi-Family	2,090	25%
Total	**8,400**	**100%**

Table 5: Base Case Housing Capacity by Plan Designation

Plan Designation*	Single Family Detached Units	Single Family Attached Units	Multi-Family Units	Total New Housing Units
RL	230	-	-	230
RS	4,590	290	250	5,130
RM*	1,020	100	860	1,980
RH*	10	50	360	420
MDOZ*	-	-	480	480
CL*	-	-	50	50
CG	-	-	50	50
MR	20	-	40	60
Total	**5,870**	**440**	**2,090**	**8,400**

* Development capacity in the MDOZ is counted there rather than by plan designation.

Figure 3: Heatmap of Housing Growth in the Base Case



Employment Capacity

The following tables and figures describe the employment capacity estimated in the base case scenario. Note that the number of new jobs reported is net of any existing jobs that may be lost through redevelopment in non-residential districts, and employment estimates are rounded to the nearest 10 jobs. In total, the base case shows that the current UGB can accommodate a little over 12,000 jobs under the current plan designations and policies and historic trends in development density. The mix of jobs that can be accommodated inside the UGB under the

base case is a fairly even split between retail/hospitality, office, industrial, and public. Most of the total employment capacity (about 37%) is in the IL plan designation, with most of that at Juniper Ridge. As shown on Figure 4, overall employment growth is concentrated in Juniper Ridge and southwest Bend.

Table 6: Base Case Employment Capacity by Category

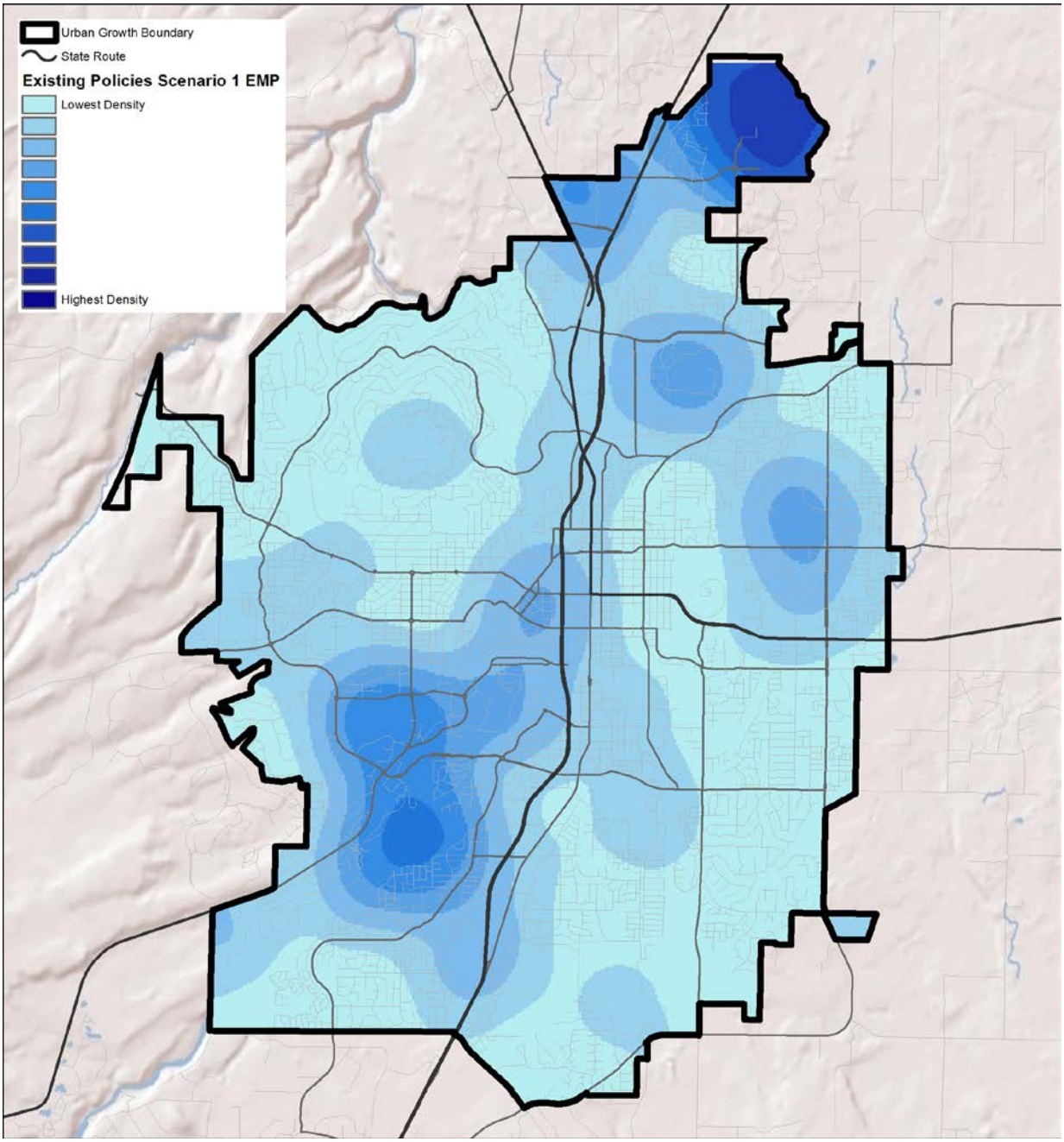
Employment Category	Net New Jobs	Percent of new jobs
Retail & Hospitality	2,220	19%
Office	3,610	31%
Industrial	3,310	28%
Public	2,540	22%
Total	**11,680**	**100%**

Table 7: Base Case Employment Capacity by Plan Designation and Category

Plan Designation*	Net New Retail & Hospitality Jobs	Net New Office Jobs	Net New Industrial Jobs	Net New Public Jobs	Total Net New Jobs
RS	-	20	-	-	20
RM*	10	30	-	-	40
RH*	-	10	-	-	10
MDOZ*	10	690	70	-	770
CC	50	40	-	-	90
CL*	470	570	90	-	1,130
CG	850	210	40	-	1,100
CB	100	270	-	10	380
IL	430	1,110	2,650	-	4,190
IG	10	50	90	-	150
MR	80	260	50	-	390
ME	160	230	320	-	710
PF	50	120	-	2,530	2,700
Total	**2,220**	**3,610**	**3,310**	**2,540**	**11,680**

* Development capacity in the MDOZ is counted there rather than by plan designation.

Figure 4: Heatmap of Employment Growth in the Base Case



Land for Parks, Schools, and Other Uses

The Base Case includes 816 acres for right-of-way (21% of vacant acres developed), 152 acres for parks, 93 acres for new schools, and 454 acres for other land (12% of acres developed) inside the existing UGB.

Comparison to Need

The housing and employment need projections to 2028 are documented and explained in the HNA and EOA, respectively. For more information about what they include and how they were generated, please see those documents. This section compares those needs, in summary form, against the estimated capacity of the current UGB in the Base Case.

As shown in Table 8, the Base Case is estimated to accommodate roughly half of both the total housing and total employment needs forecasts for 2028. However, comparing at the housing type and employment category level, it is clear that the capacity is not evenly distributed across all needed types and categories. For housing, much of the total single family housing need can be met inside the UGB in the Base case, but only about a quarter of the single family attached and a third of the multifamily housing needs can be accommodated with current policies and trends (see Table 8). For employment, all of the public employment needs (and more) can be accommodated on existing PF land inside the UGB, but only about a half of the office and industrial needs and a third of the retail and hospitality needs can be met inside the UGB with current policies and trends (see

Table 9).

Table 8: Base Case Housing Capacity Compared to Housing Needs by Housing Type

Housing Type	Net New Housing Units	Total Housing Need[36]	Residual Housing Need	Percent of Housing Need Met
Single Family Detached	5,870	9,220	3,350	64%
Single Family Attached	440	1,680	1,240	26%
Multi-Family	2,090	6,330	4,240	33%
Total	**8,400**	**17,230**	**8,830**	**49%**

[36] The total housing need listed includes housing units needed to meet projected growth in households, second homes, and equivalent dwelling units to meet group housing needs. See HNA for details.

Table 9: Base Case Employment Capacity Compared to Employment Needs by Employment Category

Employment Category	Net New Jobs	Total Employment Need[37]	Residual Employment Need	Percent of Employment Need Met
Retail & Hospitality	2,220	6,520	4,300	34%
Office	3,610	7,160	3,550	50%
Industrial	3,310	6,540	3,230	51%
Public	2,540	1,720	None[38]	100%
Total	**11,680**	**21,940**	**11,080**	**53%**

The City's park and school needs are also not fully met within the existing UGB.

[Note: a comparison of the Base Case park and school land to the 2014 to 2028 remaining park and school need will be provided here.]

[37] The employment need categories have been generalized for simplicity in comparing against capacity as measured in Envision Tomorrow. See EOA for details.

[38] Public jobs do not include school-based employment in actual school facilities which tend to be located in residential areas. Schools are addressed as a separate land need. The surplus of capacity for public jobs inside the UGB does not subtract from the need for employment capacity of other types, since land designated Public Facilities (where most of the public employment capacity comes from) generally will not provide opportunities for private-sector retail, office, or industrial development.

[Note: the draft outline of the remaining chapters of the Urbanization Report is provided below for reference. TAC feedback on this outline is not requested at this time.]

CHAPTER 4. EFFICIENCY MEASURES

Overview & Evaluation Process

Proposed Package of Efficiency Measures & Anticipated Impact

Changes to Broadly-Applicable Development Code

Changes to Plan Designations for Opportunity Sites

Capacity Estimate with Efficiency Measures

Housing Capacity

Employment Capacity

Land for Parks, Schools, and Other Uses

Comparison to Need

CHAPTER 5. UGB EXPANSION

Overview & Evaluation Process

Initial Suitability Evaluation

Approach

Results

Alternatives Analysis

Approach

Summary of Alternatives Considered

Scenarios

Supplemental Analysis Areas

Summary of Evaluation Results

Scenarios

Supplemental Analysis Areas

Proposed UGB Expansion

Summary of Proposal

Evaluation Results

CHAPTER 6. CONCLUSION

APPENDICES & RELATED DOCUMENTS

[Note: The appendices intended to be included with the Urbanization Report are listed for reference below. However, the appendices themselves are not included with the partial draft report at this time.]

Appendices

Appendix A State law cited in this report

Appendix B Index of relevant Remand directives

Appendix C Observed mix and density of housing by residential plan designation *(from 2011 BLI memo)*

Appendix D Observed mix and density of employment by employment plan designation *(from 2008 EOA)*

Appendix E Development type details

Appendix F Proposed efficiency measures code changes details *(development code amendment descriptions & details of what changed in Envision Tomorrow)*

Appendix G Stage 2 maps (all)

Appendix H Final scenario evaluation memo, with attached technical memos

Appendix I Detailed evaluation documentation for proposed UGB / hybrid scenario

Related Documents

Housing Needs Analysis

Economic Opportunities Analysis

Buildable Lands Inventory

Findings Report

Comprehensive Plan

Bend Development Code

Damian Syrnyk

From: Mike Riley <mike@envirocenter.org>
Sent: Wednesday, June 24, 2015 9:45 AM
To: Sharon Smith; Damian Syrnyk; Brian Rankin
Cc: Joe Dills; Karen Swirsky; Brian Meece; dale@brooksresources.com
Subject: Riley COmments for UGB Boundary TAC Meeting Today (6/24/15)

Importance: High

Greetings TAC Members!

Since I cannot attend this meeting, here are my comments and input. I appreciate your hard work and I am truly sorry I cannot be there with you today. But I do promise to think of you as I enjoy more beach time later today and truly the best beer I have ever had in my life—Tall, Dark and Mandarin by Big Island Brewhaus. As my wife said, "OMFG--Is this good!"

Aloha!

Mike Riley

Recommendation #1 on page 23 of 87 of packet (number in upper right hand corner)

- I support this recommendation

Recommendation #2 on page 28 of 87 of packet (number in upper right hand corner)

- I support this recommendation, with one comment.

- For the transportation analysis of the supplemental areas: I do not support using a qualitative approach alone as that seems too subjective for this critically important community issue, especially when it comes to cost. I suggest using both the Envision model and the qualitative approach to get us the best info possible to inform our decision-making next fall.

Recommendation #3 on page 39 of 87 of packet (number in upper right hand corner)

- I support this recommendation, with a few comments/suggestions.

- The scenarios, broadly speaking, seem to provide a good mix of options for robust analysis.

- I still do not see a middle of the road option for the NE area; rather I see two extremes. The NE area is either essentially the same very small amount of land originally proposed in the original versions of the scenarios on June 9 and carried forward into scenarios 2.1 and 3.1 or a new very large area in scenario 1.1. I think we should also be looking at something in between these two ("not too hot, not too cold, just right" as Sharon would say), much like we do for the west area and for the SE area. I also think this middle option for the NE ought to treat that land as mixed use (the orange color on scenario maps), especially in that part of the NE area that is due east of Pine Nursery Park. Perhaps this could be achieved in scenario 3.1 by reducing the amount of land west of OB Riley Road and adding that land to the NE area.

- "The Thumb": I think we need one scenario that looks at the entire "Thumb" area as employment and one that looks at it as mixed use. But we don't have that yet. 1.1 has it as all employment. 2.1 has about 2/3 of it as mixed use. And 3.1 has about 1/2 as employment. I suggest changing 2.1 to include the whole Thumb area as mixed use by reducing the amount of land in SE somewhat.

- Finally, I support Susan Brody's point that we need to see the relationship/connections between the proposed expansion areas and the proposed uses within the existing UGB adjacent to/nearby proposed expansion areas. We need to see the bigger picture context for the combined set of changes for the entire City, inside and outside the current UGB. The current mapping does not provide this but should do so when we get the results of the analysis next fall so it can best inform our development of a final hyrbid scenario recommendation to send to the USC.

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****

Mike Riley
Executive Director
The Environmental Center

MISSION: to embed sustainability into daily life in Central Oregon

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****

Table 8 - Composite ODF Assessment & SB 360 ratings

Community at Risk	ODF Assess Rank	+ SB 360 Rating	= Total Score	Composite Rank
West UGR	**1**	**5**	**6**	**3**
Southwest	**2**	**1**	**3**	**1**
West	**2**	**3**	**5**	**2**
Northwest	**3**	**4**	**7**	**4**
Southeast	**4**	**2**	**6**	**3**
East UGR	**5**	**5**	**10**	**5**
Northeast	**6**	**4**	**10**	**5**
North	**7**	**4**	**11**	**6**

The Steering Committee agreed to add the ODF Assessment ranking number to the SB 360 ranking number to produce a final score, then the composite rank. Two groups of priorities for fuels reduction treatments emerged from this analysis:

Highest

Southwest
West
Southeast
West UGR
Northwest

High

East UGR
Northeast
North

Boundary and Growth Scenarios TAC Member comments:

- Susan Brody
- John Russell

Public Testimony:

- Charley Miller, Miller Tree Farm
- Myles Conway, for Rio Lobo Investments
- Carl Hopp, for PacWest Development LLC

June 24, 2015 Boundary and Growth Scenarios TAC

Damian Syrnyk

From: Susan <susanebrody@gmail.com>
Sent: Tuesday, June 23, 2015 10:37 AM
To: Damian Syrnyk
Subject: Comments for Boundary TAC meeting on 6/24/15

Follow Up Flag: Follow up
Flag Status: Flagged

I am on vacation & unable to participate by phone in the TAC meeting tomorrow. I have reviewed the packet & have noted my comments below.

1. The additional documentation regarding the "lands to be screened from further consideration" is very helpful & provides good clarification. I also support the staff recommendation to screen the lands as described starting on page 5 & shown on Figure 2: phase 2 narrowing of exception lands.

2. I am comfortable with keeping the 3 draft scenarios, with the various refinements proposed in the staff recommendation. I think there is enough variation among the scenarios to provide for a robust analysis. I think the additions to land in the Northeast are good & I think all scenarios should include some Westside development, just at various scales.

3. I support the approach described for the creation of the "supplemental analysis map" including the description of how the analysis of adjacent lands will be conducted.

4. I am especially interested in seeing the analysis of the expansion options in relationship to the analysis of the areas already inside the UGB, including the efficiency measures recommended previously by the other TACs. I think it very important that we keep in mind that we are looking at the entire City and how it functions with various possible additions.

5. I have a question about how the residential & employment TACs will be involved in the scenarios analysis. For example, will the Residential Lands TAC have an opportunity to weigh in on the ESEE analysis regarding housing affordability under Factor 3? And, will the Employment TAC look at the evaluation of commercial & industrial uses under Factor 1? I think this would be very helpful.

Thanks for considering this input. I'm sorry I can't be at the meeting.
-- Susan Brody

Sent from my iPad

Damian Syrnyk

From: RUSSELL John <john.russell@state.or.us>
Sent: Tuesday, June 23, 2015 3:22 PM
To: Brian Rankin; Damian Syrnyk
Subject: Comments for tomorrow's meeting

Brian and Damian: Please distribute for tomorrow's Boundary Scenarios TAC meeting.

Boundary Scenarios Planning Team:

Having read the packet for the June 24 meeting of the Boundary Scenarios TAC, I offer the following comments related to the DSL site.

1. The DSL site has long been identified as a complete community development site. A formal conceptual master plan, adopted by the State Land Board in 2007, documented this concept. The plan has been available to the consultant team as well as committee members. While it is a conceptual plan, and nothing is guaranteed through the UGB process, all three of the original scenarios that were a result of the April 30 TAC/USC workshop included the DSL site as a complete community, consistent with the adopted master plan. Furthermore, all tables at the workshop showed the site as a complete community. Thus it was surprising to see only one of the three new expansion scenarios indicating a complete community for the DSL site. Scenario 1.1 includes 120 acres employment land (including a large lot), 50 acres residential and 50 acres "Civic" in an odd configuration. Scenario 3.1 includes 40 acres residential, 60 acres employment and 80 acres "Civic". Neither of these come close to being a complete community. "Civic" was not defined. If "Civic" relates to park land it seems odd to have the predominant uses adjacent to it as employment, rather than residential/mixed use.

2. One of the expansion scenarios (1.1) includes a 50 acre industrial site on the DSL property. The ideal configuration for a large industrial site is square, or close to it. A square of 50 acres is approximately 1,480 feet on each side**. Due to site constraints related to bat caves that are linked to the property and must be protected, it will be very difficult if not impossible to configure a 50 acre site that is attractive to large lot industrial users.** The master plan, which addresses the entire 640 acre section (about 380 are being discussed in this process as the remainder is resource land), shows a linear community open space that bisects the site. That community open space, serving 640 acres, consists of approximately 80 acres. While the actual area of the caves that must be protected is much smaller than 80 acres, the caves (and associated lava tubes) are approximately linear. They are fully incorporated within to the open space shown in the plan. Should Scenario 1.1 that contains the large lot industrial site be implemented, the 50 acre site would be fairly long and narrow due to these site constraints; a far from ideal situation for a large industrial user.

3. The DSL property is, by definition, public property. However, due to its Oregon Constitutional mandate, it is treated very differently than other public property. The Land Board, and DSL as its administrative arm, is mandated to obtain market value for its Constitutional lands to support and grow the Common School Fund. There have been comments in the Bend Bulletin, and in other conversations, suggesting that since DSL is public, lot industrial should be on the DSL site rather than private property. DSL should never receive any special consideration for its property, good or bad. However, sites should be evaluated on their physical and economic characteristics and impact on the overall plan, not their ownership.

John Russell
June 23, 2015

Please note I cannot currently receive calls on my office phone. We are remodeling and do not have landline service. Please contact me on my cell # below or by email. Thanks.

John R. Russell, AICP
Principal Real Property Planner
Oregon Department of State Lands
775 Summer St. NE, Suite 100
Salem, Oregon 97301
Office: 503-986-5281
Cell: 503-580-6008

MILLER TREE FARM, LLC
110 NE Greenwood Avenue
Bend, OR 97701

June 19, 2015

Boundary Alternatives TAC
c/o Brian Rankin, UGB Project Manager
City of Bend

RE: Development plans for Miller property in UGB "West Area"

At the June 9 Boundary TAC meeting, Joe Dills invited owners of the various large parcels under consideration for inclusion in the UGB to share their thoughts and plans for their property. I would like to take this opportunity to describe our plans and intent for the entire Miller property, which includes two distinct areas:

1. **The Tree Farm**. The Tree Farm is a planned rural density cluster development on approximately 530 acres consisting of fifty 2-acre lots and over 420 acres of open space featuring a network of public trails connecting to Shevlin Park. Land use approval is currently pending before the Deschutes County Board of Commissioners. The easternmost 140 acres of The Tree Farm is zoned UAR-10, with the eastern boundary primary following a topographic line on a ridge that traverses the property and forms a physical edge to potential urbanization. The western extent of the property, which abuts Shevlin Park along the park's southeastern boundary, is zoned RR-10, but with an additional Wildlife Area overlay. The eastern boundary of The Tree Farm adjoins the Miller Urban property discussed below.

Our intent behind this development plan is to create a permanent "feathered" edge on the western side of the city of Bend, since it is highly unlikely that any future urbanization will occur beyond Shevlin Park and Tumalo Creek to the west. One of the primary purposes behind this development plan is to create a carefully managed fire-adapted community designed to provide a buffer both for the city's Outback water facility and city itself, including future urbanization on the Miller Urban property. Creation of this community will be accomplished through a highly-detailed Wildfire Protection Management Plan (WPMP) that outlines precise fire fuel reduction and construction standards as contained in National Fire Protection Agency (NFPA)1144, to be implemented through participation in the Firewise Community program, and detailed and highly restrictive CCRs, Design Guidelines, and county oversight. This WPMP include specific provisions requiring: 1) prescriptive 3-zone vegetation management buffer around all structures; 2) building footprints that hold structures back from vegetated slopes; 3) fire-resistant construction materials and methods, and : 4) fire sprinklers in all homes. In addition, streets and other infrastructure within The Tree Farm will be designed and constructed to comply with the applicable residential development standards of NFPA 1141, including extending City of Bend water to and through the project to provide high-volume fire hydrants for combating potential fires.

The low-density clustered development pattern of The Tree Farm combined with the wildland fire mitigation measures called for in the WPMP will create precisely the type of wildland fire buffer

between forest lands to the west and present and future urbanization identified by the City's Wildland Fire Focus Group as a preferred development alternative.

2. **Miller Urban** property. The remaining 250 acres of Miller property wraps around William Miller Elementary School and Pacific Crest Middle School (both of which are on land previously part of the Miller property). Our intent is that this property would be brought into the UGB and urbanized. We are working with the development team behind the adjoining NorthWest Crossing master-planned community to design a continuation of the mixed-use development pattern that has been so successful there. Our preliminary design concepts include a mix of residential uses and parks surrounding the two schools, as well as an extension of the existing trail network in the recently opened Discovery Park in NorthWest Crossing to connect through The Tree Farm and on to Shevlin Park and the Phil's Trail network. Given the adjoining employments and commercial lands, there is little anticipated need for such lands in any expansion in this area.

Thank you for the opportunity to discuss our plans for the property. Attached is a map of The Tree Farm that highlights the Fire Prevention Zones called for in the WPMP for the project and a description of the fire fuels reduction treatment prescribed for each zone. The entire property is currently managed to a Zone 3 standard.

Sincerely,

Charley Miller
Co-Managing Member
Miller Tree Farm, LLC

EXHIBIT 6
THE TREE FARM
FIRE PREVENTION ZONES

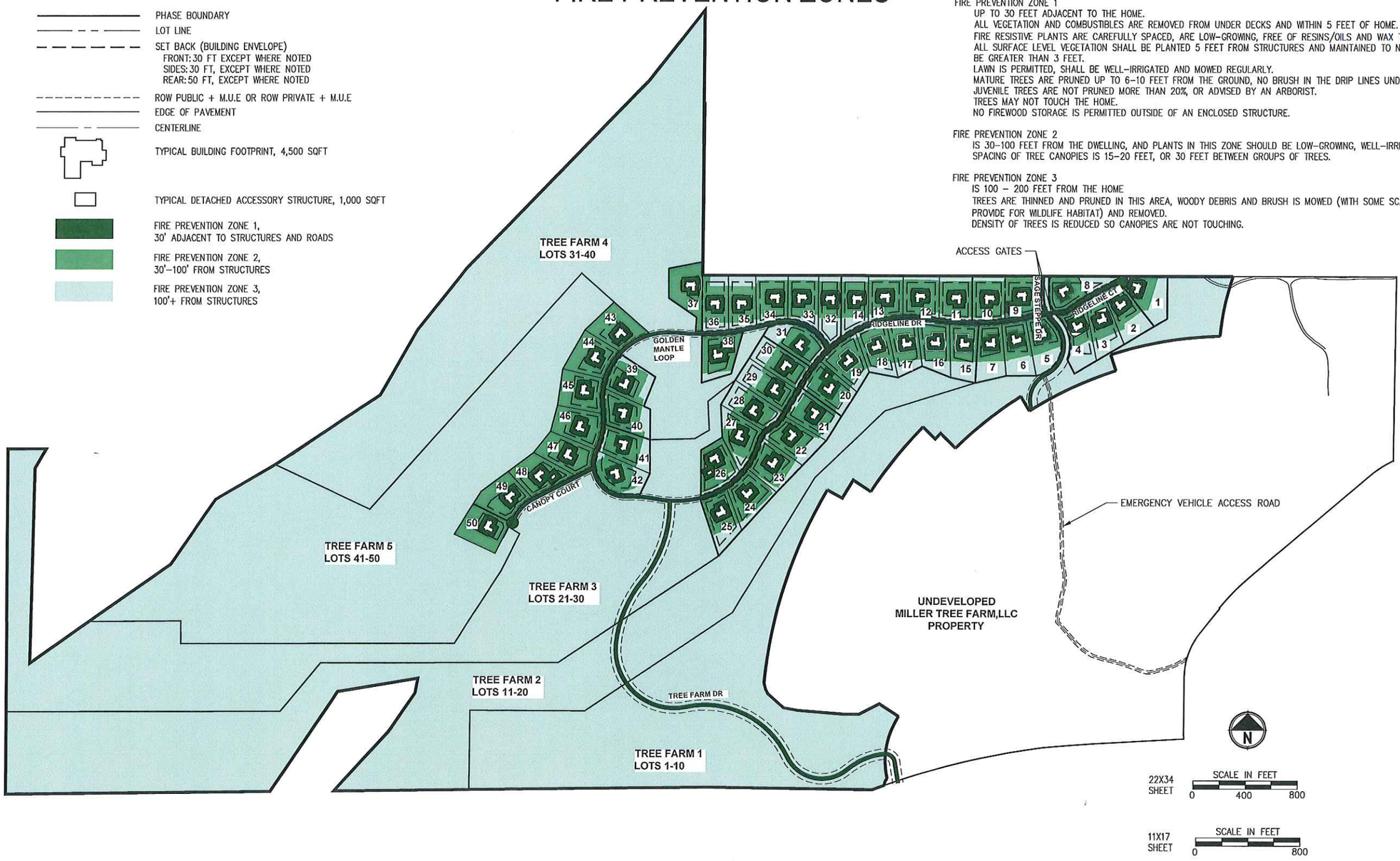
LEGEND

- PROJECT BOUNDARY
- PHASE BOUNDARY
- LOT LINE
- SET BACK (BUILDING ENVELOPE)
  FRONT: 30 FT EXCEPT WHERE NOTED
  SIDES: 30 FT, EXCEPT WHERE NOTED
  REAR: 50 FT, EXCEPT WHERE NOTED
- ROW PUBLIC + M.U.E OR ROW PRIVATE + M.U.E
- EDGE OF PAVEMENT
- CENTERLINE
- TYPICAL BUILDING FOOTPRINT, 4,500 SQFT
- TYPICAL DETACHED ACCESSORY STRUCTURE, 1,000 SQFT
- FIRE PREVENTION ZONE 1, 30' ADJACENT TO STRUCTURES AND ROADS
- FIRE PREVENTION ZONE 2, 30'–100' FROM STRUCTURES
- FIRE PREVENTION ZONE 3, 100'+ FROM STRUCTURES

FIRE PREVENTION ZONE 1
UP TO 30 FEET ADJACENT TO THE HOME.
ALL VEGETATION AND COMBUSTIBLES ARE REMOVED FROM UNDER DECKS AND WITHIN 5 FEET OF HOME.
FIRE RESISTIVE PLANTS ARE CAREFULLY SPACED, ARE LOW-GROWING, FREE OF RESINS/OILS AND WAX THAT BURN EASILY.
ALL SURFACE LEVEL VEGETATION SHALL BE PLANTED 5 FEET FROM STRUCTURES AND MAINTAINED TO NOT ALLOW FLAME LENGTH TO BE GREATER THAN 3 FEET.
LAWN IS PERMITTED, SHALL BE WELL-IRRIGATED AND MOWED REGULARLY.
MATURE TREES ARE PRUNED UP TO 6-10 FEET FROM THE GROUND, NO BRUSH IN THE DRIP LINES UNDER TREES.
JUVENILE TREES ARE NOT PRUNED MORE THAN 20%, OR ADVISED BY AN ARBORIST.
TREES MAY NOT TOUCH THE HOME.
NO FIREWOOD STORAGE IS PERMITTED OUTSIDE OF AN ENCLOSED STRUCTURE.

FIRE PREVENTION ZONE 2
IS 30-100 FEET FROM THE DWELLING, AND PLANTS IN THIS ZONE SHOULD BE LOW-GROWING, WELL-IRRIGATED AND LESS FLAMMABLE.
SPACING OF TREE CANOPIES IS 15-20 FEET, OR 30 FEET BETWEEN GROUPS OF TREES.

FIRE PREVENTION ZONE 3
IS 100 – 200 FEET FROM THE HOME
TREES ARE THINNED AND PRUNED IN THIS AREA, WOODY DEBRIS AND BRUSH IS MOWED (WITH SOME SCATTERED EXCEPTIONS TO PROVIDE FOR WILDLIFE HABITAT) AND REMOVED.
DENSITY OF TREES IS REDUCED SO CANOPIES ARE NOT TOUCHING.



NOT FOR CONSTRUCTION

REVISIONS	DATE	BY

DESIGNED
DRAWN
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE 7420 001 P02 F0
JOB No. 7420 001
DATE 6/16/15

DRAFT

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PROJECT NAME
THE TREE FARM
DESCHUTES COUNTY

THE TREE FARM
FIRE PREVENTION ZONES

DRAWING NO. 1 OF 6
WPMP

LAYOUT: FireZones PATH: U:\Bend\Projects\Clients\7420-TheTreeFarm\297-7420-001 TreeFarmDevelopment\99Svcs\CADD\DWG PLOTTED BY: rlcodev DATE: Monday, June 22, 2015 5:24:03 PM

MARTEN LAW

June 23, 2015

Via Email and Hand Delivery

UGB Steering Committee and Boundary and Growth Scenarios,
Technical Advisory Committee
c/o Brian Rankin City of Bend, Long Range Planning

Re: Urban Growth Boundary Remand

Members of the Boundary TAC and UGB Steering Committee:

Our office represents Rio Lobo Investments, LLC ("Rio Lobo"). Rio Lobo owns an approximately 376 acre property in the urban reserve located on the west side of Bend, south of Shevlin Park Road and north of Skyliners Road. There are two reasons for our submittal. First, we are writing to provide the committees with some specific details regarding the Rio Lobo Property and its particular suitability for inclusion within the Urban Growth Boundary. Second, we are compelled to register our concern with any decision by either the Urban Growth Boundary and Growth Scenarios Technical Advisory Committee ("Boundary TAC") or the Urban Growth Boundary Steering Committee ("Steering Committee") to eliminate otherwise "suitable" expansion lands from any further modelling, study or analysis under the relevant location factors of Goal 14. Under the requirements of OAR 660-024-0060, a local government is required to "consider and balance" all the location factors of Goal 14 in its analysis and comparison of alternative boundary locations. Suitable lands should not be eliminated from further consideration based on the various UGB expansion scenarios that have been developed by the Boundary TAC to date.

The "Rio Lobo Property"

The 376-acre Rio Lobo Property is comprised of two separate tax parcels. Both parcels lie immediately adjacent to the existing Urban Growth Boundary and are zoned as urban reserve under Deschutes County Title 19 Zoning (UAR-10). The two properties are also designated as Urban Area Reserve on the City's General Plan map but fall outside the UGB and City limits. All of the property has been characterized as "Priority Exception Land" in connection with ongoing UGB remand process. Based on the process conducted by the City to date, such exception lands have been identified as the "highest priority" for inclusion within the UGB. Tax lot 400, County Assessor's Map 17-11-26 is approximately 35 acres in size and is entirely surrounded by the existing UGB on three sides. Developed City subdivisions directly abut this parcel to the north, east and west. Tax Lot 600, County Assessor's Map 17-11-00 lies immediately to the south and is approximately 334 acres in size. Large portions of this larger parcel also abut the existing UGB to the north, east and west.

As the City proceeds with its Goal 14 analysis of individual properties, you will find the property can be readily and efficiently served with connections to all required City

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infrastructure. The property immediately abuts existing connections to the City sanitary sewer system and City water infrastructure can be provided to the property though multiple connection points. The property can also be served with multiple connections to the City road system and has been determined to have "Good Connectivity" (the highest category available) and minimal reliance on "Congested Corridors" in the adopted "Factor 2 Maps." The eastern 40-acres of the Rio Lobo Property has been identified as the location of the future extension of the "Skyline Ranch" collector roadway, which is planned to facilitate existing and future growth on the west side of Bend. Because of the size, location and topography of the site, we are confident that further study and analysis will demonstrate that City infrastructure can be extended to and through the site in an efficient and cost effective manner.

The majority of the Rio Lobo Property burned entirely to the ground during the 1990 "Awbrey Hall" fire. As a result of the intensity and very high temperatures associated with this fire, Ponderosa Pine trees have not re-generated within the footprint of the fire scar. Low fertility soils, the loss of organic materials and the limited available moisture significantly constrain the ability to re-establish a pine forest on the parcel. A report from the fire and forest resource management consultants at Singletree Enterprises outlining issues related to fire and timber production is attached hereto. The attached fire and forest management report evaluates the significant fuels treatment and fire protection work that has been performed on the Rio Lobo Property to date.

The Rio Lobo Property is characterized by varied topography. Any future development plan will necessarily result in the preservation of areas of open space. These areas of open space are very well suited to provide trail corridor links between existing urban areas to the east and the public lands and amenities of Shevlin Park. Development of the Rio Lobo property provides a unique opportunity to enhance trail connections on the west side of Bend.

Land Suitability Mapping

Nearly the entirety of the Rio Lobo Property is ranked in the "Highest Quartile" in the Bend UGB Land Suitability Composite map ("Composite Map")[1]. The property also falls within the "Highest Quartile" in the Factor 1 Map (Efficient Accommodation of Land Needs) and the Factor 3 Map (ESEE Consequences). The property is mapped in the "2nd Quartile" in the Factor 2 Map (Provision of Public Facilities and Services") which is the highest designation provided to any property located in the "West Area" as such area is defined by your consultant. Portions of the Rio Lobo Property are ranked in the "2nd Quartile" in the Factor 4 Map (Far/Forest Compatibility). Again, this is the highest ranking given to any property in the West Area. The remaining portions of the Rio Lobo Property are ranked in the lowest quartile based solely on the large size of tax lot 600. Because this parcel is large (334-acres) and extends to the west, the proximity of its western boundary to forest lands diminished the overall ranking of the entire parcel. In reality, portions of this parcel are located farther from forest lands than other properties located in the West Area. Had this large parcel been partitioned or subdivided, its

[1] Those very small portions of the Rio Lobo Property ranked in the 3rd Quartile on the Composite Map appear to be based on mapping errors contained in the Factor 1 maps. Maps depicting "Priority 2 Exception Land Parcel Size, "Improvement to Land Value Ratio" and "Tax lot distance from UGB" incorrectly reference these very small portions of the Rio Lobo Property. These errors carry over and impact the overall consideration of the property in each of the Factor 1, 2, 3, 4 maps and the Composite Map.

ranking would be entirely consistent with other properties in the West Area. It is simply unfair and arbitrary to penalize the Rio Lobo Property in the mapping process because it has not previously been divided.

More importantly, there is absolutely no basis for any assumption that the development of the Rio Lobo Property would be incompatible with farm or forest lands. The Tumalo Creek riparian corridor and Shevlin Park buffer the property from any nearby forest operations. As previously noted, the property has burned and can no longer support the growth of a Ponderosa Pine forest. There is no basis in the remand record (other than the arbitrary tax lot distance from zoning) to conclude that the future development of this parcel will have any impact on farm or forest activities on the west side.

As noted above, issues related to wildfire risk are specifically addressed in the attached report from Singletree Enterprises. With this report, consulting fire and forestry expert, John Jackson, notes that, as a practical matter, the wildland-urban interface ("WUI") already extends west of the Rio Lobo Property by virtue of the presence of Shevlin Park and existing residential development to the west. Development of the Rio Lobo Property will not expand the WUI but will provide the City with a mechanism to reduce flammability, vegetation continuity and access for fire suppression resources. Incorporation of the Rio Lobo property into the UGB will provide additional fire protection to urbanized areas within the current City limits. Developer funded roads, fire hydrants and access infrastructure can be utilized to mitigate against the fire risks that exist today on the west side of Bend.

Required Boundary Location Alternatives Analysis under OAR 660-024-0060

With its adoption of the Bend UGB Land Suitability Composite Map, the City has determined the lands "suitable" for inclusion within the Urban Growth Boundary under ORS 197.298. All of the lands designated as suitable must be specifically evaluated under Goal 14 and the "Boundary Location Alternatives Analysis" set forth in OAR 660-024-0060 before alternative UGB expansion scenarios can be developed or approved. Where, as here, the amount of "suitable" land exceeds the identified land needs, the local government is required to apply the location factors of Goal 14 in choosing the specific lands to include within the UGB. OAR 660-024-0060(1)(b). The applicable administrative rules do not allow the City to eliminate otherwise suitable lands from further Goal 14 analysis and consideration based solely on the alternative UGB expansion scenarios developed by the Boundary TAC.

Rules provide that the boundary location factors of Goal 14 are not independent criteria. In connection with the development of alternative UGB boundary scenarios, "a local government must show that all the factors were considered and balanced." OAR 660-024-0060(3). This requires an evaluation and comparison of the relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of the public facilities and services needed to urbanize alternative boundary locations. OAR 660-024-0060(8). The evaluation under Goal 14 must include a comparison of impacts to existing water, sanitary sewer, storm water and transportation facilities.

While we understand City's economic and efficiency interest in limiting its planned Factor 2 analysis (orderly and economic provision of public facilities and services) and modelling to the specific lands identified in the proposed UGB expansion scenarios, any such limitation stands contrary to the requirements of OAR 660-024-0060 and Goal 14.

The required consideration and balancing of the various Goal 14 factors cannot occur until the City has evaluated the relative cost and efficiency of extending infrastructure to lands otherwise designated as suitable in the Composite Map. To the extent, the City intends to eliminate lands from further Goal 14 analysis, specific Goal 14 policies must be developed and approved. To date, no such policies have been developed or approved.

Conclusion

For the reasons set forth above, we ask that the City conduct a full evaluation of the Rio Lobo property under the Goal 14 location factors. We are confident this analysis will demonstrate that the property can be efficiently served with City infrastructure and is appropriate for inclusion within the UGB. Large portions of the property are effectively surrounded by the current UGB and urban development. The varied topography of the site and its proximity to Shevlin Park provides unique opportunities for development of new open space corridors and trail connections that could link existing areas of urban development to the adjacent public lands. Incorporation of the parcel into the UGB will also provide the City with an additional tool to address existing wildfire risks on the west side of Bend. Thank you for considering our concerns.

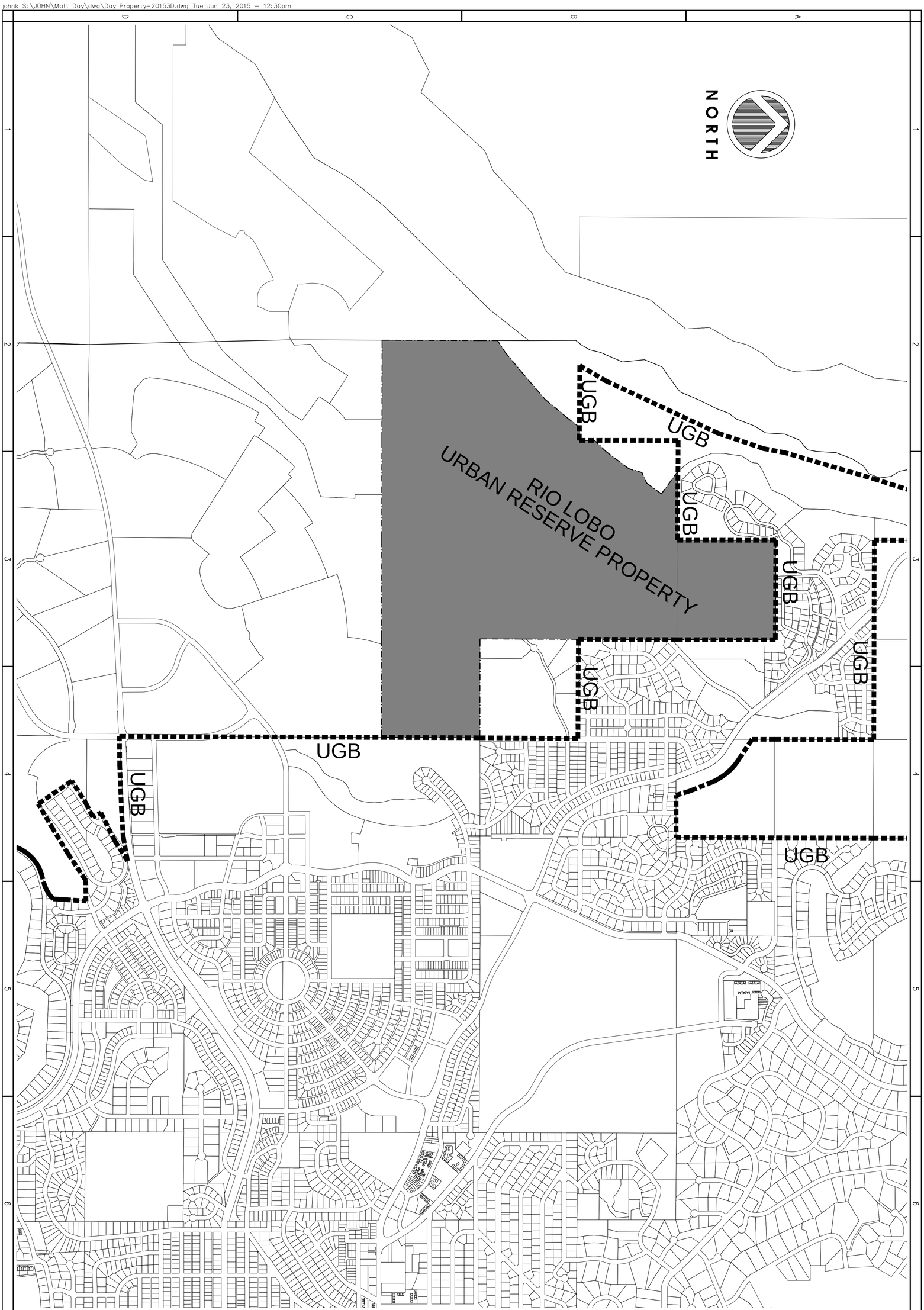
Sincerely,

Myles A. Conway

cc: Clients

Enclosures

johnk S:\JOHN\Matt Day\dwg\Day Property-20153D.dwg Tue Jun 23, 2015 - 12:30pm



HWA # NUMBER

SHEET 1/1

DATE 06/22/2015

FILE: DAY PROPERTY.DWG

SCALE: 1"=600'

CHECKED BY: JMK

DRAWN BY: JMK

DESIGNED BY: JMK

REVISIONS

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RIO LOBO
URBAN RESERVE PROPERTY
URBAN GROWTH BOUNDARY

DESCHUTES COUNTY OREGON

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Singletree
ENTERPRISES, LLC

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TO: Myles Conway, Martin Law

FROM: John Jackson, Singletree Enterprises, LLC

SUBJECT: Land Use Considerations: Parcels 17-11-00 TL600 & 17-11-26TL 400 - Rio Lobo Investments, LLC

Date: June 17, 2015

Three site visits were conducted on these parcels in the last five months. The last two were in December while brush mowing was in progress and later in March after snow melt to get a more in depth sense of current conditions on the site.

Background

The majority of these two parcels burned during the 1990 Awbrey-Hall Fire which started along Tumalo Creek in Shevlin Park. Since that time the footprint of the old fire has been re-vegetated by Bitterbrush, Manzanita and Rabbit Brush with widely scattered bunch grass. Very little, if any natural regeneration of Ponderosa pine has occurred from the surrounding fringe of mature pine.

Land Use Considerations

From the land management perspective there appears to be two major considerations:

- Potential to regenerate a viable Ponderosa pine forest
- Wildfire risk and threat potential to the developed areas on Bend's west side.

Singletree Enterprises provides a variety of consulting services for application to wildland fire, forest resources management and community preparedness planning. John Jackson retired from the Oregon Department of Forestry as a Unit Forester after 28 years of progressive fire management and natural resource related assignments. At the time of his retirement, he was qualified as an Incident Commander (ICT2), Operations Section Chief (OSC1) and Agency Representative. Previous qualifications included Fire Behavior Analyst and Safety Officer and a variety of operations-related positions. John graduated from Oregon State University with B.S. degrees in Biological Science ('69) and Zoology ('70).

Options for forest regeneration-

As noted above, natural regeneration of pine has not occurred in the 25 years since the fire. While that can be the result of inadequate seed source, it appears that in this case that has not been the cause. Alternatively, the soil types present, elevation of the site as well as being deeper into the Cascade rain shadow do appear to be the limiting factors.

The soil types (Type 123D Sisters-Yapoah Complex and Type 69D Kweo gravely sandy loam)[i] identified as present on these parcels both have low fertility and substantial limitations to successful natural regeneration or seedling survival. Both are characterized by an organic mat of 2 inches or less with the substrate soil having low water availability and capacity. The organic mat contains the nutrients and biological support needed both for successful seed germination and growth and for planted seedling survival. Because of the intensity of the fire, nearly all of the organic layer on the surface was lost. Seedlings planted on Yapoah soils also have a poor survival rate because of the low available water capacity.

Competition from undesirable vegetation is also common with these soil types. The above-mentioned brush fields that have taken over the site since the fire illustrate that characteristic.

As a result of these regeneration challenges, re-establishment of a commercial pine forest on this site would probably not be cost effective from both the regeneration success as well as slow growth rate and long recovery period.

In addition to soil challenges, annual precipitation due to the lower elevation is marginal. When factored in with the loss of the organic layer and the low water retention rate of the soils regeneration is further compromised. Western Juniper in the area also creates moisture competition compromising pine survival.

Wildfire Mitigation Considerations

Whereas the forest regeneration issues discussed above generally apply specifically to the parcels in question, in order to be meaningful the wildfire issue should be considered on a broader scale as a part of the overall wildland fire fuels initiative along the length of Bend's west side.

In large measure as a result of the Awbrey-Hall Fire and the subsequent Skeleton Fire on Bend's southeast side, public awareness of the importance of hazardous vegetation mitigation treatments has expanded. Programs such as Deschutes Project Wildfire, USFS focus on mitigating treatments adjacent to private lands along the west side and the Oregon Department of Forestry's *Oregon Forestland-Urban Interface Fire Act (aka SB360)* have collectively helped to create a more defensible zone where suppression resources can work more effectively and safely to prevent wildland fire from burning into developed areas.

The overall concept is similar in many ways to the military's concept of "defense in depth." Areas further away to the west of the urban area can be treated with more modest prescriptions with progressively more thorough treatment prescriptions closer to urban areas.

In Bend's case the West Bend Fuel-break concept has resulted in substantial treatment acreage roughly along the FS 4606 Road (Old Brooks-Scanlon Mainline). The USFS work continues that concept further south of the Shevlin Park area.

As one progresses further eastward, substantial areas of high density residential development now line Shevlin Park Road, the Northwest Crossing community has been developed, Summit High School and a variety of other developed infrastructure is now present either within the Awbrey-Hall Fire scar or immediately adjacent to it.

Higher density residential areas are encountered the further east one travels. In these areas more house specific vegetation treatment programs are in place.

There is a parallel continuum of fire suppression equipment and tactics as one moves from west to east. Traditional wildland equipment and equipment transitions to a mix of wildland and structural and then to a full traditional structural response.

Unfortunately, when significant acreages of wildland fuels are present and intermingled with areas of residential development the model begins to loose effectiveness. The two parcels referenced above, until recently untreated, fall well inside of where undeveloped wildland would ideally "fit". Further, their presence degrades the effectiveness of the work completed further to the west. When discussing fire risk it is important to remember that it isn't the larger overstory trees, it's the brush and other ground fuels that are the real problem.

Ideally from a suppression tactics perspective, the main body of a fire moving toward town would be stopped at the Mainline/4606 Road with spot fires picked up in the areas toward town. The presence of large blocks without vegetation mitigation and inadequate access for fire equipment immediately adjacent to high density housing doesn't make sense because they provide an area and fuels to support the rebuilding of higher fire intensity that in turn restarts the spotting process.

Developer-funded roads, fire hydrants and access infrastructure in areas such as these two parcels becomes part of the solution rather than part of the problem.

The reality is that the wildland-urban interface ("WUI") already extends well to the west of this site by virtue of the presence of Shevlin Park and existing residential development to the northwest. Development of these parcels would not expand the WUI, but it would provide a mechanism to reduce the flammability and vegetation continuity, and improve access for fire suppression resources. More importantly, these improvements would reduce the threat of high intensity fire to adjacent existing residential areas to the south and east.

Summary

There appears to be three wildland/fire significant issues associated with development of these two parcels.

1. Opportunity for near-term re-establishment of a viable Ponderosa pine stand on these parcels appears to be marginal and not cost effective due to soil and water limitations.

Development of other viable agricultural options are difficult to identify but would appear to likewise not be cost-effective.

2. The presence of significant expanses of untreated wildland fuels within the wildland urban interface (WUI) on Bend's west side adjacent to, and up-wind from high-density residential areas doesn't make good sense as it adds an increment of additional risk of high intensity fire and renewed spotting from ember showers downwind.

3. Development of this area using fire-wise planning, structure design and building materials provides the mechanism for long term mitigation of the brush hazard, development of good access and water supply infrastructure.

   The overall effect would provide a higher level of fire safety for these parcels and, from a strategic perspective, provide an elevated level of safety for existing adjacent areas of high-density development to the east

[i] Soil Survey of Upper Deschutes River Area, Oregon, USDA Natural Resources Conservation Service

CARL W. HOPP, JR.
ATTORNEY AT LAW, LLC

June 23, 2015

To: UGB Technical Advisory Committees
From: Carl W. Hopp, Jr., Attorney for PacWest Development, LLC

Subject: Inclusion of Property in the Urban Growth Boundary

I am writing to discuss the property located at 21455 East Hwy 20 in Bend and for consideration of its inclusion in the Urban Growth Boundary. The property is a 36.39 acre lot that abuts the current UGB. The current plan for the property is a mixed use development illustrated on the attached Plat Plan. The development will provide affordable single family housing prices projected at $225,000 to $275,000 plus town homes, affordable apartment living, and an assisted living facility. This diverse mix of housing will serve many of Bend's housing needs.

Housing will remain affordable because of the low development costs. In addition to land on the east side of Bend being less expensive than land on the west side, connecting utilities and roads to the property will be less expensive than many other developments. Water is available to the property via an eight inch main at Highway 20 and Hamby as well as City of Bend water approximately 200 feet to the west on Highway 20. Existing sewer is available via Livingston Dr. to the west and additional sewer capacity is projected via the approved 27th Street interceptor project scheduled for 2016/2017. Road access to the property is already available from Highway 20 to the north and Bear Creek Road to the south and can easily be connected to Livingston Dr. to the west. Furthermore, the flat terrain of the property reduces the cost and time of initial site work and infrastructure installation which results in lower development costs and more affordable housing. Finally, the builder and developer for this project are the same entity which removes a profit layer from the development and reduces housing prices.

Although the history of catastrophic fires on the east side of Bend is much less than on the west, the property development plan includes numerous efforts to mitigate fire risk. The plan consists of landscaped common areas incorporating drought and fire resistant plantings to act as a firebreak. Irrigation is to be installed at all locations and all structures are to be constructed of fire resistant material like metal and asphalt composition roofing, stucco, and CertainTeed concrete siding materials.

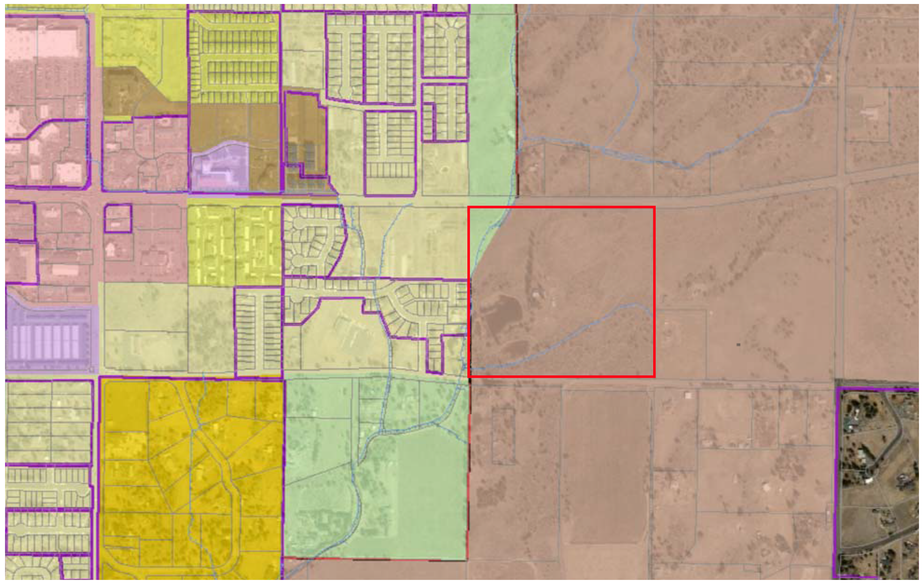
168 N.W. Greenwood • Bend, Oregon 97701 • (541) 388-3606 • FAX (541) 330-1519 • EMAIL: bill@cwhopp.com

Bend's UGB is approximately nine months away and during that time the property will be further prepared for development. I have already enlisted the assistance of Liz Fancher, a local land use attorney, and Roger Borine, a local soils expert, to assist with the rezoning efforts. I anticipate the rezoning process to be completed by the end of the year. I have also discussed removal of the 0.25 acres of irrigation rights with Central Oregon Irrigation District. Remaining development planning includes verification of parking and utilities capacity. The project should be shovel following completion of the UGB process and the 27th Street sewer interceptor.

I strongly encourage the committee to consider this property for inclusion in the UGB as I believe that it meets many of the committee's housing and development goals. Should the committee have any additional questions or require any additional information, please feel free to contact my office.

Sincerely,

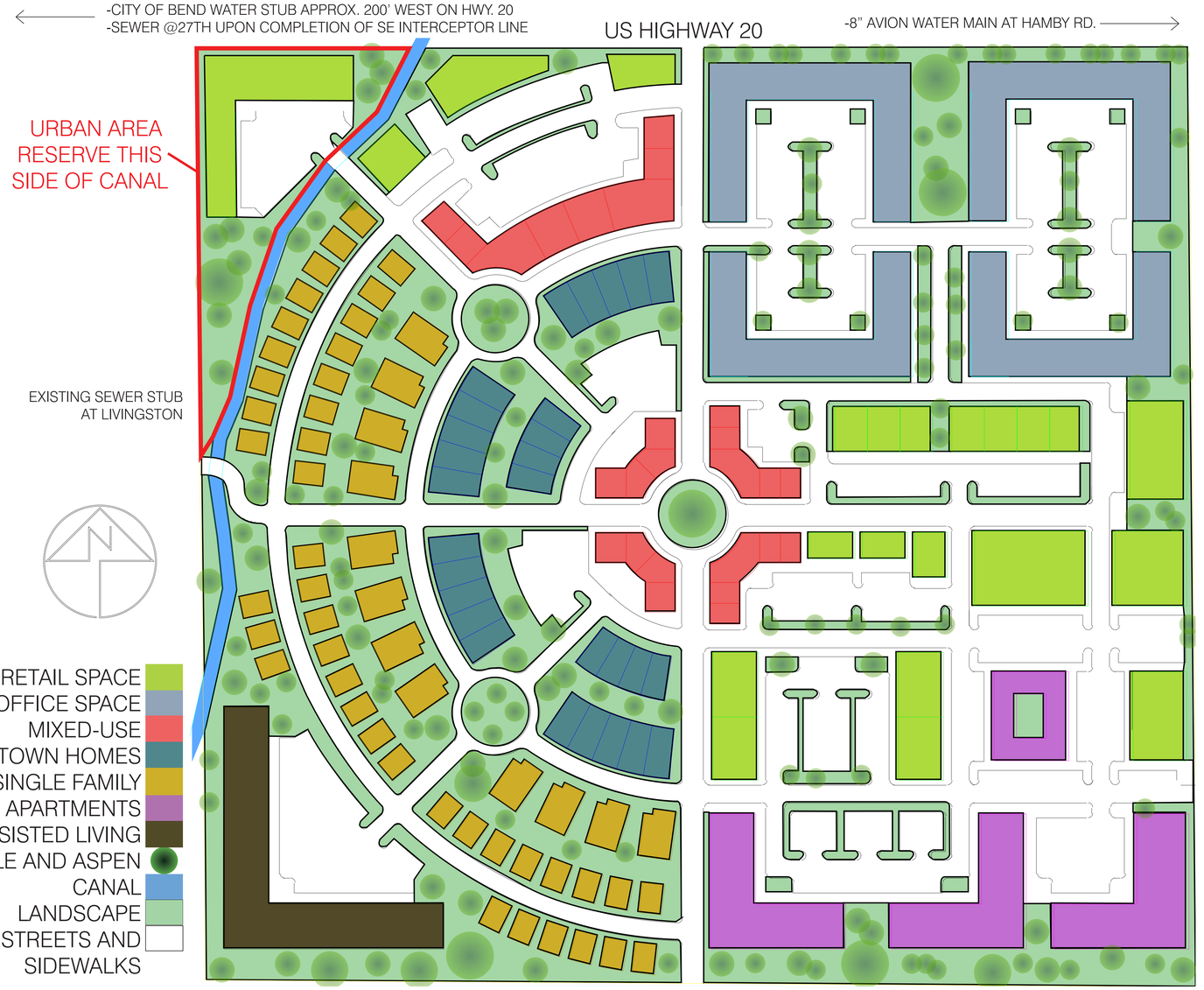
DEREK E. HOPP
dh
Enc.



ZONING MAP: N.T.S.

CB
CC
CG
CH
CL
CN
IG
IL
IP
ME
MR
PF
PO
PO/RM/RS
SR2-1/2
RH
RL
RM
RS
SM
UAR10

VICINITY MAP: N.T.S.



PROPERTY INFO:

SITE ADDRESS: 21455 HWY 20, BEND, OR 97701
MAP & TAXLOT#: 1712350001500
PARCEL SIZE: 36.39 ACRES

PLAT PLAN: N.T.S.

PACWEST BUILDERS

PACWEST BUILDERS
SPENCER WILLIAMS
541.389.2089
CCB# 146351

JACK PINE ESTATES

PLAT PLAN

REVISED

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DATE 6/22/15
SCALE VARIES
DRAWN BY JSW
PROJECT JPE

PAGE 1

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UGB Glossary
(September 2014)

AARG-Average Annual Rate of Growth

ACS – American Community Survey

ADA- Americans with Disabilities Act

AGU- Affected governmental unit

AMI- Area medium income

BLI – an acronym that refers to a buildable lands inventory

BLS- an acronym that refers to the Federal Bureau of Labor Statistics

BMPRD- Bend Metro Park and recreation district

BNSF- an acronym that refers to the Burlington- Northern Santa Fe Railroad

BPA- an acronym that refers to the Bonneville Power Administration

CIP- Capital Improvement Program

COACT- Central Oregon Area Commission on Transportation

COI diversion- where the water from the canal is diverted

DEQ- Department of Environmental Quality

DLCD – Oregon Department of Land Conservation and Development

EOA – Economic Opportunities Analysis

EFU- Exclusive Farm Use, a zoning classification of Deschutes County. Identifies those areas under Deschutes county comprehensive plan designated for agriculture

ESEE – Economic, Social, Environmental, and Energy consequences analysis

GIS- Geographic information system; refers to a relational database that can spatially display data and layers of data

HCS- Habitat conservation study

HNA- Housing needs analysis

HOV- High occupancy vehicles, usually a vehicle with a driver and one or more additional passengers

HUD- Department of Housing and Development

IAMP - Interchange Area management plan-

IGA - Intergovernmental agreement

ISCS - industrial conversion study committee

LCDC - Land Conservation and Development Commission

LUBA - Land Use Board of Appeals

MOU - Memorandum of Understanding

MTP - Metropolitan regional transportation plan

NAICS - North American Industrial classification system

NEPA- National Environment Policy Act

OAR- Oregon administrative rule

ODFW-Oregon department of fish and wildlife

OTIA- Oregon Transportation Improvements Act.

PAPA-Post acknowledgement plan amendment

PFP – Public Facilities Plan

SDC- Systems Development Changes

SIC- Standard industrial classification system

TAC - Technical Advisory Committee

TAZ - Transportation Analysis Zone

TDM - Transportation Demand Management

TGM - Transportation and Growth Management. This refers to a class of planning grants made available by the State of Oregon to local governments for certain types of planning projects

TMA - transportation management area

TND- traditional neighborhood designs. May also be referred to as a new-urbanist design typically includes a mix of housing, Commercial, and employment elements, as well as parks and schools all within close proximity and supported by a dense street grid

TPR – State Transportation Planning Rule (See OAR 660 Division 12)

TSP- transportation system plan

UGB – Urban Growth Boundary

USC – Urban Growth Boundary Steering Committee

Remand Task Force Meeting
Monday, January 13, 2014
Minutes

1. Call to Order

Vice Chair Barram called the meeting to order at 3:08 PM. Present were the RTF members, Bill Wagner, Doug Knight, Sally Russell, Jodie Barram, Victor Chudowsky, Jim Clinton, Scott Ramsay and Mark Capell.

2. Appointment of Chair, Vice Chair

Mr. Clinton nominated Mr. Chudowsky to be Chair and Ms. Russell seconded the motion. It was unanimously passed. Mr. Clinton then nominated Mr. Wagner as Vice Chair and Ms. Russell seconded the vote. It passed unanimously.

3. Approval of Minutes - November 18, 2013

The minutes were unanimously approved with Ms. Russell moving and Mr. Knight seconding the vote.

4. Recap of Presentation from November 18, 2013

Mr. Syrnyk discussed our last meeting. He mentioned the tracking table and that we would like to use it as a tracking sheet so we can check off items as we move forward. Today, we'll focus on one task 2.2.

5. Presentation and Discussion-UGB Remand 2.2-Buildable Lands Inventory

The first slide discussed the definition of the BLI and the task we have before us. The second slide discussed why we need to inventory the buildable land. The third slide explained substantial evidence and what that means. The fourth slide discussed the different classifications of land and Mr. Syrnyk went over each one in more detail. The next slide was a table outlining summary data and explained preliminary acres in BLI and capacity (housing units). The next slide explained the importance of findings and addressed the statutes and the administrative rules. The last one explained the next steps on the use of the BLI.

Mr. Syrnyk then discussed infill and whether CC&Rs limit the size of lots in developments and whether it limits development on those lots. Chair Chudowksy mentioned that we have this number out there that may not be accurate and he is concerned about a possible legal challenge. Vice Chair Wagner wondered if we should see if CC&Rs were changed during that time? Can we expect a similar trend? Would it be worth the effort of seeing what happened? Mr. Syrnyk responded that some of the

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older subdivisions would have the potential for developing further. We didn't look at it prior to the 2009 BLI. Ms. Winters mentioned that the RTF would need to decide if it's enough to just look at trends or should we have to review those CC&Rs individually. Mr. Capell clarifies that we do not have to do this but we could do it to get an accurate number and it could potentially increase or decrease the number of housing units that would then increase the amount of land outside the UGB that would need to be added. Mr. Syrnyk thought a GIS analysis might be easiest. The discussion ensued whether we should to this - would it be a good investment of our time? The maps handed out today may help to decide whether it is worth our time. Mr. Syrnyk thinks it may be possible. We might have the time before the consultant comes on board.

Public Comment:

Dale Van Valkenburg believes that it's easy for him to get his hands on the CC&Rs for Brooks Resources. He feels there is a value in reevaluating the numbers. Mr. Syrnyk mentions we should focus on the planning period and be consistent.

Mr. Hultberg echoes Mr. Van Valkenburg's comments. He believes they should look at all the infill and we should be consistent. Though we are not required to do it, we may be forced to face that issue down the road. We are looking at big subdivisions, not small ones.

Mr. Capell asks if we would go back to the partially vacant and vacant land to which Mr. Hultberg mentions there ~~isn't a lot of acres~~aren't a lot of acres there. Mr. Syrnyk would need to talk with Mr. Van Valkenburg to see how long it could take.

Mr. White mentions that he is concerned we are going to overstate the potential for re-development and that we'll have a UGB that's too small. He agrees that it is advisable to look at CC&Rs. He believes it is a big issue and you would want more input from citizens and at least talk with neighborhood associations. We can chart our own course.

Mr. Capell mentions that he hears that they would like us to look at CC&Rs but he is not hearing that there's a cry to go after the vacant to which Mr. White mentions that he believes we should go after both.

Ms. Russell asks for clarification regarding going the route of the remand and if we had to accept and work with certain data.

Ms. Swirsky from the DLCD mentions that their position throughout is that if the City wanted ~~we want~~ to use a different number other than 5,151, that they needed to demonstrate to us why those lots were not available for infill. Ms. Winters then goes on to say that if we want to use a new planning period, we would have to do a new population forecast, to which Ms. Swirsky expressed her agreement. Mr. Syrnyk clarifies

the limited work the staff would do. Ms. Winters then mentions that if we get challenged, we would be in the best situation if we look at the CC&Rs themselves. We should make really good findings. Ms. Swirsky mentions that if we could come up with a really good plan, we could fly it by the DLCD.

Robin Vora asks how the Central Area Plan has to do with this to which Mr. Syrnyk mentions that the numbers could change.

Liz Dickson mentions that she looked at the problem originally. She thinks it is more than just looking at CC&Rs. There are many lots in Bend that have easements through them, for example. There are a lot reasons that lots don't get developed. She believes you can't just change some numbers and not others - it's complex.

Mr. Chudowksy proposes that we come up with a methodology and do a recount and get a better grip on how complicated it is and whether it's worth the return. Mr. Capell comments that he doesn't know what the staff drain is on this project. Can Mr. Syrnyk determine the time it will take and run it by Ms. Swirsky?

Mr. Wagner asks if we could craft a motion to specify what we'd like done to which Mr. ~~Cappell~~Capell mentions that he doesn't think we have to do a motion. Mr. Syrnyk thinks we'd have the time to determine whether this is something staff could do without taking too much time.

Mr. Chudowksy comments that he's ok with all the other numbers. Mr. Wagner also feels the same.

Ms. Barram asks how we can be fair and not just use Brooks' properties. Ms. Winters mentions that it's not about being fair, it's about having an adequate factual basis. Mr. Syrnyk mentions it might help us verify what we see in the trend data. Ms. Barram would like a more accurate number but doesn't want it to drag it out. Mr. Knight says again that he believes we should rely on the data we have to keep it streamlined. He might be on board if it takes a week. Mr. Clinton mentions that it's complicated. We have more knowledge today and some of these numbers are wrong because we see them differently now because things have happened. If a number is wrong in 2008, it's wrong now. Mr. Capell still feels he's not willing to slow the project down substantially unless we have a good, solid reasoning and if it doesn't happen quickly, he says no. Ms. Russell likes if we can do it in 2 weeks but wouldn't be happy if it takes 6 months. Mr. Ramsay doesn't want it to slow us down.

Mr. Syrnyk will develop a methodology and will email to the RTF - no need to wait for next meeting. Mr. Capell says if we can do this before the next meeting, let's do it.

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Mr. Syrnyk adds that we should look into it, see if we can have it done quickly, see if it is something DLCD supports, and then let's bring it back to the next RTF meeting.

Ms. Russell asks that Mr. Syrnyk be ready to discuss at the next joint planning commission meeting -- to check in.

Mr. ~~Cappell~~Capell asks staff to look at developed land with infill potential and determine if it's something that can be done quickly without putting a delay on the process, have it done before the next meeting and check in next week (the 24th). Present something on the 24th. They'll then decide if it's worth going forward.

6. Adjourn at 4:46

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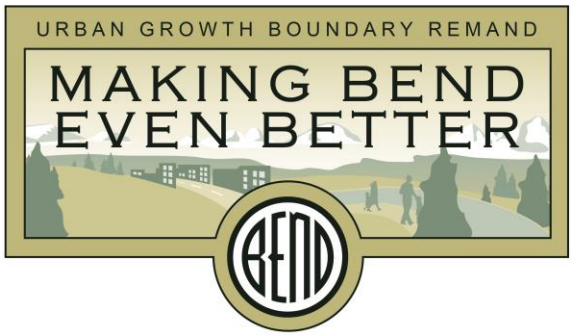
PROJECT GOALS

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.

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

Bend Urbanization Report

Bend's Growth to 2028

Draft, Part 1: December 1, 2015

DRAFT

ACKNOWLEDGEMENTS

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*Denotes Ex-Officio, non-voting members
** Member of Residential / Employment TAC in Phase 1, participating in Boundary TAC in Phase 2

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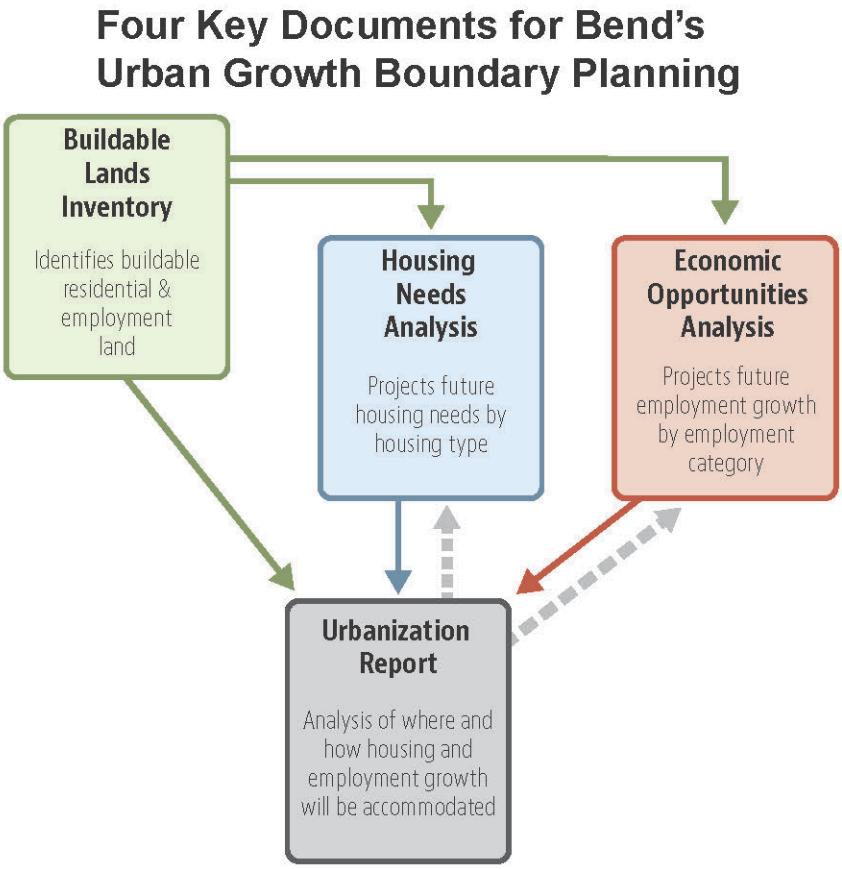
EXECUTIVE SUMMARY

Introduction

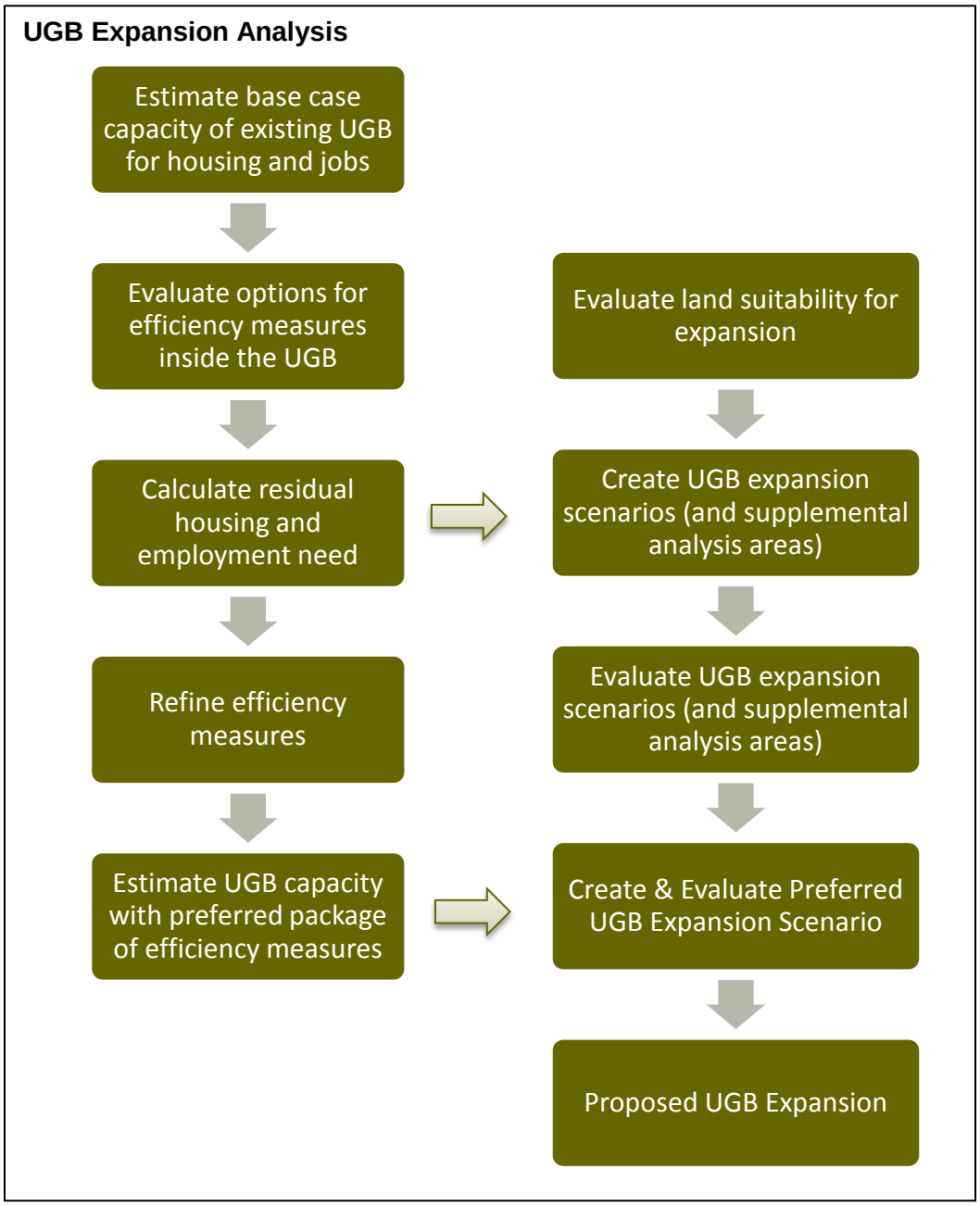
The Urbanization Report presents an analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas. The analysis addresses requirements pertaining to UGB expansions under Oregon state law and administrative rules. The Urbanization Report draws on information from the Housing Needs Analysis, the Economic Opportunities Analysis, and the Buildable Lands Inventory, as illustrated on Figure ES-1.

Figure ES-1: Relationship of Urbanization Report to other Technical Documents for UGB Planning



This Urbanization Report: summarizes the methodology used to determine land sufficiency and future UGB land need (illustrated in Figure ES-2); estimates the capacity of the existing UGB under current policies and with land use efficiency measures applied; summarizes the remaining residual growth that cannot be accommodated within the existing UGB; documents the evaluation of UGB expansion alternatives;, identifies proposed UGB expansion areas to meet residual land needs; and, documents the factual base for the inclusion of expansion area in the UGB.

Figure ES-2: UGB Expansion Analysis Process Summary



A scenario planning tool called "Envision Tomorrow"[1] was used to analyze capacity and options for future growth in Bend. Envision Tomorrow applies development assumptions spatially and provides a sketch-level analysis of the possible impacts of policies, development decisions and growth trajectories. Development assumptions within the model include: a mix of specific building prototypes, which are based on information including parking requirements, height limits, and lot coverage ratios; streets, neighborhood parks, and other set-asides; net residential and job density; and rate of redevelopment. All assumptions are calibrated to Bend's

[1] Information and download available at http://www.envisiontomorrow.org/

development and market conditions. The model summarizes total residential and employment growth, including providing information about the overall mix of units and jobs, and can be used to provide sub-area summaries. It also provides a comprehensive range of indicators relating to land use, housing, demographics, economic growth, environmental factors, and quality of life. To complement the indicators available in Envision Tomorrow, additional modeling and analysis tools were used to evaluate infrastructure needs and implications of UGB expansion scenarios, including a Travel Demand Model for transportation analysis and water and sewer optimization models.

Base Case UGB Capacity

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.

In total, the base case shows that the current UGB (as of July 2014) can accommodate roughly 8,400 housing units and close to 12,000 jobs under the current plan designations and policies and historic trends in development density. This represents just over half of both the total housing and total employment needs forecasts for 2028. The estimated capacity is not evenly distributed across all needed housing types and employment categories.

The mix of housing units projected under the base case is roughly 70% single family detached, 25% multifamily, and 5% single family attached, because most of the total housing capacity (over 60%) is in the Standard Residential (RS) plan designation. As a result, much of the total single family housing need can be met inside the UGB in the Base Case, but only about a third of the single family attached and multifamily housing needs, respectively, can be accommodated.

The mix of jobs that can be accommodated inside the UGB under the base case is a fairly even split between retail/hospitality, office, industrial, and public. All of the public employment needs (and more) can be accommodated on existing land inside the UGB; about 60% of the retail/hospitality, half the industrial, and a third of the office needs can be met inside the UGB.

These results indicate a need for land use efficiency measures to increase the likelihood that needed housing types will be built inside the UGB, and to make better use of both residential and employment land inside the current UGB.

[Note: the remainder of the executive summary will be written as the other chapters of the report are prepared.]

CHAPTER 1. INTRODUCTION

Role of the Urbanization Report

The Urbanization Report presents an analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas. The purpose of this report is to address requirements pertaining to UGB expansions under Oregon's Statewide Planning Goal 14 (Urbanization) and Oregon Administrative Rule (OAR) 660, Division 24 (these are summarized in the following section). The Urbanization Report is a supporting document of the City of Bend General Plan, referred to as the Bend Comprehensive Plan in this report.[2] The Urbanization Report:

- documents current UGB capacity under existing policies and based on historic development trends and current land supply from the Buildable Lands Inventory, including documentation of the capacity analysis methodology, assumptions and results;
- documents land use efficiency measures those considered, those applied, and their impact on capacity;
- translates growth projections from needed housing units and jobs by type (based on projections in the Housing Needs Analysis (HNA) and Economic Opportunities Analysis (EOA) to needed acres by plan designation;
- summarizes the remaining residual growth that cannot reasonably be accommodated within the existing UGB, documents the evaluation of alternative boundary location alternatives; and
- identifies proposed UGB expansion areas to meet residual land needs documented by a factual base for their inclusion in the UGB.

The Urbanization Report is one of four related technical reports that contain the City's analysis related to growth (see Table 1). The documentation of housing and employment need projections is contained in the HNA and the EOA; this report will include only the final need numbers. Existing land supply is documented in the Buildable Lands Inventory (BLI); this report will include only brief references and results. The policies that implement the conclusions from this report and the other supporting reports are found in the City's Comprehensive Plan.

[2] The Bend General Plan is the official title of the city's comprehensive plan as of the writing of the first public review draft of this report. The City anticipates amending the title to be Bend Comprehensive Plan when the plan is amended in 2016.

Table 1: Four Key Documents for Bend's Urban Growth Boundary Planning

Document	Buildable Land Inventory (BLI)	Housing Needs Analysis (HNA)	Economic Opportunities Analysis (EOA)	Urbanization Report (UR)
Purpose	Identify buildable residential & employment land by category	Address the requirements for planning for needed housing, including analysis of national, state, and local demographic and economic trends, and recommendations for a mix and density of needed housing types	Document historical employment and demographic trends, the projection of employment growth, identification of target industries, and evaluation of site characteristics needed to accommodate target industries	Analysis of where and how Bend's future growth will be accommodated, both inside the existing Urban Growth Boundary (UGB) and in expansion areas
Primary Legal Standards[3]	ORS 197.296 OAR 660, Divisions 8 and 9	Statewide Planning Goal 10: Housing ORS 197.296 and 197.303 OAR 660, Division 8	Statewide Planning Goal 9: Economic Development OAR 660, Division 9	Statewide Planning Goal 14: Urbanization ORS 197.298 OAR 660, Division 24
Key Subject Matter	Development status categories and definitions Methodology for assigning categories and conducting inventory Inventory results: acres by plan designation and development status	Projection of population and total housing growth Housing market and development trends Demographic characteristics and trends Analysis of affordability Estimate of needed housing (mix and density) Comparison of housing capacity to need	Existing policy and vision National, state, local trends Employment projections Target industries Site needs and characteristics Special site needs Redevelopment analysis Comparison of employment capacity to need and characteristics	Methodology for capacity estimates Pre-policy ("base case") capacity estimate for current UGB Efficiency measures (EMs) proposed Current UGB capacity with EMs UGB alternatives evaluation methodology and results Proposed UGB expansion and summary of Goal 14 evaluation results

[3] OAR = Oregon Administrative Rules; ORS = Oregon Revised Statutes

Framework for the Urbanization Report

State Statutes and Administrative Rules

Overview

Statewide Planning Goal 14 requires that cities establish and maintain UGBs to provide land for urban development needs and to identify and separate urban and urbanizable land from rural land. Goal 14 and Oregon Revised Statutes (ORS) 197.296 and 197.298 contain requirements for how local governments identify how much land is required to meet urban development needs, how they establish the capacity of the existing UGB, and how to identify and evaluate land for UGB expansion if needed. These requirements are summarized in brief below; the full text of the relevant statutes and rules is included in Appendix A.

Establishing Land Needs

Establishment and change of the UGB must be based on the demonstrated need for housing, employment opportunities, and/or other urban land uses such as public facilities, streets and roads, schools, parks or open space over a 20-year period.[4] Housing needs must be established consistent with a coordinated 20-year population forecast, the requirements for determining housing needs in Goals 10 and 14, and related rules and statutes (see Bend Housing Needs Analysis for a summary of these requirements).[5] Employment needs must comply with applicable requirements of Goal 9 and related administrative rules (see EOA for a summary of these requirements). [6]

Inventory and Land Sufficiency

Local governments "must inventory land inside the UGB to determine whether there is adequate development capacity to accommodate 20-year needs". Inventories must comply with requirements in OAR 660-024 and other statutes and rules (see Bend Buildable Lands Inventory for a summary of these requirements).[7]

"If the inventory demonstrates that the development capacity of land inside the UGB is inadequate to accommodate the estimated 20-year needs ..., 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."[8] Local governments may adopt new measures that increase the housing capacity of the existing UGB as part of meeting demonstrated housing needs.[9] Local governments must demonstrate that needs cannot

[4] Goal 14: OAR 660-015-0000(14), effective April 28, 2006.

[5] OAR 660-024-0040(4), effective March 25, 2015.

[6] OAR 660-024-0040(5), effective March 25, 2015.

[7] OAR 660-024-0050(1), effective March 25, 2015.

[8] OAR 660-024-0050(4), effective March 25, 2015.

[9] ORS 197.296(6) through (9), effective 2003.

reasonably be accommodated on land already inside the urban growth boundary prior to expanding the UGB. [10]

Identifying Boundary Expansion Areas

In considering locations for UGB expansions, local governments must determine which land to add by evaluating alternative boundary locations.[11] State statute classifies rural land into priority categories for purposes of evaluating potential UGB expansions, with the intent of protecting high-value agricultural and forest land for those uses. Local governments must begin by evaluating the highest priority of land available, and determine whether land in that priority category is suitable and sufficient to meet the identified land needs before moving on to consider land in lower priority categories.[12] If there is more land in a given priority category than needed to satisfy the deficiency, local governments must consider and balance four factors in Goal 14 to choose which land from that priority category to include in the UGB:

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.[13]

The "relative costs, advantages and disadvantages of alternative UGB expansion areas with respect to the provision of public facilities and services" must also be evaluated and compared.[14] The local government may specify certain characteristics that are necessary for land to be suitable for specific types of identified land needs, and may consider only land that has those characteristics.[15]

Prior Work and Remand Issues

UGB Expansion History

The City's process for demonstrating a need for UGB expansion began in 2004, and included the development and adoption of a coordinated population forecast with Deschutes County, followed by three years of technical work on buildable lands inventories, housing needs analysis, economic opportunities analysis, forecasting additional residential and employment lands, and public facilities (water, sewer, transportation) planning. The City and county

[10] Goal 14: OAR 660-015-0000(14), effective April 28, 2006; OAR 660-024-0040(1), effective March 25, 2015; and OAR 660-024-0050(4), effective April 16, 2009.

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

[12] ORS 197.298, effective 1999; and OAR 660-024-0060(1), effective April 16, 2009.

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

[14] OAR 660-024-0060(8), effective April 16, 2009.

[15] ORS 197.298, effective 1999; and OAR 660-024-0060(5), effective April 16, 2009.

conducted extensive public outreach, including work sessions and hearings, on the UGB expansion in 2007 and 2008. The Bend City Council and Deschutes County Board of County Commissioners' approved the UGB expansion proposal in 2009. These local adoptions were followed by a number of appeals to the Land Use Board of Appeals (LUBA) and Land Conservation and Development Commission (LCDC).[16] The Oregon Department of Land Conservation and Development (DLCD) Director's Report in January 2010 remanded the proposal back to the City for further work; the City of Bend and 11 other parties filed appeals to LCDC. In November 2010, LCDC issued an order that partially acknowledged and partially remanded Bend's proposed UGB expansion. Certain elements of the City's proposal were approved (acknowledged); the remaining elements required additional explanation and/or work (remand). The Commission's final order became final on January 3, 2011. That order is referred to as the Remand.

From January 2011 to the present, the City established a special Task Force and then three Technical Advisory Committees supported by city staff and a team of consultants working to address the issues raised in the Remand.

Remand Issues Addressed

This report provides updated analysis related to a number of issues raised in the Remand. These are summarized in brief below, with references to their number in the Remand Scope Index, which was prepared by City staff to compile all Remand directives to the city (see Appendix B for index of relevant Remand directives; details of how each Remand issue has been addressed will be in the Findings Report).

- Determining current UGB capacity based on past trends and current policies (see Remand Directives 2, 12 through 14, 58, 59 and 75);
- Consideration of land use efficiency measures (see Remand Directives 26 and 30 through 50);
- Documentation or re-evaluation of the employment land redevelopment rate (see Remand Directives 62 and 63); and
- Evaluation of alternative expansion areas (see Remand Directives 22, 91, 93 through 101, 105 through 110).

Time Periods and Data used in the Urbanization Report

State statute and rule requires the use of a 20-year planning horizon for UGB expansion. OAR 660, Division 24, clarifies that the 20-year period must begin on the date initially scheduled for completion or adoption of the amendment.[17] Because this report is completing work required under the Remand of the 2009 UGB expansion proposal, the 20-year planning period begins in 2008 and runs through 2028. However, this report is being completed in 2015/2016 based on analysis that began in 2014. Despite the economic recession that affected most of the

[16] LUBA dismissed the appeals after the City showed the matter was before LCDC.

[17] OAR 660-024-0040(2), effective March 25, 2015.

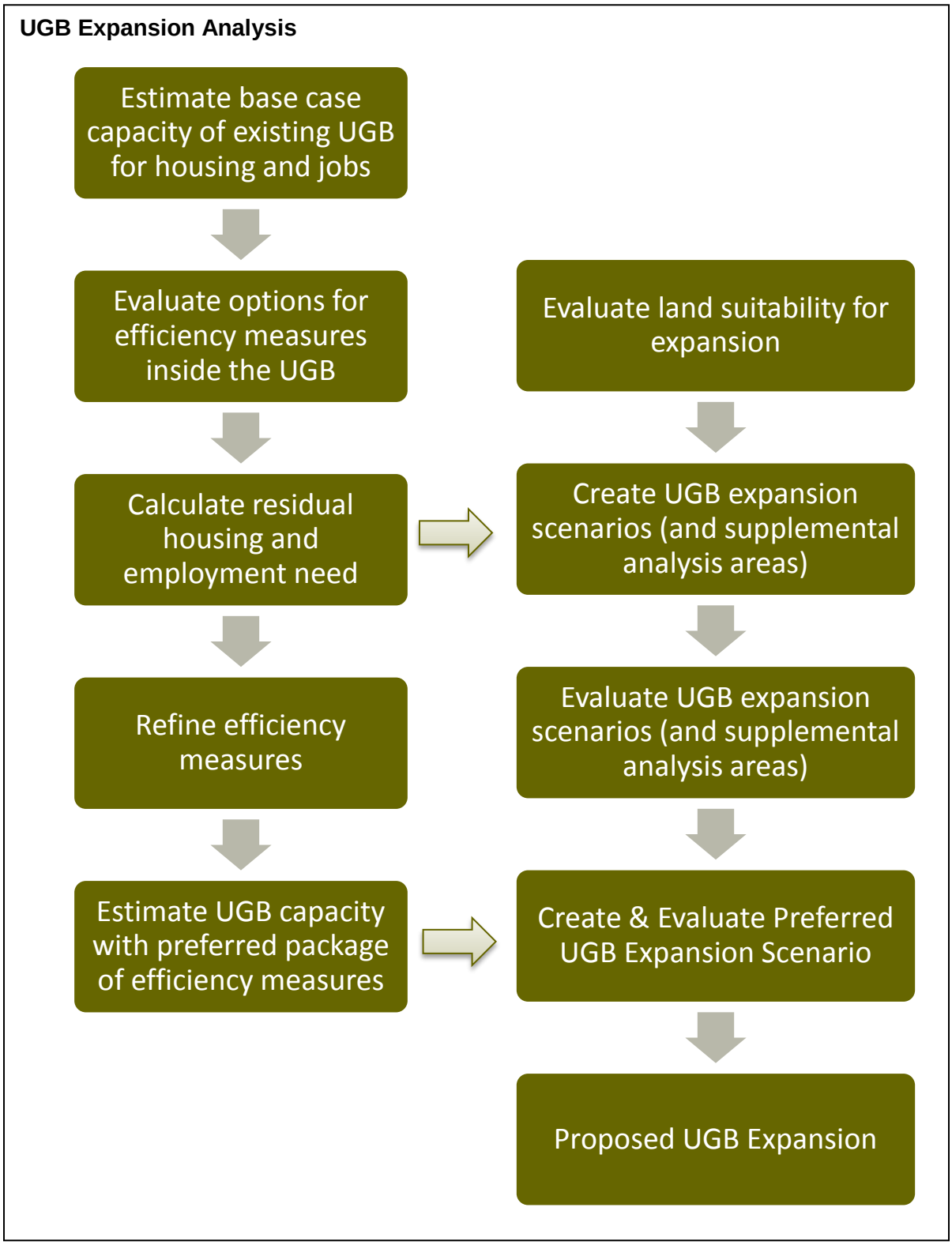
intervening years, development did occur in Bend between 2008 and 2014 (and continues as this report is being prepared). To provide the most current data possible of remaining capacity inside the current UGB and how much of the projected 20-year housing and employment growth has already occurred, the buildable lands inventory was updated in 2014 and housing and employment growth through 2014 has been estimated and deducted from the projected 2028 needs. This report focuses on the remaining capacity and growth needs from 2014 to 2028.

CHAPTER 2. METHODOLOGY

Analysis Steps

The process of determining land sufficiency and UGB expansion need is summarized in Figure 1. Each step of the process outlined in Figure 1 is summarized in this report. In addition to the process described in Figure 1, three different Technical Advisory Committees (TACs) and a UGB Steering Committee (USC) were used to guide the technical work and make decisions prior to formal adoption by the governing bodies. The TACs and USC provided guidance and feedback on each step of the process described in Figure 2 through more than 10 meetings taking place over nearly two years.

Figure 1: UGB Expansion Analysis Process Summary



Analysis Tools

Overview

A scenario planning tool called "Envision Tomorrow"[18] was used to analyze capacity and options for future growth patterns in Bend. Envision Tomorrow applies development assumptions spatially and provides a sketch-level analysis of the possible impacts of policies, development decisions and growth trajectories. Scenario comparison measures include a comprehensive range of indicators relating to land use, housing, demographics, economic growth, environmental factors, and quality of life. (See next section for more on this model and how it works.)

To complement the indicators available in Envision Tomorrow, additional modeling and analysis tools were used to evaluate infrastructure needs and implications of UGB expansion scenarios, including a Travel Demand Model for transportation analysis (to supplement a transportation analysis tool that is part of Envision Tomorrow's suite of planning tools) and water and sewer optimization models. These tools and their role in this analysis are discussed in more detail in Chapter 5.

About the Envision Tomorrow model

Envision Tomorrow applies a set of assumptions about future development spatially to land with development or redevelopment potential. These assumptions are organized into "development types" that reflect different types of residential and employment development. The model does not predict exactly how a given parcel will develop; rather, it applies a mix of different types of development and land set-asides (using percentages of available acres) across multiple parcels. Results are calculated at the parcel level, but, because they represent blended averages for future development rather than site-specific assumptions, they are only appropriate to report at a summary level.

The development types generally represent Bend's Comprehensive Plan designations. Assumptions within the development types were calibrated to Bend by the project team with the best available information and with Technical Advisory Committee (TAC) direction at various stages. Development type assumptions include:

- A mix of specific building prototypes, which are based on information including parking requirements, height limits, and lot coverage ratios from the current Development Code (and as modified through specific Efficiency Measures);[19]
- Streets, neighborhood parks, and other set-asides;
- Net residential density and net job density; and
- Rate of redevelopment.

Each of these assumptions is discussed in Chapter 3, beginning on page 15.

[18] Information and download available at http://www.envisiontomorrow.org/

[19] Prototype buildings were reviewed by the Residential and Employment TACs in August, 2014.

Development types are assigned to lands through "painting" tax lots, or portions of tax lots.[20] Each buildable acre of land where a development type is applied is assigned a percentage of each of the building types as well as the specified percentage set asides that comprise the development type. The identification of buildable land is described in detail in the BLI. That report should be consulted for details, but, in brief:

- Development constraints, such as floodplains and steep slopes, are identified as "constrained" in the model, and no development or redevelopment is assigned to them.
- Existing development is identified as "developed" in the model;[21] growth on "developed" land is controlled through the redevelopment rate in each development type. The redevelopment rate specifies what percentage of the developed land should have the development assumptions of the development type applied to it. It does not specify which land exactly is redeveloped, only how much of it is redeveloped overall.
- Unconstrained and undeveloped land is identified as "vacant" in the model; growth is projected on vacant land using the assumptions built into the development type.

The model summarizes total residential and employment growth, including providing information about the overall mix of units and jobs, for the scenario as a whole. The model can also be used to provide sub-area summaries for a variety of different geographic areas. In addition, because the model incorporates financial information (including locally-calibrated construction costs) for each of the building prototypes, the model can provide information about the affordability of future development.

Envision Tomorrow also includes a specialized tool for analyzing vehicle miles traveled and mode split based on the future land use and household characteristics. This tool is discussed further in Chapter 5 (see page X) with regard to evaluation of UGB expansion alternatives.

Forecasts and Land Needs

The methodology and details of the population/housing unit and employment forecasts summarized in this section can be found in the HNA and EOA, respectively. The tables below summarize the remaining need within the planning period (2014 to 2028) by housing type and employment category for reference only. The translation of these housing and employment needs (units and jobs) to land needs in terms of acres by plan designation is presented in Chapter 5.

[20] Inside the UGB, large tax lots (over 14 acres) were split into 14-acre grid squares in order to allow assigning multiple development types to a single large parcel. Outside the UGB, tax lots were divided into 3.5-acre grid squares.

[21] See Step 4 of the BLI for how vacant and developed acres were determined for lots that have some development but also have remaining development potential.

Table 2: Summary of New Housing Units by Type and Category, Bend UGB, 2014-2028 [22]

	2014-2028 Needed Housing Units		2014-2028 Needed Group Quarters Units	2014-2028 Second Homes	2014-2028 Total New Housing Units	
Needed Housing Types	Units	Mix	Units	Units	Units	% of Total Units
Single-family detached (including mobile homes)	7,574	55%		1,652	9,225	54%
Single-family attached	1,377	10%		300	1,677	10%
Multifamily	4,819	35%	461	1,051	6,331	37%
Total	**13,770**	**100%**	**461**	**3,003**	**17,234**	**100%**

Table 3: Employment Forecast by Employment Category, non-shift workers, Bend 2013 to 2028 [23]

Employment Categories	2013 Employment	2028 Employment Forecast	2013 to 2028 Growth
Industrial			
Industrial Heavy	2,889	5,180	2,291
Industrial General	3,771	8,002	4,231
Retail			
Large Retail	3,057	5,849	2,792
General Retail	3,096	5,293	2,197
Office/Srv/Medical	16,435	23,593	7,158
Leisure and Hospitality	4,017	5,532	1,515
Other / Misc	1,505	1,547	42
Government	3,894	5,611	1,717
Total	38,664	60,607	21,943

[22] Based on the definitions in OAR 660-008-0005 and in the Bend Development Code, the needed housing types are defined as follows:

- "Attached Single Family Housing" means common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot.
- "Detached Single Family Housing" means a housing unit that is free standing and separate from other housing units (includes courtyard housing, detached single family dwellings, accessory dwelling units, manufactured homes on individual lots, and manufactured homes in parks).
- "Multiple Family Housing" means attached housing where each dwelling unit is not located on a separate lot (includes condominium, duplex, triplex, and multi-family housing with more than 3 units).

[23] 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.

In addition to housing and employment needs, the City has identified several other land needs, including public parks, public schools, and special site needs for large lot industrial development and a university. These are summarized in brief below.

[Note: a summary of the original 2008 to 2028 land needs identified for these other uses and an update of remaining need as of 2014 will be provided for schools, parks, and special site needs.]

CHAPTER 3. BASE CASE UGB CAPACITY

About 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, using 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.

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.

Creating and Calibrating Development Types

Overview

As noted previously, the development types generally match existing Comprehensive Plan categories. For residential development types, the densities and mix of housing types were set to match the observed trends from 1998 to 2008 by plan designation, documented in Appendix C.[24] The city is required to base capacity analysis on data since the last periodic review, in 1998.[25] The city's continued reliance on the 1998-2008 data analysis is justified because the residential development in the city from 2008 to 2014 was largely limited to building individual homes on lots created before 2008, due to the economic downturn.[26] This means that the density for the development was set prior to 2008 for nearly all recent residential building activity.

[24] There is one exception: the observed average density in the RH zone between 1998 and 2008 falls below the current minimum density for the zone (which was adopted in 2006). Based on guidance from the Remand, the base case uses the minimum density for the RH zone rather than the observed average.

[25] ORS 197.296(5)(a) requires determination of housing capacity 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 City of Bend Comprehensive Plan.

[26] Land use permit data indicates roughly a dozen residential subdivisions and two multi-family development projects approved (but not necessarily built) since 2008, all in 2013 and 2014, compared to between 600 and 700 single family homes built since 2008 on platted lots.

Employment development types were calibrated to the observed employment mix and density as of 2006, documented in Appendix D.[27]

A few specialized development types were created to address specific situations, such as:

- The Medical District Overlay Zone (MDOZ), an area with primarily residential plan designations but subject to an overlay that allows and encourages development of medical and office uses;[28]
- Identified locations for future schools and parks (see page 18);
- Institutional uses such as Central Oregon Community College (COCC) and the planned site of Oregon State University's Cascades Campus (OSU Cascades);
- Properties with approved development applications that made them more closely resemble a different development type; and
- Vacant platted lots subject to Covenants, Conditions and Restrictions (CC&Rs).[29]

Appendix E provides additional information about each of the development types (such as residential and employment mix and density), including those used in the base case as well as those developed later to incorporate efficiency measures.

[Note: Appendix E will be included with the final Urbanization Report, but is not included at this time.]

Redevelopment

Residential Land

Residential 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."[30]

City staff, in 2011, performed a detailed analysis of residential development activity in the city from 1999 through 2008 by BLI status. The analysis found:

- Land classified as "partially vacant" had very low levels of building permit activity – only 80 permits over 10 years.

[27] The densities and mix in Appendix C were calculated based on City of Bend GIS analysis using Oregon Employment Department (OED) 2006 geo-coded Quarterly Census of Employment and Wages (QCEW) data for City of Bend. They have been adjusted to represent covered employment without shift-workers, employees in public schools, on institutional/recreational lands, and employees working in their own homes. These densities were approved as part of the 2008 EOA by LCDC in the Remand.

[28] The MDOZ development type assumes a mix of uses consistent with the observed employment and housing densities and mix from the same 2006 and 2008 data sets described above.

[29] This development type includes exclusively single family housing and does not include set-asides for other uses or right of way. The density was set such that it generates one housing unit per lot.

[30] OAR 660-008-0005(7), effective February 2012.

- Under 6% of lots (and 26% of acres) classified as "developed with infill potential" in 1999 received building permits for residential infill by 2008: 4% of the lots under one acre (4.5% of the acres in this category) and 36% of the lots over one acre (51% of the acres in this category).

- There was virtually no redevelopment activity – where an existing structure was demolished and additional units were built – on fully developed land during 1999-2008.[31]

The Envision Tomorrow model was calibrated to be roughly consistent with these observations. Because of the way developed and vacant land were identified for lots classified as "partially vacant" and "developed with infill potential" (see Step 4 of the BLI), developed land for the purposes of this analysis is essentially only the portions of those properties where demolition of existing structures would be required in order to allow for redevelopment. For example, within tax lots identified as "developed with infill potential" and under 1 acre, a total of 152 acres were identified as vacant out of 1,440 (11%), with the remainder identified as developed. For larger sites identified as "developed with infill potential", a total of 746 acres were identified as vacant out of 1,130 (66%). On properties classified as "partially vacant," all 93 acres were identified as developed.[32] Thus, the estimation of vacant and developed acres on lots that are "developed with infill potential" or "partially vacant" accounts for an amount of further development that is roughly consistent with, but slightly higher than, the amount that has been seen historically. There is very little evidence of redevelopment through demolition in Bend to date. Thus the redevelopment rate for the developed portion of the partially vacant and developed with infill properties (which also applies to land that is fully developed) is set at zero.

Employment Land

ECONorthwest prepared an evaluation of redevelopment potential on employment land that took into consideration the ratio of improvement to land value, total value per square foot, employment density, and residual land value (given assumptions about building type and rent). A residual land value analysis modeled the financial feasibility of developing prototypical buildings based on achievable rents and current land values. Areas with positive residual land values after redevelopment (i.e. areas where property values are below the amount that a given type of development can afford to pay based on projected rents and costs) are areas where

[31] There were a total of 50 permits issued on lands classified as developed where there was an existing unit AND where the existing unit was demolished; however, only 2 of them resulted in more units than had existed prior to the demolition. In both of these cases, duplexes were built after a single family home was demolished. The rest of the 50 permits resulted in the same number of units (e.g., a single family home was demolished and replaced with another single family home). Therefore, we can assume that only 2 permits were the result of redevelopment; the other 48 were merely replacements of existing units. This is not unexpected, given that for land to be classified as developed it had to be fully developed under the existing zoning regulations.

[32] The partially vacant lands are all less than a half-acre in size. Few have the right to add more than two additional units under current zoning, and none have the right to add more than four additional units. Nearly all are developed with an existing single-family home, and nearly half of the existing homes have been built since 1990. Given that they are, by definition, too small to further divide, the only way to add units would be through conversion to a duplex or triplex or to single family attached housing.

redevelopment is most likely to be financially feasible under current conditions without public investment. The details of the redevelopment analysis can be found in Appendix X of the EOA.

[Note: this is not included with the current draft of the EOA, but is planned to be included with the final EOA. It will be a summary of the memos presented to the Employment TAC on approach to redevelopment analysis.]

In short, it found potential for roughly 1,360 new employees, or 6.6% of total forecast employment, on already developed employment land under the base case. As a percent of developed acres, this redevelopment is equivalent to roughly 1.5% of developed acres overall, with higher percentages in the Central Business District (CB), Industrial Limited (IL), and Mixed Employment (ME) plan designations.

Redevelopment rates for the development types (as a percent of developed acres) were calibrated to the results of the redevelopment potential analysis. Redevelopment rates for employment designations vary as follows:

- 4-6% for Community Commercial (CC), Commercial Limited (CL), General Commercial (CG), ME, Public Facilities (PF), and the industrial designations
- 8-10% for Mixed Riverfront (MR) and MDOZ
- 25% for Central Business District (CB)

Only employment parcels with some likelihood of development or redevelopment were painted with a development type in Envision Tomorrow. Development types were not applied to developed land unless the existing employment density was less than one third of the average employment density of the development type in question.

Set-Asides

In order to account for right of way, neighborhood parks and trails, and "other uses" such as churches, golf courses, etc. that may occupy land in a variety of plan designations but are not employment or housing uses, the development types also include set-asides that convert from gross vacant buildable acres to net residential and employment acres. The approach and general assumptions for these set-asides are documented below. The total amount of land for each set-aside inside the UGB under the Base Case is documented as part of the "Base Case Capacity Estimate" section.

Right of Way

As part of the analysis for the 2008 UGB expansion effort, the City of Bend calculated the amount of land used for right of way city-wide, across all plan designations, at 21%.[33] The "development types" in Envision Tomorrow include some variation in right of way set asides based on the city's block size and street standards for different plan designations, and are also calibrated to result in the overall amount of right of way calculated in 2008.

[33] See Rights of Way Methodology from Brian Rankin; Rights-of-way for roadways variable: final memorandum post DLCD Comments (12/4/2008).

Parks and Trails

Parks are accounted for in two different ways in Envision Tomorrow: future Community Parks are identified with their own development type and an approximate location and size,[34] while neighborhood parks and trails are accounted for through set-asides in certain development types (described below).

Neighborhood parks and trails are built into residential and mixed use development types, on the assumption that they will primarily be built in those areas. Bend Parks and Recreation District (BPRD) has adopted "Level of Service" (LOS) standards for neighborhood parks and trails that specify a target number of acres or miles to be available per 1,000 service population. In their 2012 Parks Master Plan, BPRD set a neighborhood park standard of 1.5 acres/1,000 population. However, their previous standard was 2.0 acres/1,000 population, and in discussions with city staff, BPRD indicated that they may want to revert to the higher standard in planning for higher density future growth. BPRD also has an adopted trails standard of 1 mile/1,000 population. Using an assumed 20' right of way for trails, this translates to 2.4 acres/1,000 population for trails.

Set asides in the development types have been calibrated to provide for a combined total of 4.1 acres of neighborhood parks and trails per 1,000 of new population (see Appendix E [placeholder - not included in the current draft] for details by development type). This includes 2.4 acres/1,000 population for trails and 1.7 acres/1,000 population for neighborhood parks – halfway between BPRD's adopted neighborhood park standard of 1.5 acres/1,000 population and the 2.0 acres/1,000 population they indicated they may want to use for higher density expansion areas.

Schools

Future public K-12 schools are accounted for in Envision with their own development type, similar to community parks. Future school locations inside the UGB were identified based on information provided by city staff and the Bend-La Pine School District. [35]

Other Lands

As part of a 2007 Residential Land Study by Angelo Planning Group, the City of Bend calculated the amount of land used for "other lands" city-wide, including uses such as churches, fraternal organizations, golf courses and other uses that are neither housing nor employment (schools and parks are addressed separately as discussed above). Overall, 12.8% of the city's land area was found to be dedicated to these uses. This percentage set aside is applied to development types representing all plan designations in Envision Tomorrow.

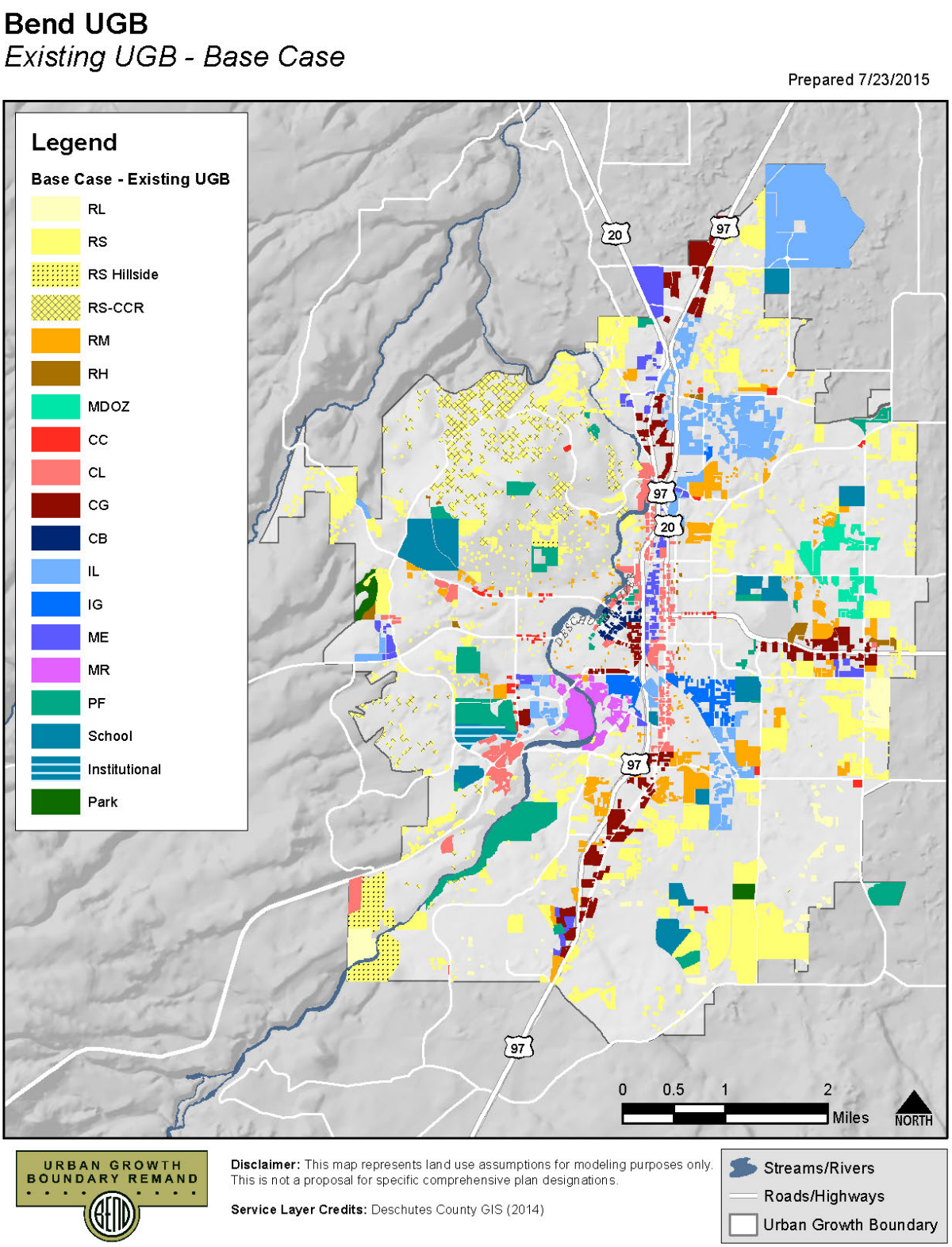
[34] Future community park locations identified in the model are not necessarily under Park District ownership; the locations identified are based on available information and professional judgement about possible future park needs, but are approximate and subject to change.

[35] Future school locations identified in the model are not necessarily under School District ownership; the locations identified are based on available information but are approximate and subject to change.

Applying Development Types

As noted previously, the development types were applied to residential land with development potential, as indicated by having some vacant acres on the parcel. The development type applied was generally consistent with the existing plan designations, except for the special situations identified on page 14. For employment land, as noted previously, development types were also applied to developed land with redevelopment potential. Figure 2 shows the map of development types applied under the Base Case.

Figure 2: Development Types Applied inside UGB: Base Case



Base Case Capacity Estimate

This section provides an estimate of the residential and employment capacity of the current UGB stated in terms of housing units and jobs, as required by OAR 660-024-0050.

Housing Capacity

The following tables and figures describe the residential capacity estimated in the base case scenario. Note that the number of new housing units reported is net of any existing units that may be lost through redevelopment in non-residential districts, and housing unit estimates are rounded to the nearest 10 units. In total, the base case shows that the current UGB can accommodate roughly 8,400 housing units under the current plan designations and policies and historic trends in development density. The mix of units projected under the base case is roughly 70% single family detached, 25% multifamily, and 5% single family attached. Most of the total housing capacity (over 60%) is in the RS plan designation. Only 5% of the total housing capacity is in the RH zone, the city's only high-density residential plan designation. The RH plan designation and the MDOZ collectively provide close to 40% of the total multifamily housing capacity in the city, and are geographically concentrated in a few areas. As shown on Figure 3, overall housing growth is concentrated in the southeast and east, where there is more vacant land.

Table 4: Base Case Housing Capacity

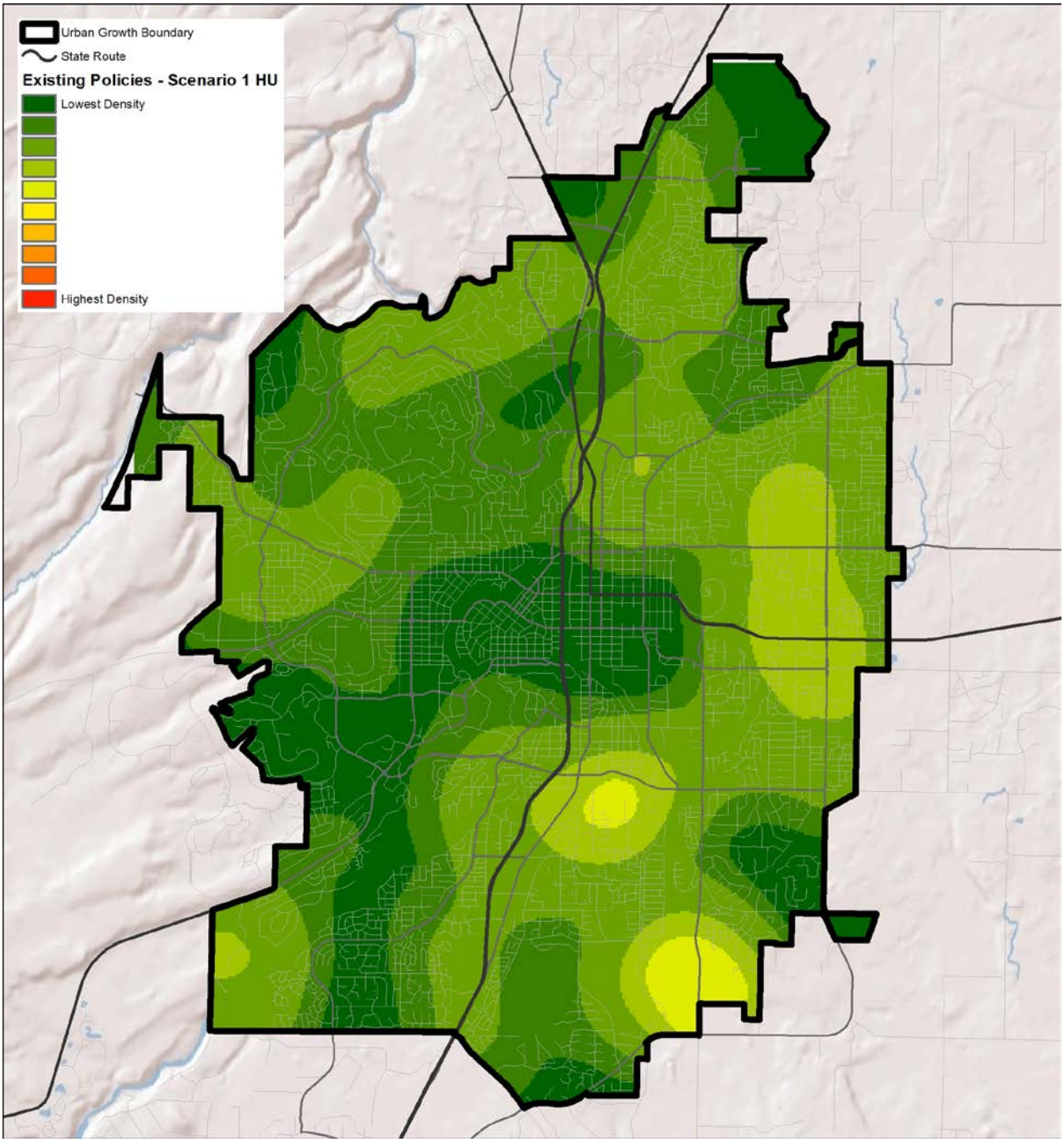
Housing Type	Net New Housing Units	Percent of new housing units
Single Family Detached	5,870	70%
Single Family Attached	440	5%
Multi-Family	2,090	25%
Total	**8,400**	**100%**

Table 5: Base Case Housing Capacity by Plan Designation

Plan Designation*	Single Family Detached Units	Single Family Attached Units	Multi-Family Units	Total New Housing Units
RL	230	-	-	230
RS	4,590	290	250	5,130
RM*	1,020	100	860	1,980
RH*	10	50	360	420
MDOZ*	-	-	480	480
CL*	-	-	50	50
CG	-	-	50	50
MR	20	-	40	60
Total	**5,870**	**440**	**2,090**	**8,400**

* Development capacity in the MDOZ is counted there rather than by plan designation.

Figure 3: Heatmap of Housing Growth in the Base Case



Employment Capacity

The following tables and figures describe the employment capacity estimated in the base case scenario. Note that the number of new jobs reported is net of any existing jobs that may be lost through redevelopment in non-residential districts, and employment estimates are rounded to the nearest 10 jobs. In total, the base case shows that the current UGB can accommodate close to 12,000 jobs under the current plan designations and policies and historic trends in development density. The mix of jobs that can be accommodated inside the UGB under the

base case is a fairly even split between retail/hospitality, office, industrial, and public. Most of the total employment capacity (about 36%) is in the IL plan designation, with most of that at Juniper Ridge. As shown on Figure 4, overall employment growth is concentrated in Juniper Ridge and southwest Bend.

Table 6: Base Case Employment Capacity by Category

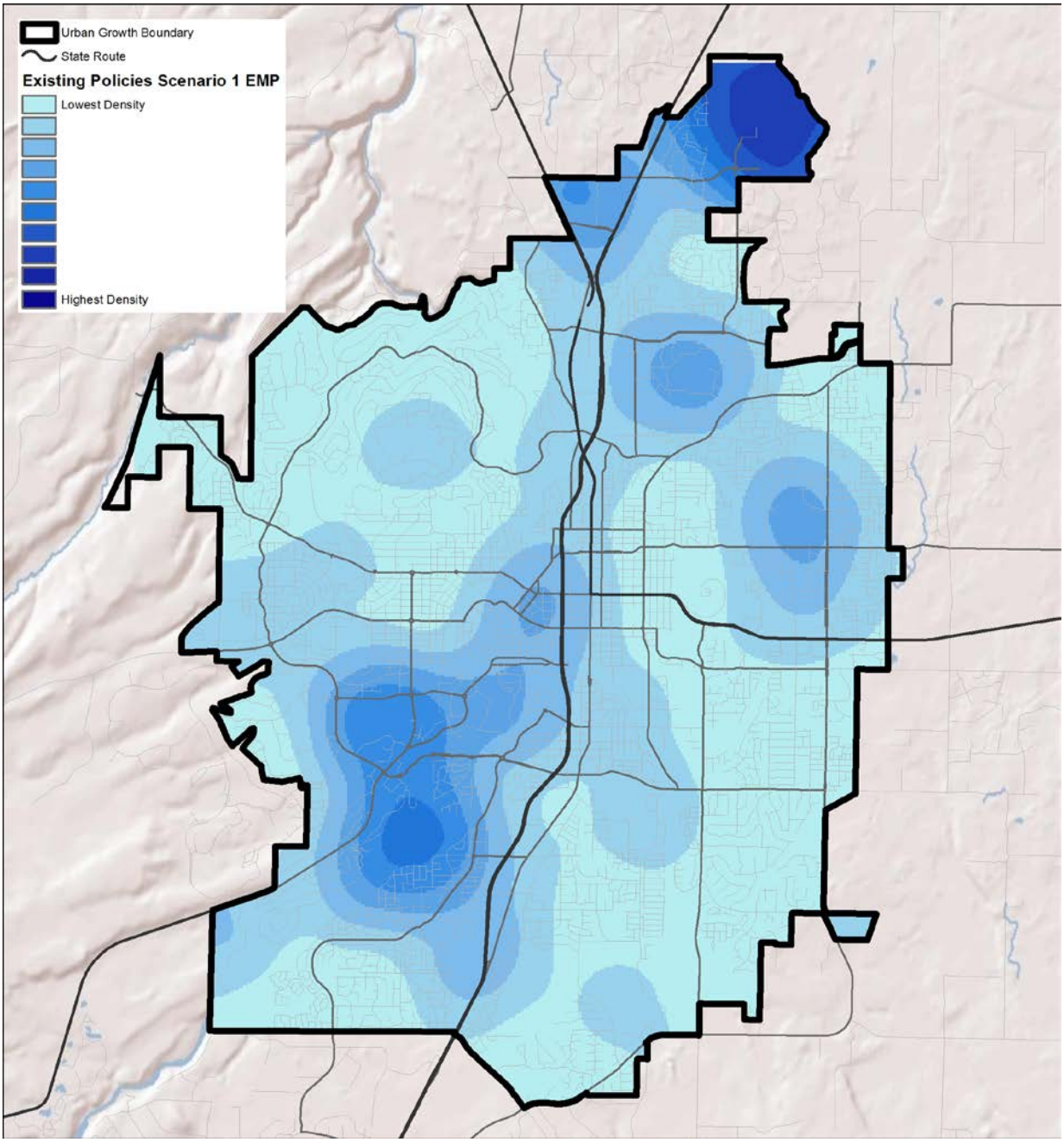
Employment Category	Net New Jobs	Percent of new jobs
Retail & Hospitality	2,220	19%
Office	3,610	31%
Industrial	3,310	28%
Public	2,540	22%
Total	**11,680**	**100%**

Table 7: Base Case Employment Capacity by Plan Designation and Category

Plan Designation*	Net New Retail & Hospitality Jobs	Net New Office Jobs	Net New Industrial Jobs	Net New Public Jobs	Total Net New Jobs
RS	-	20	-	-	20
RM*	10	30	-	-	40
RH*	-	10	-	-	10
MDOZ*	10	690	70	-	770
CC	50	40	-	-	90
CL*	470	570	90	-	1,130
CG	850	210	40	-	1,100
CB	100	270	-	10	380
IL	430	1,110	2,650	-	4,190
IG	10	50	90	-	150
MR	80	260	50	-	390
ME	160	230	320	-	710
PF	50	120	-	2,530	2,700
Total	**2,220**	**3,610**	**3,310**	**2,540**	**11,680**

* Development capacity in the MDOZ is counted there rather than by plan designation.

Figure 4: Heatmap of Employment Growth in the Base Case



Land for Parks, Schools, and Other Uses

The Base Case includes 816 acres for right-of-way (21% of vacant acres developed), 152 acres for parks, 93 acres for new schools, and 454 acres for other land (12% of acres developed) inside the existing UGB.

Comparison to Need

The housing and employment need projections to 2028 are documented and explained in the HNA and EOA, respectively. For more information about what they include and how they were generated, please see those documents. This section compares those needs, in summary form, against the estimated capacity of the current UGB in the Base Case.

As shown in Table 8, the Base Case is estimated to accommodate roughly half of both the total housing and total employment needs forecasts for 2028. However, comparing at the housing type and employment category level, it is clear that the capacity is not evenly distributed across all needed types and categories. For housing, much of the total single family housing need can be met inside the UGB in the Base case, but only about a quarter of the single family attached and a third of the multifamily housing needs can be accommodated with current policies and trends (see Table 8). For employment, all of the public employment needs (and more) can be accommodated on existing PF land inside the UGB, but only about a half of the office and industrial needs and a third of the retail and hospitality needs can be met inside the UGB with current policies and trends (see Table 9).

Table 8: Base Case Housing Capacity Compared to Housing Needs by Housing Type

Housing Type	Net New Housing Units	Total Housing Need[36]	Residual Housing Need	Percent of Housing Need Met
Single Family Detached	5,870	9,220	3,350	64%
Single Family Attached	440	1,680	1,240	26%
Multi-Family	2,090	6,330	4,240	33%
Total	**8,400**	**17,230**	**8,830**	**49%**

[36] The total housing need listed includes housing units needed to meet projected growth in households, second homes, and equivalent dwelling units to meet group housing needs. See HNA for details.

Table 9: Base Case Employment Capacity Compared to Employment Needs by Employment Category

Employment Category	Net New Jobs	Total Employment Need[37]	Residual Employment Need	Percent of Employment Need Met
Retail & Hospitality	2,220	6,520	4,300	34%
Office	3,610	7,160	3,550	50%
Industrial	3,310	6,540	3,230	51%
Public	2,540	1,720	None[38]	100%
Total	**11,680**	**21,940**	**11,080**	**53%**

The City's park and school needs are also not fully met within the existing UGB.

[Note: a comparison of the Base Case park and school land to the 2014 to 2028 remaining park and school need will be provided here.]

[37] The employment need categories have been generalized for simplicity in comparing against capacity as measured in Envision Tomorrow. See EOA for details.

[38] Public jobs do not include school-based employment in actual school facilities which tend to be located in residential areas. Schools are addressed as a separate land need. The surplus of capacity for public jobs inside the UGB does not subtract from the need for employment capacity of other types, since land designated Public Facilities (where most of the public employment capacity comes from) generally will not provide opportunities for private-sector retail, office, or industrial development.

[Note: the draft outline of the remaining chapters of the Urbanization Report is provided below for reference. TAC feedback on this outline is not requested at this time.]

CHAPTER 4. EFFICIENCY MEASURES

Overview & Evaluation Process

Proposed Package of Efficiency Measures & Anticipated Impact

Changes to Broadly-Applicable Development Code

Changes to Plan Designations for Opportunity Sites

Capacity Estimate with Efficiency Measures

Housing Capacity

Employment Capacity

Land for Parks, Schools, and Other Uses

Comparison to Need

CHAPTER 5. UGB EXPANSION

Overview & Evaluation Process

Initial Suitability Evaluation

Approach

Results

Alternatives Analysis

Approach

Summary of Alternatives Considered

Scenarios

Supplemental Analysis Areas

Summary of Evaluation Results

Scenarios

Supplemental Analysis Areas

Proposed UGB Expansion

Summary of Proposal

Evaluation Results

CHAPTER 6. CONCLUSION

APPENDICES & RELATED DOCUMENTS

[Note: The appendices intended to be included with the Urbanization Report are listed for reference below. However, the appendices themselves are not included with the partial draft report at this time.]

Appendices

Appendix A State law cited in this report

Appendix B Index of relevant Remand directives

Appendix C Observed mix and density of housing by residential plan designation *(from 2011 BLI memo)*

Appendix D Observed mix and density of employment by employment plan designation *(from 2008 EOA)*

Appendix E Development type details

Appendix F Proposed efficiency measures code changes details *(development code amendment descriptions & details of what changed in Envision Tomorrow)*

Appendix G Stage 2 maps (all)

Appendix H Final scenario evaluation memo, with attached technical memos

Appendix I Detailed evaluation documentation for proposed UGB / hybrid scenario

Related Documents

Housing Needs Analysis

Economic Opportunities Analysis

Buildable Lands Inventory

Findings Report

Comprehensive Plan

Bend Development Code

Meeting Agenda

Urban Growth Boundary Steering Committee
Thursday, June 25, 2015 2:00-4:45 PM *(note start time)*
Barnes/Sawyer Room
Deschutes Services Building – 1300 NW Wall Street, Bend

1. Welcome — 2 PM

a. Welcome by Victor Chudowsky
b. Agenda overview (Joe Dills) and Opening Remarks (Brian Rankin)
c. Approval of March 19, 2015 Minutes

2. Refinement of Potential Expansion Areas and Proposed UGB Expansion Scenarios — 2:15 PM

The Boundary TAC leadership and will join the USC to support the discussion.

a. Staff briefing (see packet pages 8-35) — Angelo Planning Group
   - o Background
   - o Refinement of Potential Expansion Areas & Documentation of Lands Being Screened
   - o Approach to Further Analysis
   - o Proposed UGB Expansion Scenarios
b. TAC leadership comments
c. Public comment – *Persons wishing to testify should fill out a comment card, located at the welcome table. Testimony will be limited to 2 minutes per person, depending on the number of people wishing to speak.* — Public comment will managed by the Chair.
d. USC discussion and action

Action requested: Approve TAC recommendations

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.

3. Wildfire Assessment Methods — 4:00 PM

a. Staff briefing – Wildfire Risks, Assessment, & Mitigation (see packet pages 84-92) — Craig Letz and Brian Rankin

b. TAC leadership comments

c. USC discussion and action

Action requested: Approve TAC recommendations

4. Adjourn — 4:45 PM

City of Bend
Urban Growth Boundary Steering Committee
Meeting Notes
Date: March 19, 2015

The Urban Growth Boundary Steering Committee (USC) held its meeting at 3:00 pm on Thursday, March 19, 2015 in the Council Chambers of Bend City Hall.

Members present: Jim Clinton, Victory Chudowsky, Doug Knight, Sally Russell, Casey Roats, Nathan Boddie, Barb Campbell, Bill Wagner, Rex Wolf, and Tony DeBone.

1. Welcome

USC Chair Victor Chudowsky called the meeting to order at 3:05 pm. He welcomed all present and provided a brief update of his and Planning Manager Brian Rankin's trip to Salem last week. The two gave a presentation on March 12, 2015 to the Oregon Land Conservation and Development Commission (LCDC) on the progress made on the UGB Remand Project. He also read a portion of a letter from staff of the Department of Land Conservation and Development (DLCD) praising the work the City has completed so far.

Joe Dills of the Angelo Planning Group then began facilitating the meeting with a request to approve the minutes of the USC's September 4, 2014 meeting. Sally Russell moved approved of the 9/4/2014 minutes with Dough Knight providing a second. The motion passed unanimously, with Bill Wagner abstaining.

2. Phase 1 Recommendations

Overview
Brian Rankin gave an overview of the work of the Residential and Employment TACs during Phase 1. His overview touched on the key work on housing and employment lands completed in Phase 1. For housing, he discussed the buildable lands inventory, using the Envision Tomorrow model for estimating capacity, needed housing and mix of housing, and redevelopment and efficiency measures. He also gave a high level overview of the work of the Residential and Employment TACs in considering scenarios for further development and infill in the current UGB. Brian also highlighted the work of the Boundary TAC in framing the methodology for the formation and evaluation of UGB scenarios in Phase 2. He concluded by presenting the "ask" to the USC as the acceptance of the TAC recommendations and direction to move forward.

Presentation of Residential and Employment TAC Recommendations
He turned the presentation over to Andrew Parish of APG who then gave a power point presentation on the work that went into developing the Phase 1 Growth Scenarios. His presentation touched on the UGB Remand order requirements for housing land and how this work was incorporated into scenario modeling using the Envision Tomorrow (ET) tool, the opportunity areas the TACs considered in Phase 1, efficiency measures for additional housing in the Bend UGB, the work on employment lands and jobs mix, and finally the estimated residual or numbers of housing units and jobs that would be accommodated through an expansion of the UGB.

TAC Leadership and Minority Report

Joe then asked the TAC leadership of the Residential and the Employment TACs to present their overview comments. Tom Kemper and Sid Snyder represented the Residential TAC; Jade Mayer and Wes Price represented the Employment TAC. At this time, Sid Snyder presented a minority report (handed out before the meeting) regarding the application of housing mix going forward from 2014 to 2028. The Residential TAC considered this topic at Meeting #6. The TAC voted to apply the housing mix (55% detached single family, 10% attached single family, and 35% attached multi-family) going forward. Sid was part of a group of four TAC members that voted for applying housing mix for the entire planning period of 2008 to 2028, with the effect of having a higher proportion of multi-family attached housing at the end of the period.

Tom Kemper then provided a report on the majority's decision. He first lauded the project team and city staff. The Residential TAC reached consensus on most of the issues before them with the exception of three, one of which was housing mix. He summarized that the TAC chose Option B (recommendation) because there are about 12 years left in the planning period, and that was not enough time to "move the dial" with a number of efficiency measures.

The USC then had a discussion with the TAC leadership on this topic. The discussion touched on the tensions between what the market will provide versus what's needed with respect to housing, the recommended direction in the Minority Report to be more aggressive with respect to taking action to meet current and future housing needs, DLCD's position on this work, and whether one application of housing mix was more attainable than the other (Option A versus Option B).

At the conclusion of the Residential TAC discussion on the Minority Report, Joe invited the USC to ask questions of Wes Price and Jade Mayer. This discussion of the Employment recommendations touched on the employment forecast and the gain in jobs between 2008 and 2013, the difference in the number of jobs in the two scenarios (4b and 5c), with the difference between the two being different assumptions for jobs and housing units at Juniper Ridge.

Motion on Phase 1 Growth Scenarios

Joe then asked the USC to move toward taking a vote on the recommendations from the two TACs on the Phase 1 Growth Scenarios. These were outlined on page 37 of 125 of the meeting packet and reproduced below:

1. The Phase 1 Growth Scenarios, comprised of:
   a. Phase 1 Growth Scenario Map (Figure 1)
   b. Efficiency measures (listed in Appendix D)
   c. Capacity analysis (described above)
   d. Urban Form Map (Figure 3)

2. The Phase 1 Growth Scenarios are subject to further refinement in Phase 2, including but not limited to the following:
   - Further analysis of efficiency measures and a revised set of recommended measures.
   - Potential spatial refinements, including a recommended scenario for Juniper Ridge and other possible changes that would be compatible with different boundary scenarios.
   - Conversion of needed housing units and jobs to acres of land and identification of specific recommended Plan designations both inside and outside the UGB.

- Estimate of land needed for other purposes outside the UGB such as schools, parks, "other lands," roads, and other infrastructure.
- Specific analysis of vehicle miles traveled (VMT) per capita, including potential for transit
- Accessory dwelling units (ADUs).
- Further analysis of the likely yield of efficiency measures during the planning period.
- More efficiency measures.
- Explore additional financial incentives (e.g. parks SDCs).
- Comparison of infrastructure costs between scenarios and as practical between areas.

After presenting the recommendation to the USC, Joe asked for a motion to approve.

Victor moved approval with Nathan providing a second to the motion. All members voted in favor of the recommendation (unanimous).

Boundary TAC discussion and recommendations

Mary Dorman of APG then took over and gave a short power point presentation on the work the Boundary and Growth Scenarios TAC (Boundary TAC) completed in Phase 1. This presentation touched on the creation of the UGB study area – two miles from the current boundary and including exception lands; the preparation of over 25 maps for evaluating properties in the study area, and in particular identifying those lands that were unbuildable.

Mary's presentation also covered the next steps for the Boundary TAC work under Phase 2 of the project. Stage 2 base mapping is already underway, and she summarized the work going into developing the base maps for the initial evaluation of properties in the study area. This work in Stage 2 will include further work on Statewide Planning Goal 5 (Open Spaces, Natural Areas, and Wildlife Habitat). With respect to Phase 2 of the Remand Project, the Boundary TAC will be next looking at composite maps, each map a composite of the maps created to evaluate property according to the four factors under Statewide Planning Goal 14 (Urbanization). Phase 2 will include Scenario Evaluation (Stage 4), plus additional screening based on Goal 5 resources. Further work in Stage 4 will include additional modeling using the Envision Tomorrow scenario planning tool, sewer and water optimization models, and transportation modeling.

Mary concluded her presentation by summarizing the key conclusions from the Phase 1 work: the team expects to meet land needs on exception lands; the team has developed a good base of information to help form scenarios; this approach will allow a more integrated look at lands inside and outside of the UGB, and; the UGB methodology is very responsive to the Remand Order. After her presentation, Sharon Smith and Mike Riley of the Boundary TAC provided their comments to the USC. The Boundary TAC has gathered a significant amount of information, but has not had to make any hard decisions yet. That will come in Phase 2. Mike also added that the TAC has a lot to learn about wildfire risk and how to incorporate this into the cost analysis of providing water and transportation infrastructure to areas under consideration. They were then joined by Paul Dewy and Robin Vora of the Boundary TAC. They provided a minority view and report on the Boundary TAC's decisions regarding the use of wildfire in the base and scenario mapping. They disagreed with delaying further work on incorporating wildfire risk, the use of the Community Wildfire Protection Plan and outlined the risks of wildfire in a forest versus range land. They further argued that expansion should not proceed west because of fire risk. Once Paul and Robin concluded with their report the USC began their discussion of this topic. Craig Letz, a wildfire consultant working with APG, was asked to respond to questions regarding the work completed to date during this discussion.

The discussion between the TAC leadership, Paul and Robin, and the USC focused on wildfire and possible ways to address this sooner in the UGB work.

Motions: Joe Dills suggested a middle ground for the USC's consideration, based on this discussion. The work on wildfire, like the mapping work on wildlife, needed additional work to be of use in scenario evaluation. Bill moved to direct the TAC to evaluate the map series for the Boundary work once with the fire map and once without the fire map. Both Nathan and Rex provided a second to this motion. The discussion on this motion then included brining the wildlife maps into the process, and using an "on and off" approach where the analysis of the map series would occur with the wildlife data layer on and a second analysis with the layer off. After this discussion, and public comments (see below) Joe framed a new motion of approving the recommendations on page 57 of the meeting packet with the additional work of analyzing the maps so that one analysis is performed with the wildlife and wildfire maps "on" and a second with the two maps "off." Brian pointed out that weighting of the different factors would occur in Phase 2. The recommendations from page 56-57 are reproduced below:

Unbuildable Lands

- Approve the maps in Appendix E that identify unbuildable lands in the study area for Phase 2 formation and analysis of UGB scenarios.
- Screen federally owned lands (USFS & BLM) and Oregon State Parks within the 2-mile study area from consideration for UGB scenarios.

Phase 2 Milestones Diagram & Table 15: Goal 14 Factors

- Approve Phase 2 Milestones Diagram in Appendix C subject to refinement in Phase 2 scoping and contract approvals
- Approve Table 15: Goal 14 Factors on for use in Stage 2 Base Mapping and Stage 4 Scenario Evaluation

Stage 2 Base Maps

- Approve Factor 1 maps. *Note: CC&R research is on-going.*
- Approve Factor 2 maps
- Approve Factor 3 maps
- Approve Factor 4 maps *Note: further information will be gathered regarding agricultural activities on EFU lands that do not meet the definition of "high value" farmland.*

Screening Based on Goal 5 Resources

- Approve "screening" of exception lands within the acknowledged Wildlife Overlay Zone from further consideration as candidate UGB areas (see map in Appendix E)
- Approve "screening" portion of Shevlin Sand & Gravel site under DOGAMI Permit 090018 From further consideration as a candidate UGB area (see map in Appendix E)

Bill moved approval of this recommendation with Barb providing a second to the motion. All USC members voted in favor of the motion.

3. Public Comment

Before taking final action on the Boundary TAC recommendations, the USC paused the discussion to take public comment.

a. Mike Mayea. Provided both oral and written testimony to the USC. During his oral testimony, he referred to an oversized exhibit of the 2009 UGB expansion proposal. Mike thanked everyone for their work on the project, and stated that this work should have been completed in 2006 and 2007. He further testified that people are being scared away because this work is not done, and that the letter from DLCD (See 3/17/2015 letter) was a "don't call us we'll call you" letter.

b. Matt Harrell signed up to testify but was not present when asked to provide his testimony.

Chair Chudowsky adjourned the meeting at 5:12 pm.

Memorandum

June 22, 2015

To: Bend Urban Growth Boundary Steering Committee (USC)

From: Brian Rankin and Joe Dills, Project Managers

Re: June 25th USC Meeting – Overview and Executive Summary

OVERVIEW

The June 25th Urban Growth Boundary Steering Committee (USC) meeting represents another milestone for the project: the approval of alternative Urban Growth Boundary (UGB) scenarios for further evaluation.

A "scenario" is a map showing one option for where and how much Bend might grow between now and the year 2028. As explained further below, the UGB and Boundary Scenarios Technical Advisory Committee (Boundary TAC) will be recommending a slate of alternative UGB expansion scenarios for consideration by the USC. Once approved, the scenarios will then be taken through a comprehensive evaluation to identify the advantages, disadvantages, and infrastructure costs of each option. The evaluation will follow the four factors of statewide planning Goal 14: efficient accommodation of land needs; orderly and economic provision of public facilities and services; comparative environmental, energy, economic and social consequences; and compatibility with nearby farm and forest activities and lands.

TAC RECOMMENDATIONS

Process

The project team and Technical Advisory Committees have been working hard to honor USC's priority for an expeditious process and schedule. On June 9th, the Boundary TAC had a first discussion of draft expansion scenarios. In that meeting, the Boundary TAC determined it needed a second discussion to continue its work and provide staff time to address the Boundary TAC's feedback. In the interest of keeping the schedule, it was also decided to retain the USC's scheduled June 25th meeting – with the Boundary TAC meeting just prior on June 24th. The enclosed packet of materials for USC review is the same as has been distributed to the Boundary TAC for their June 24th meeting. A report, and presumably recommendations, will be presented to the USC based on the outcomes of the Boundary TAC's meeting on June 24th.

Specific scenario maps are now a part of the process. As is always true with mapped recommendations, property owners have begun to participate, some commenting generally and others advocating for specific lands or uses. The project team and Boundary TAC have

reviewed each request and provided for public comment periods during meetings. This is a healthy part of the process, but it is also wrapped in emotion and some differing points of view, as would be expected. This dynamic will continue throughout the remainder of the project.

Recommendations – Executive Summary

The Boundary TAC's recommendations will address the following issues:

- Documentation for lands being screened from further evaluation
- Maintaining flexibility – defining scenario expansion areas and supplemental analysis areas
- Three proposed scenarios for UGB expansion
- A proposed approach to wildfire evaluation

An executive summary of each of the above-listed issues is provided below; further detail is provided in the packet materials. All "recommendations" noted below are preliminary and subject to Boundary TAC action on June 24th. The USC's timely guidance on the 25th is a critical component to staying on schedule and within approved budgets.

Documentation for lands being screened from further evaluation

State land use law (OAR 660-024-0060, the Goal 14 administrative rule) sets the framework for the boundary location alternatives analysis. In Phase 1 of the project, the Boundary TAC defined an approach to evaluate lands surrounding Bend for their relative strengths and weaknesses, consistent with state laws. Why is this important? Ideally, the UGB expansion should take place on the "best" land available after considering and balancing multiple factors. In Bend's case, the screening of lands for further evaluation works within the envelope of "exception" lands that surround the City.

The recommendation presented for Boundary TAC approval is to approve the map titled Phase 2 Narrowing of Exception Lands (see Figure 2 on page __ of this packet). The map and accompanying text display, describe and document the rationale for narrowing the initial full exception lands envelope of approximately 18,000 acres to a smaller area of approximately 5,500 acres for further evaluation. As a reminder, the City needs approximately 2,000 acres of expansion area lands to fulfil its projected land need to the year 2028.

Maintaining flexibility – defining scenario expansion areas and supplemental analysis areas

At its meeting on June 9th, the Boundary TAC reviewed draft scenarios that were prepared using the input from the April 30th scenarios workshop, which built upon nearly a year of analysis by the Boundary TAC. In discussing the scenarios, the Boundary TAC identified an over-arching idea: to create flexibility regarding the pool of lands to be considered when the final UGB scenario proposal is created. If one or more parts of the recommended scenarios turn out to have disadvantages or trade-offs that are best addressed by considering other land, the Boundary TAC would like to have flexibility in forming its recommendation to the USC.

To create the flexibility described above, the Boundary TAC will be discussing (on June 24th) a two tiered approach: (1) Stay the course with the 3 draft scenarios from the June 9th meeting, refining them to incorporate ideas from the Boundary TAC; and (2) Create a supplemental analysis map that is a composite of the 3 scenarios and includes additional adjacent lands. To be clear, at this time, lands included on the supplemental analysis map, but not in a scenario, are not proposed as UGB expansion areas. They are supplemental analysis areas. As such, they will be studied but will be considered as expansion areas only if the Boundary TAC or USC chooses to look beyond the pool of lands included in scenarios. It is worth noting that this approach exceeds the requirements of the Division 24 rule (guiding UGB expansion analyses), yet provides more information into the process of boundary formation. The combined land area in the three draft scenarios is approximately 3,000 acres. The supplemental analysis area contains a total of approximately 5,500 acres (the roughly 3,000 acres that are part of the draft scenarios plus an additional roughly 2,500 acres that are not included in the draft scenarios).

Another potential implication of using the supplemental analysis map and resulting analysis is that there is a possibility that the Boundary TAC, USC, or community may desire more time for refinements and iterations of different UGB expansion boundaries, which could then require additional time and resources to produce. Therefore, the advantage of using the supplemental analysis map and analysis is to have more information brought into the boundary formation process, but the disadvantage of the approach is that it may require more time and resources than originally anticipated.

Three Draft Scenarios

Following the April 30th scenarios workshop, the project team prepared three draft scenarios to implement the four themes that emerged from the workshop:

(1) General consensus on the lands to be considered in this UGB expansion;
(2) Use of the larger, vacant properties adjacent to the UGB, except on the Northeast Edge subarea;
(3) A preference for complete neighborhoods and complete communities; and
(4) Recognition that this process is a stepping stone to future development.

The Boundary TAC will discuss refinements to the scenarios at its June 24th meeting. Each scenario has a similar land budget of approximately 2,000 acres - comprised of lands for commercial, industrial, mixed use, residential, civic (parks and schools), streets, trails, and other land uses. The scenarios differ, to some extent, in where and how these land uses are arranged in the various expansion areas. As noted above, input from property owners has been considered during the Boundary TAC's discussions.

Wildfire Evaluation Methods

As part of its on-going consideration of wildfire issues, the Boundary TAC has defined its approach for how wildfire will be evaluated after the scenarios are approved by the USC. The team and Boundary TAC have consulted with wildfire experts as part of this process. Please see the attached memorandum for the full background on this topic. In sum, the Boundary TAC is recommending (1) use of the Greater Bend Area Community Wildfire Protection Plan

(CWPP)[1], as illustrated by the Fire Risk Index Map and the Fire History map, in conjunction with onsite assessments; (2) utilization of on-site wildfire risk assessments for land within the UGB Scenarios and adjacent buffer areas; and (3) that a Task Force be formed to comprehensively review fire mitigation measures appropriate to adoption in Bend's policies and codes.

CONCLUSION

It is important for the USC to understand the Boundary TAC's recommendations, as they will direct future work and the resulting plan for Bend. This memo's overview is not intended to be the only interpretation of the work, and it is neither intended to replace each USC member's individual judgment and consideration, nor a discussion involving the many participants' and community's opinions. It is, however, the team's best effort to provide the USC with a concise and policy-level description of the work before the USC considers the many technical details in the attached packet.

[1] http://www.projectwildfire.org/index.php/cwpp

Memorandum

June 22, 2015

To:	Urban Growth Boundary and Growth Scenarios Technical Advisory Committee
Cc:	Urban Growth Boundary Steering Committee
From:	Angelo Planning Group Team
Re:	Revised Draft Urban Growth Boundary Expansion Scenarios and Recommendations

INTRODUCTION

Purpose

The purpose of this memorandum is to:

- Present updated Urban Growth Boundary (UGB) expansion scenarios
- Respond to requests from the Urban Growth Boundary and Growth Scenarios Technical Advisory Committee (Boundary TAC) for additional information, justification of lands, and flexibility for crafting the proposed UGB after evaluations are completed this summer
- Outline an approach to the analysis of potential expansion areas

The goal for this meeting is for the Boundary TAC to forward recommendations to UGB Steering Committee (USC), who will meet on June 25th.

Direction from the Boundary TAC

At the June 9th meeting (Boundary TAC 9), the Boundary TAC discussed the draft scenarios, raised important questions, and provided initial feedback on refinements to the scenarios. While the Boundary TAC did not vote, it did provide direction to the team, as captured in the meeting minutes. The following summarizes the direction provided to the team.

1. **Documentation for lands being screened from the evaluation** - Provide clearer documentation, consistent with OAR 660-024-060, for why certain lands are not being forwarded for further analysis, in particular areas rated as “dark green” on the composite Stage 2 map.[1]

[1] Figure 1 identifies in dark green the highest-ranked quartile of exception land based on an un-weighted composite of the indicators for all Goal 14 factors that were evaluated in Phase 1. The term “dark green” is used throughout this memo as a short-hand for these highest quartile of exception lands in the study area.

2. **Flexibility** - Define an approach that will keep flexibility to consider a larger pool of land if the Boundary TAC or USC deems that necessary (e.g. some of the land included in scenarios turns out not to perform well in the scenario analysis).
3. **Scenario refinements** - Refine the three expansion scenarios presented at the meeting, considering Boundary TAC comments. Note: the Boundary TAC commented on several requests from the public, so consideration of public testimony is included in the updates presented in this memo.

This memo is structured to respond to each of the Boundary TAC's requests. It should be noted that all "documentation" and consistency with legal requirements is preliminary and subject to change. It is not intended, or required, that legal findings be made at this point. Much more detailed findings will be created at a later point in the process, and will address applicable legal standards. The focus at this stage of the process is to clearly state the basis and reasons for the recommendations, which sets the foundation for findings to be prepared at a later date.

DOCUMENTATION FOR LANDS BEING SCREENED FROM THE EVALUATION

Legal Foundation and Phase 1 Work

The Goal 14 administrative rule (660-024-0060) sets the framework for the boundary location alternatives analysis (see Appendix A for full text of this rule). In Phase 1 of the project, the Boundary TAC agreed on how to interpret and operationalize the requirements of this rule to ultimately conduct a comparison between lands to include in the UGB expansion. In short, the Boundary TAC defined an approach to evaluate lands surrounding Bend for their relative strengths and weaknesses according to State laws pertaining to UGB expansions. Why is this important? Ideally, the UGB expansion should take place on the "best" land available after considering and balancing multiple factors.

The alternatives analysis is only considering land in the same priority category in ORS 197.298 (exception lands). The Stage 2 maps approved by the Boundary TAC at the end of Phase 1 work do a good job of capturing the relative strengths and weaknesses of priority exception lands within a 2-mile radius of the existing UGB based on key indicators of the four factors of Goal 14.

- **Factor 1**: Efficient accommodation of identified land needs – consideration of parcel size, proximity to the UGB, improvement to land value, steep slopes and subdivisions with known CC&Rs.
- **Factor 2**: Orderly & economic public facilities – for transportation, consideration of physical barriers to connectivity, reliance on congested corridors and connectivity to

complete roadway grid; for sewer, analysis of potential UGB expansion wastewater basins.[2]

- **Factor 3**: Environmental, social, economic and energy (ESEE) consequences – consideration of significant Goal 5 resources and overall resource priorities from Greenprint.
- **Factor 4**: Compatibility with activities on nearby resource lands – consideration of proximity to zoned forest land and high-value agricultural land.

The Boundary TAC reviewed and approved roughly 25 Stage 2 maps related to different indicators of the Goal 14 factors. The project team then prepared one composite map for each of the four Goal 14 factors and a composite map combining indicators for all four factors. The approach was to prepare "un-weighted" composite maps, so the information was displayed without value judgments about what factors are more important than others. This approach is consistent with applicable state rules as well as case law on the subject.

With input from the Boundary TAC, the universe of exception lands was narrowed from about 18,000 to about 6,400 acres of top-quartile "good" lands at the end of Phase 2. The narrowing process included the following steps:

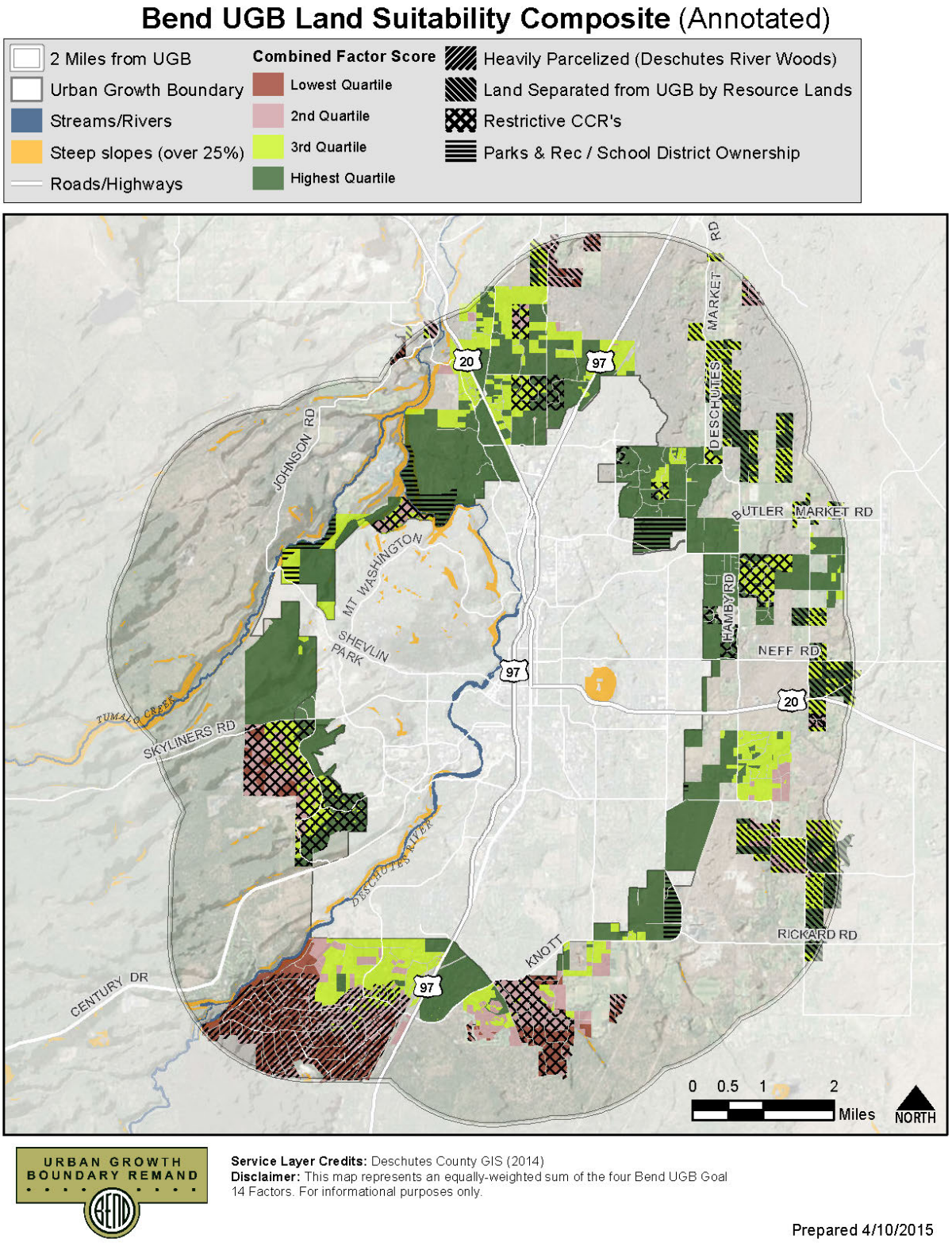
- Excluding exception lands within the Deschutes County Wildlife Overlay (deer winter range)
- Excluding exception lands that are separated from the existing UGB by resource lands
- Excluding active mining site that is currently zoned for Surface Mining (approximately 200 acres of Coats property)
- Excluding lands with recorded CC&Rs that preclude land divisions and additional dwellings
- Excluding heavily parcelized areas with smaller parcels (less than 2 acres) and numerous dwellings that severely limit capacity for new development
- Excluding rural residential subdivisions (generally less than 5 acre lots) with higher improvement to land value ratios that severely limit capacity for new development within the 2028 planning horizon

The results of the above-described narrowing process are shown on Figure 1: Composite Suitability Score and Phase 1 Screening.

[2] The Stage 2 mapping included a fairly coarse level of public facilities (particularly transportation and sewer) based on GIS and available information in adopted facility plans. Based on input from the Boundary TAC at the last meeting, the project team will be analyzing a larger pool of dark green lands to retain some flexibility and better information on the relative advantages, disadvantages and costs of providing infrastructure to alternative subareas (See OAR 660-024-0060(8)).

The project team is confident that the narrowing of priority exception lands to the approximately 6,000 acres of highest quartile “good” lands that were carried forward to the UGB scenarios workshop is consistent with the legal requirements of OAR 660-024-0060. In summary, the process of: (1) defining a study area, (2) applying limited suitability screening criteria, (3) weighing and balancing all Goal 14 factors, and (4) using the results of the composite annotated maps to form specific UGB expansion scenarios to meet identified needs is consistent with the Division 24 rule, as well as the McMinnville case (see Appendix B for the August 19, 2014 memorandum from the City Attorney regarding this case that was provided previously to the Boundary TAC).

Figure 1: Composite Suitability Score and Phase 1 Screening



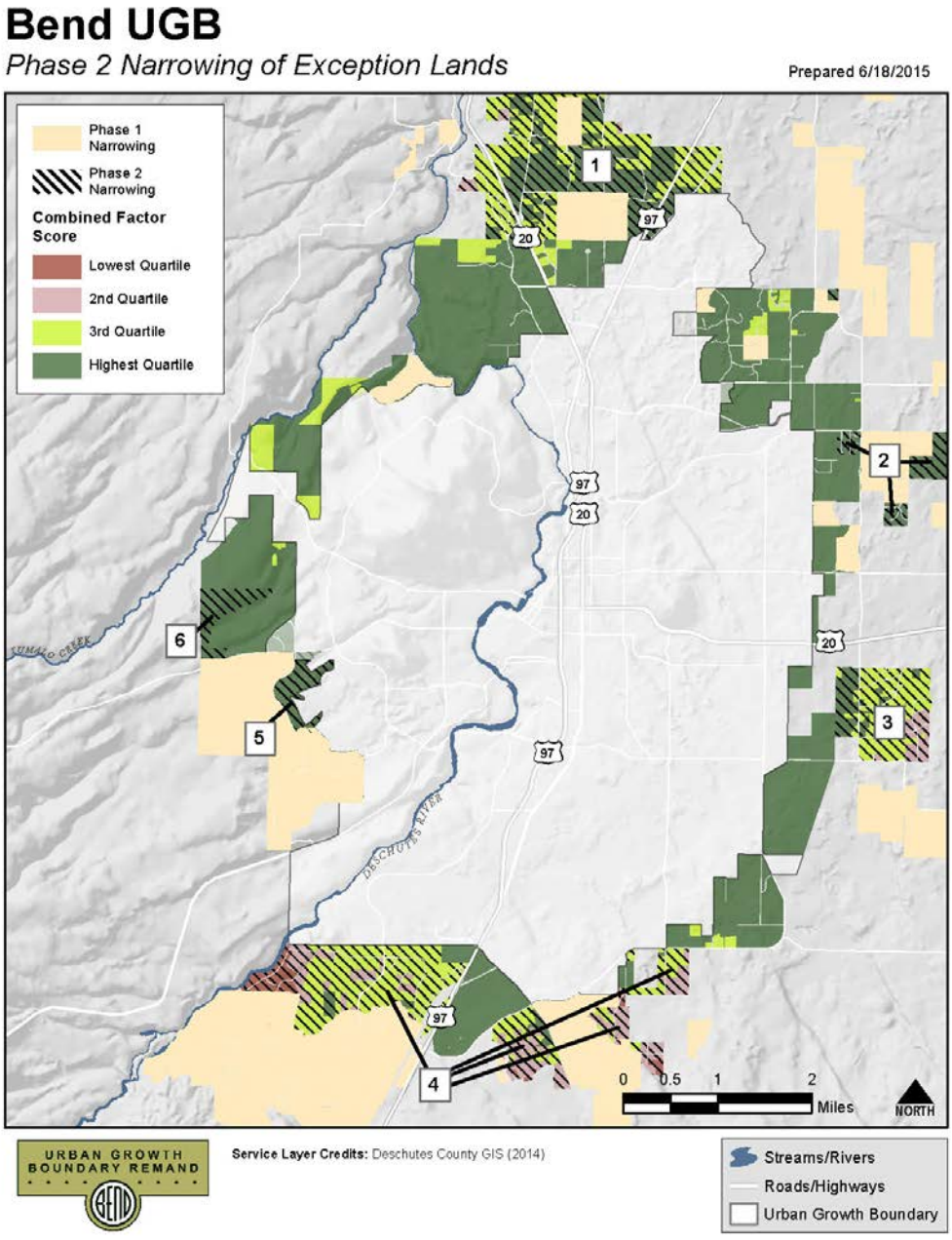
Service Layer Credits: Deschutes County GIS (2014)
Disclaimer: This map represents an equally-weighted sum of the four Bend UGB Goal 14 Factors. For informational purposes only.

Prepared 4/10/2015

Further Refinements

As directed by the Boundary TAC, the project team is providing additional explanation of why other dark green lands that were not screened out as “unsuitable” on Figure 1 should not be advanced for further analysis. The reasons the lands identified on Figure 2: Phase 2 Narrowing of Exception Lands are not advanced for further analysis include: (1) a subarea overall does not score well based on the balancing of the Goal 14 factors, (2) they are separated from the UGB by resource lands or lands with restrictive CC&Rs, and/or (3) they are unlikely to be able to accommodate identified land needs. Please note also that these findings are at a high level, and will be refined further when legal findings are prepared.

Figure 2: Phase 2 Narrowing of Exception Lands



Subarea 1

This large rural residential exception area (just under 1,600 acres) is located north of Cooley Road generally between Hwy 97 and Hwy 20. The Combined Factor Score for this subarea is a mix of light green (3rd quartile) and dark green (highest quartile). The subarea has a mix of parcel sizes, with parcels in the 5-10 acre size the most predominant. A relatively large rural residential subdivision (about 220 acres) with restrictive CC&R's is located at the southerly boundary of this subarea equidistant to Hwy 97 and Hwy 20 and represents a barrier to efficient expansion to the north. Some of the larger undeveloped parcels abutting Hwy 97 may be suitable for longer-term urbanization, but they are more distant and/or isolated from the existing UGB. Additionally, the Stage 2 maps for Factor 2 (transportation) indicate that this subarea has moderate barriers to connectivity and a higher percentage of vehicle trips from this subarea would be reliant on a congested corridor.

Subarea 2

This consists of a relatively small subdivision (approximately 30 acres) located on the south side of Nelson Road and the west side of Hamby Road and two other areas east of Hamby Road totaling about 360 acres. While the subarea shows up as largely dark green on Figure 1, the portion west of Hamby Road is subdivided into small lots (average lot size is a half-acre) with a relatively high improvement to land value ratio. The portion east of Hamby is separated from the UGB by a mix of land with restrictive CC&Rs and resource land.

Subarea 3

This subarea (approximately 550 acres) is located between Hwy 20 and Stevens Road surrounding Hamby Road. While the portion of the subarea west of Hamby Road shows up as dark green (Highest Quartile) on the Combined Factor Score, it is rated as having poor connectivity to a complete roadway grid; the portion east of Hamby Road is generally light green (3rd Quartile) to pink (2nd Quartile) on the Combined Factor Score. It is also relatively far from the UGB and would further surround zoned resource land.

Subarea 4

This subarea includes a large rural residential exception area (approximately 820 acres, mostly River Bend Estates) bounded by the UGB on the north, Deschutes River Woods on the south, Hwy 97 on the east and the Deschutes River on the west. It also includes roughly 500 acres of rural residential exception area east of Hwy 97 and south of Knott Road. The subarea is largely ranked light green (3rd Quartile) and pink (2nd Quartile) on the Combined Factor Score. There is a small pocket of dark green adjacent to Hwy 97 and the UGB (the roughly 40-acre Baney property), and a few smaller pockets of dark green (Highest Quartile) on the Combined Factor Score (undeveloped parcels that are about 20 acres each) further south and west.

Subarea 5

Subarea 5 consists of common open space lands located between the existing UGB and Cascade Highlands and Tetherow destination resort. These two developments are subject to CC&Rs that restrict development as shown on Figure 1. The remaining area that shows up as

dark green (Highest Quartile) on the Combined Factor Score is associated with common open space tracts and should not be considered buildable or suitable for urbanization.[3]

Subarea 6

This subarea is located west of the UGB and north of Skyliners Road. The project team does not recommend further consideration of Subarea 6 because it is included in a rural cluster subdivision proposal (Miller Tree Farm – 50 lots) that is pending on appeal to the Deschutes County Board of Commissioners. The portion of the Miller Tree Farm proposal west of Subarea 6 was already screened from further consideration at the end of Phase 1.

Summary

For the reasons stated above, the project team recommends that Subareas 1 through 6 not be advanced for further analysis. This further narrowing is justified based on the above-described characteristics, and is important because of the availability of other dark green lands that do not have the disadvantages described. The narrowing of Subareas 1 through 6 removes approximately 4,200 acres from further consideration, leaving a pool of roughly 5,500 acres.

A matrix is included with this memo (Appendix C) to articulate the key characteristics, advantages and disadvantages of the remaining higher-ranked (dark green) lands.

Recommendation

The project team recommends that the Boundary TAC approve, and forward to the USC, the lands to be screened from further consideration as described beginning on page 5 and shown on Figure 2: Phase 2 Narrowing of Exception Lands.

MAINTAINING FLEXIBILITY

Recommended Approach: Overview and Rationale

As stated previously, the Boundary TAC asked the project team to bring a larger pool of "dark green" land forward as part of scenarios' analysis, in order to provide some flexibility for when the proposed UGB is crafted. The Boundary TAC was especially interested in lands adjacent to land already included in scenarios and having the ability to respond to what is learned from modeling of water, sewer, and transportation infrastructure. Achieving this creates a dilemma: given the limited land need, incorporating all the "dark green" land that cannot be excluded at this stage would require a large number of scenarios (perhaps five to 10). The team experimented with this approach, and found that in order to reach the outer extents of the dark green in certain areas, nearly all the residential land need would be accommodated in a single subarea, creating some scenarios that are rather unrealistic and very different from the workshop results. In addition, because the scenarios will be analyzed as a whole and at the

[3] This is consistent with the approach taken to categorize open space tracts as unbuildable in the Buildable Lands Inventory inside the UGB.

subarea level, and because the infrastructure systems are connected and inter-related, there are a nearly infinite number possible combinations of different levels of growth in different subareas.

To provide the flexibility requested by the Boundary TAC, and minimize the challenges described above, the team is proposing the following approach:

- **Stay the course with the 3 draft scenarios from the June 9th meeting, refining them to incorporate ideas from the Boundary TAC**. As required by state law, these are "budgeted" scenarios that represent the land need to the year 2028 and consistent with McMinnville Step 3 (see Appendix B). The Boundary TAC's input into, and refinement of, these scenarios will continue on June 24th.

- **Create a supplemental analysis map that is a composite of the 3 scenarios and includes additional adjacent lands** that are the "dark green" lands on Figure 2. The analysis map would not be constrained by 2028 land needs. It would provide a larger pool of lands to use strictly for the purposes of analyzing areas outside of the three scenarios, and to allow refinements to boundary expansion scenarios based on results of the infrastructure modeling. Its purpose is to test infrastructure impacts for additional lands, and inform the Boundary TAC's subsequent creation of a hybrid scenario. For example, if modeling of the scenarios reveals significant impacts to infrastructure systems, and the supplemental analysis map modeling reveals lands that have few to no impacts, it may be possible to create a modified UGB expansion to include the lands with fewer negative infrastructure impacts.

The above-described approach is intended to: (1) honor the ideas from all three TACs and the USC at the workshop as represented on the current draft scenarios; (2) provide a larger pool of land to learn from and consider if the Boundary TAC and USC choose to; (3) resolve the dilemma described above; and (4) keep the work moving forward per the Phase 2 process endorsed by the Boundary TAC and USC.

The project team believes there could be schedule and budget implications to this approach, but that both are manageable. Murray Smith Associates (for water and sewer) and DKS Associates (for transportation) report that they can provide a high-level analysis of the impacts to the relevant infrastructure systems for the supplemental analysis map. This supplemental analysis will inform the pros/cons/cost differences of including the additional lands shown on the analysis map in a hybrid scenario, should the Boundary TAC choose to do so in October.

To be clear, at this time, lands included on the supplemental analysis map, but not in a scenario, are not proposed as UGB expansion areas. They are supplemental analysis areas. As such, they will be studied but will be considered as expansion areas only if the Boundary TAC or USC chooses to look beyond the pool of lands included in scenarios. This approach is intended to provide the flexibility requested by the Boundary TAC. It is worth noting that this approach exceeds the requirements of the Division 24 rule (guiding UGB expansion analyses), yet provides more information into the process of boundary formation.

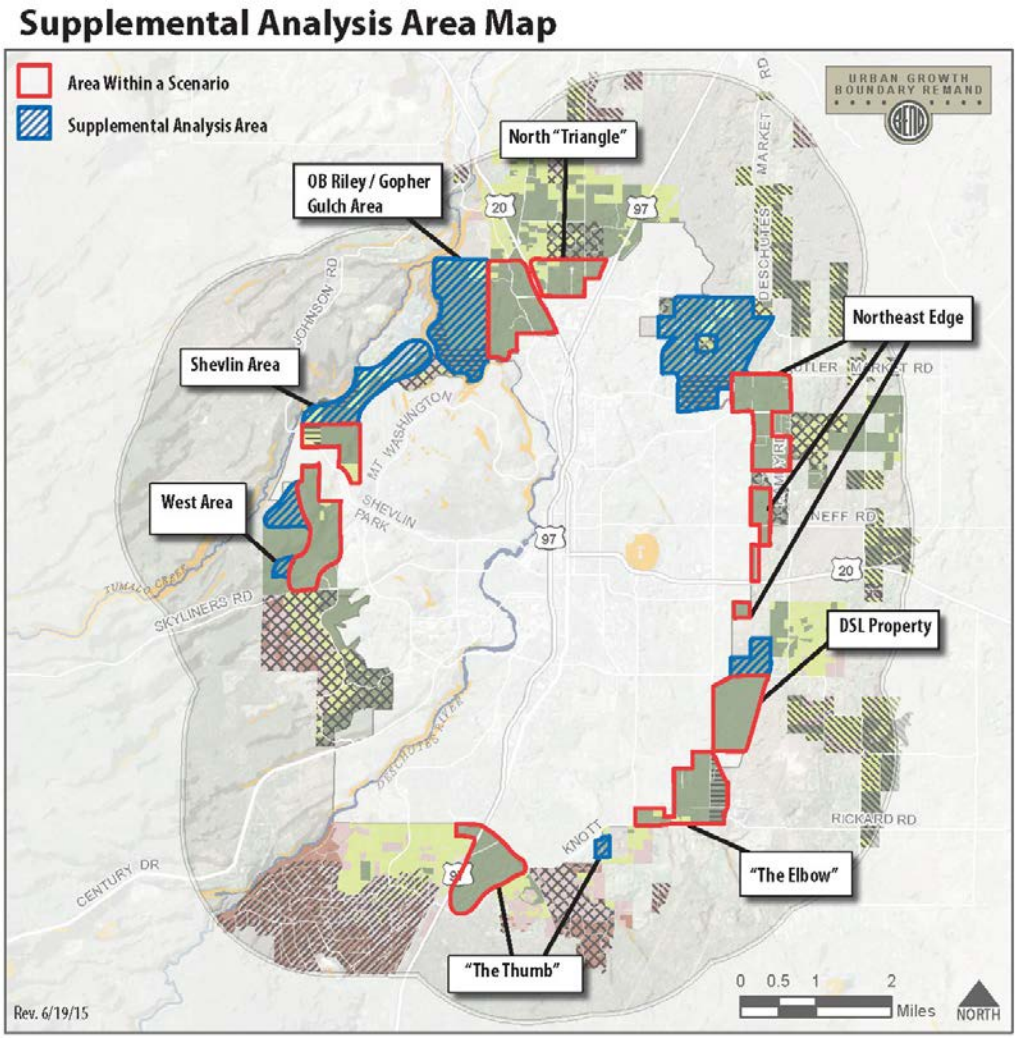
Implementing the Approach

Description of the Supplemental Analysis Area

The proposed Supplemental Analysis Area Map is shown on Figure 3. The lands in the Supplemental Analysis Area are generally adjacent to lands included within scenarios (shown on Figure 4 through Figure 9, beginning on page 16); however, in terms of geography and character, the supplemental analysis areas generally have one or more of the following conditions:

- Lands that are not as proximate to the UGB and existing urban development as the adjacent expansion areas (e.g. the western portion of Gopher Gulch);
- Lands that are more developed and have relatively low potential for new growth that will help meet the land need within the 2028 planning horizon (e.g. the rural residential area north of Pine Nursery Park); or
- Lands that are proximate to natural resources and/or farm/forest land at outer edge of many subareas.

Figure 3: Proposed Supplemental Analysis Area and Land Proposed for Inclusion in a Scenario



Summary of the evaluation that will be conducted

Scenario Evaluations

The Boundary TAC discussed and agreed upon performance measures to use in evaluating each of the four Goal 14 factors in "Stage 4", the evaluation of scenarios. Those are summarized in brief below; the full version is included in Appendix D.

Factor 1: Efficient accommodation of identified land needs

Using the Envision Tomorrow model, the Factor 1 evaluation will focus on: the extent of expansion, density, growth inside vs. outside the current UGB, and growth through infill/redevelopment. Note: additional evaluation of the desirability of areas identified for commercial and industrial uses is also proposed to be done for the scenarios. An evaluation of urban form considerations will also be prepared.

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

Transportation evaluations will be conducted using both the Envision Tomorrow "7D" transportation analysis tool and the Travel Demand Model. These evaluations will analyze Vehicle Miles Traveled (VMT) per capita, auto/walk/bike mode split, congestion, support of transit, need for new transportation facilities, and impacts on bicycle/pedestrian system. Transportation costs for major improvements will be provided.

The water infrastructure evaluation will focus on the cost of new facilities using optimization model (limited to area served by City of Bend) and unit cost estimates from Envision Tomorrow.

The sewer infrastructure evaluation will be conducted using the City's optimization model. The analysis will identify the system level improvements (e.g. larger pipes, pump stations, interceptors) that are required to sewer to serve the scenarios. Cost of new facilities and system improvements will be provided.

The stormwater evaluation will use Envision Tomorrow to map expansion within sensitive or challenging areas for stormwater.

Note: the above-described evaluations will look at the scenario as a whole; however, where results can be attributed to a particular subarea or quadrant of the city, they will be reported that way.

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

The ESEE evaluation will use Envision Tomorrow and focus on development in environmentally sensitive areas, housing affordability, proximity to schools and parks, and jobs/housing balance.

In addition, wildfire site assessments will be conducted for lands included in a scenario and adjacent buffer areas, which will also support Factor 3 analysis. The City is coordinating with the irrigation districts to define how the impact to irrigation districts may also be considered as an economic consequence.

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

The evaluation will use Envision Tomorrow, focusing on where the proposed boundary abuts resource land. Per TAC direction, the evaluation will seek information about lands being irrigated for agriculture.

Supplemental Analysis

For the supplemental analysis areas, the team is still refining the details of the proposed evaluation. The highest priority is to provide information related to infrastructure costs for Factor 2; however, the team proposes doing a high level of analysis for all four factors.

For Factor 2, this would likely include:

- **Sewer and Water:** Sensitivity testing using the optimization model, to determine whether the type, size or location of required infrastructure improvements change significantly when the UGB areas are expanded.[4]
- **Transportation:** Either using the Travel Demand Model, focusing on congestion and major infrastructure needs, or a qualitative assessment of what additional issues might arise that differ from what was modeled in the scenarios

For the other factors, the team proposes a qualitative, high level assessment focusing on the salient issues in each subarea.

Using the evaluation to create a proposed draft UGB

The project team will present the results of the scenario evaluations and supplemental analysis to the Boundary TAC in October. This will be a complex body of information. It will be summarized in executive summary narratives, tables, graphics intended to help the Boundary TAC see patterns of pros, cons, and trade-offs for the scenarios. The scenarios being approved for evaluation can be thought of as a "kit of parts" from which the Boundary TAC will identify the best performing elements that meet state law and Bend's goals. If the Boundary TAC sees a need to consider land from the supplemental analysis areas, it will have the latitude and base information from which to do so.

The criteria guiding the creation of the hybrid will be the four Goal 14 factors and the project goals. As stated in state law, this will be a balancing process: *"The boundary location factors of Goal 14 are not independent criteria. When the factors are applied to compare alternative boundary locations and determine the UGB location, a local government must show that all the factors were considered and balanced."* (OAR 660-024-0060(3)) The team will work with the Boundary TAC leadership to define a process of structured decision making for the Boundary TAC to use in identifying the preferred elements, and rationale, of the proposed "hybrid" plan. The hybrid will be the working draft proposed UGB. Once the hybrid is defined, it will be run through the Goal 14 evaluations once more to update the factual base and support the Boundary TAC's recommendation for a proposed UGB that will be forwarded to the USC.

[4] The team will provide the scenarios to Avion for analysis of impacts in their service area.

Recommendation

The project team recommends forwarding the approach described under "Recommended Approach: Overview and Rationale" starting on page 8 and the set of lands for scenarios and supplemental analysis on Figure 3 (page 10) to the USC for approval.

SCENARIO REFINEMENTS

Boundary TAC Comments

At the June 9th Boundary TAC meeting, the Boundary TAC discussed the first draft of proposed scenarios. The Boundary TAC did not vote on specific refinements; however, individual members suggested refinements for the team to consider. These are listed below along with a brief note about how/whether they are reflected in the refined scenarios. In addition, a comment log of public testimony is included in Appendix E.

Boundary TAC Comment	Project Team Response
Include more of Northeast Edge in a scenario, particularly Butler Market Village	See Scenario 1.1; also included more on Supplemental Analysis Map
Lots of emphasis on southeast – spread more	Scenarios 1.1 and 1.3 provide choices that include limited growth in southeast. Scenario 1.2 retains more growth in southeast to reflect workshop results and for testing purposes
Employment a better fit in the North "Triangle" than residential	The scenarios retain both choices (employment focus and a more mixed community) to reflect workshop results and for testing purposes
Include land adjacent to "The Thumb" in a scenario (Baney property)	See Scenario 2.1
Include an all-eastside scenario, moving growth from West Area to east or near "The Thumb"	Scenario 1.1 includes a relatively small west-side expansion; the team believes this is at the smallest west side expansion that is consistent with workshop ideas and TAC discussions to date.
Include more residential on "The Thumb"	Scenario 2.1 includes residential on the Thumb – the relatively large employment land need drives employment emphasis in this area

Boundary TAC Comment	Project Team Response
Spread growth a little more around the perimeter rather than concentrating in a few areas	See Scenario 3.1 – slightly more spreading of growth; further distribution is challenging due to heavy employment need and limited residential need
Bring in the block of SR2.5 between Yeoman Road and Juniper Ridge on the northeast side of the city to provide better connectivity to Juniper Ridge	Not included on a scenario, but considered on the Supplemental Analysis Area Map for the reasons articulated by the Boundary TAC. Very low development capacity is assumed because the area is already developed.
Take the east side of Juniper Ridge out of the UGB	The team does not consider this a realistic option at this time; would require finding other land for employment, which is a challenge already.
Consider bringing in Deschutes River Woods (DRW)	Not included on a scenario or on the analysis map. This area has been analyzed and does not score well per the Bend UGB Suitability Composite Map (Annotated), which represents the balancing of the Goal 14 factors. There is very little development potential. The Remand is clear that the City cannot bring in land that does not meet an identified land need. There would likely be strong resistance from current residents.

Overview of Refined Scenarios

The following information is presented for each scenario:

- Scenario description, including overall themes and relationship to workshop concepts.
- Simplified scenario map, using three generalized categories (see below)
- Detailed scenario map, using Envision Tomorrow “development types” (see Appendix F for more about the development types)

For convenience, a side-by-side comparison of the previous scenarios and the refined versions is presented in Appendix G.

The categories shown on the generalized scenario maps are as follows (same as June 2 materials):

- *Residential area with locally-serving employment*: Predominately residential uses, with supportive uses such as parks, schools, and local commercial centers. Employment uses in the area are estimated to provide fewer than roughly 400 jobs.
- *Residential area with significant employment*: A full mix with residential uses, parks and/or schools, and commercial and employment areas. Employment uses in the area are projected to provide roughly 400 jobs or greater.
- *Employment area*: Employment-focused area providing for a mix of jobs (retail, office, and/or industrial) with little or no residential use.

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

The identification of future community parks and schools on both the simplified and the detailed maps is preliminary and subject to further refinement with the school and park districts.

The UGB Expansion scenarios were created using "development types" that generally represent Bend's General Plan designations; however, the assignment of development types in expansion areas is preliminary and does not indicate specific locations for proposed plan designations. The arrangement of land uses may differ significantly from what is shown on the detailed maps, particularly for large properties that will be subject to master planning requirements.[5]

The development types contain various assumptions calibrated by the project team with the best available information and with TAC direction at various stages, including the type and intensity of development expected; set-asides for streets, neighborhood parks, and other lands; and rates of redevelopment expected for developed land.

Note that, as with the original three scenarios presented on June 9th, the assumptions inside the current UGB are constant across the three scenarios.

Expansion Scenario 1.1

Overview

This scenario focuses large new employment districts in the North "Triangle" and in "The Thumb" along Highway 97. This picks up on a workshop idea from a few tables of keeping the North "Triangle" non-residential, and tests a non-residential option for "The Thumb" in order to test residential use in other areas identified in the workshop. The West Area contains uses surrounding a locally-serving commercial core. Portions of the DSL property and "The Thumb" contain a mix of housing and employment as well. This scenario has significant expansions in the Northeast Edge. The Large Lot Industrial need is met in the DSL Property.

What's changed from Scenario 1.0

- Significantly increased residential development in Northeast Edge
- Reduced residential development in DSL Property and West Area.

[5] Note that large properties were divided into 2.5 acre grids for the purposes of assigning development types; thus, the edges are rough and the development types are assigned at a relatively low "resolution".

- Large Lot Industrial Area relocated from “The Thumb” to DSL Property.
- Minor refinements to individual properties in NE based on existing uses.

Figure 4: Expansion Scenario 1.1 Overview Map

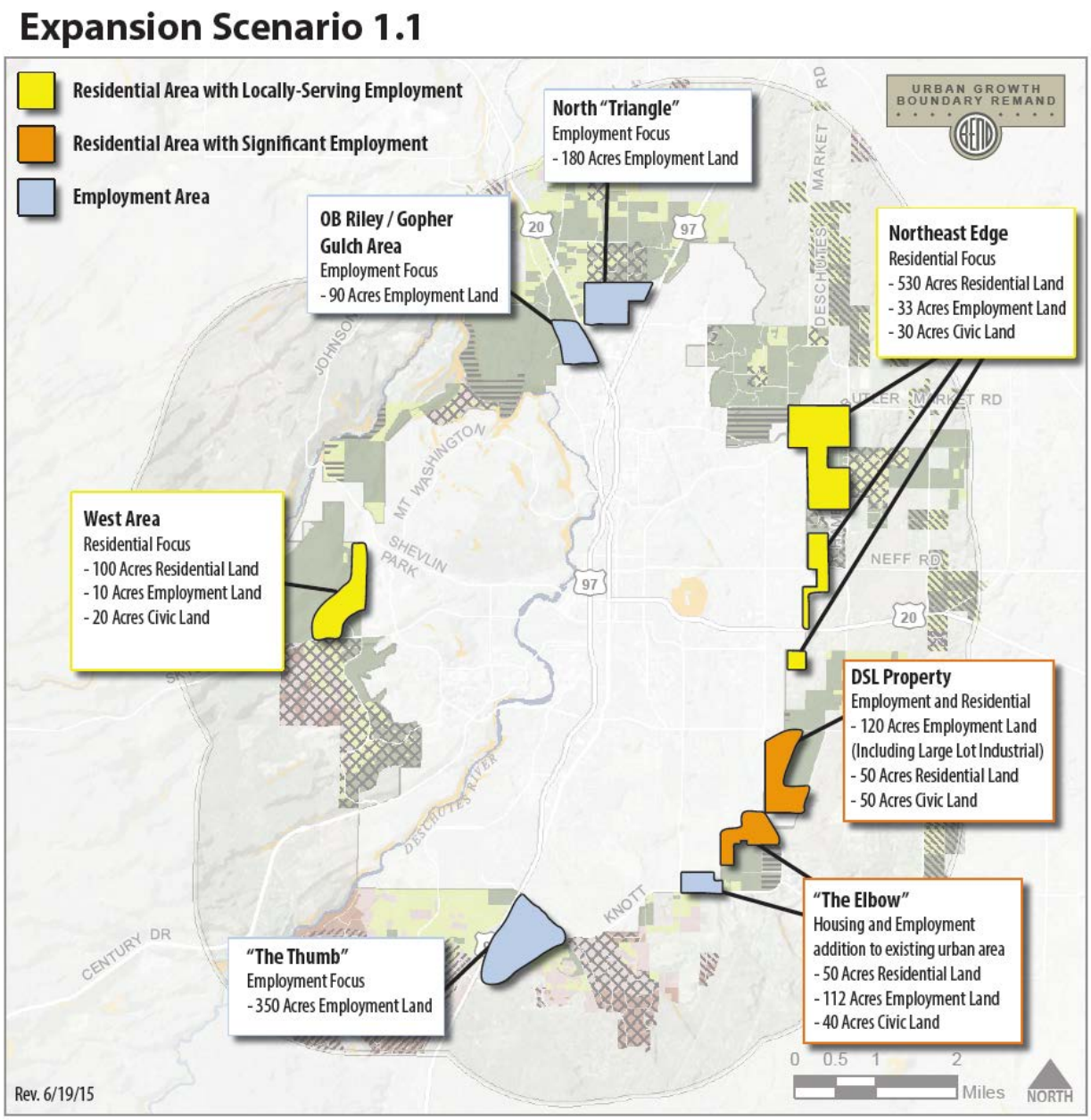
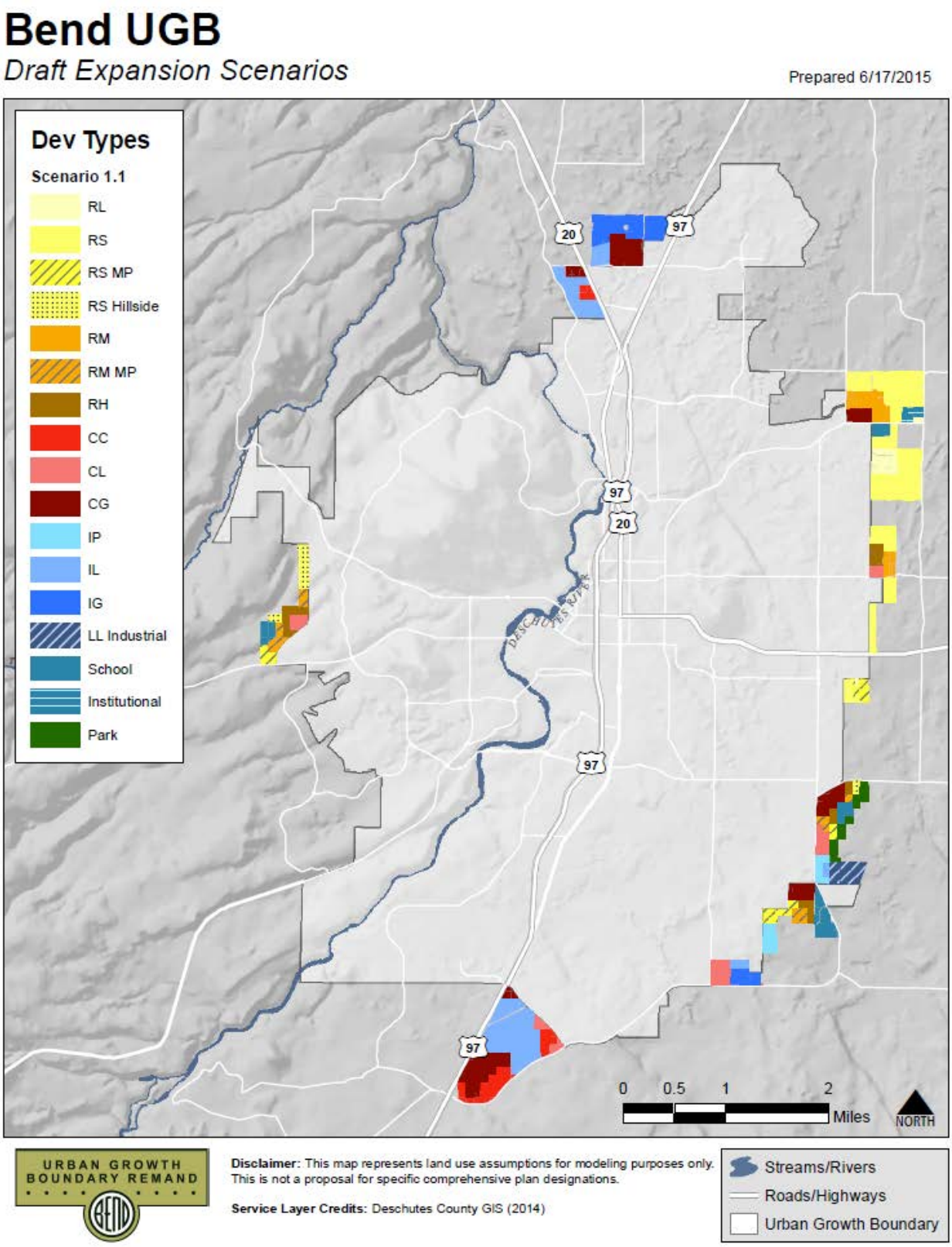


Figure 5: Expansion Scenario 1.1 Detail Map



Expansion Scenario 2.1

Overview

This scenario focuses on creating new "complete communities" with a mix of housing and employment in all quadrants of the City. Nearly all expansion areas provide a full mix of uses, including housing, employment areas, shopping/services, and schools and parks. This scenario emphasizes southeastern expansion, including significant growth in the DSL Property, “The Elbow,” and “The Thumb.” This scenario tests workshop ideas including fully utilizing “The Elbow” to create a new complete community, incorporating residential uses (predominately multifamily housing) in the North “Triangle”, and placing some industrial/professional office in the West Area. The Large Lot Industrial Site is located between Highway 20 and OB Riley Road in this scenario, picking up on an idea from one of the workshop groups.

What’s changed from Scenario 2.0

- Slightly increased residential development in Northeast Edge
- Slightly decreased residential development in the West Area
- Added development on property adjacent to “The Thumb”
- Reduced development in southern portion of “The Thumb”

Figure 6: Expansion Scenario 2.1 Overview Map

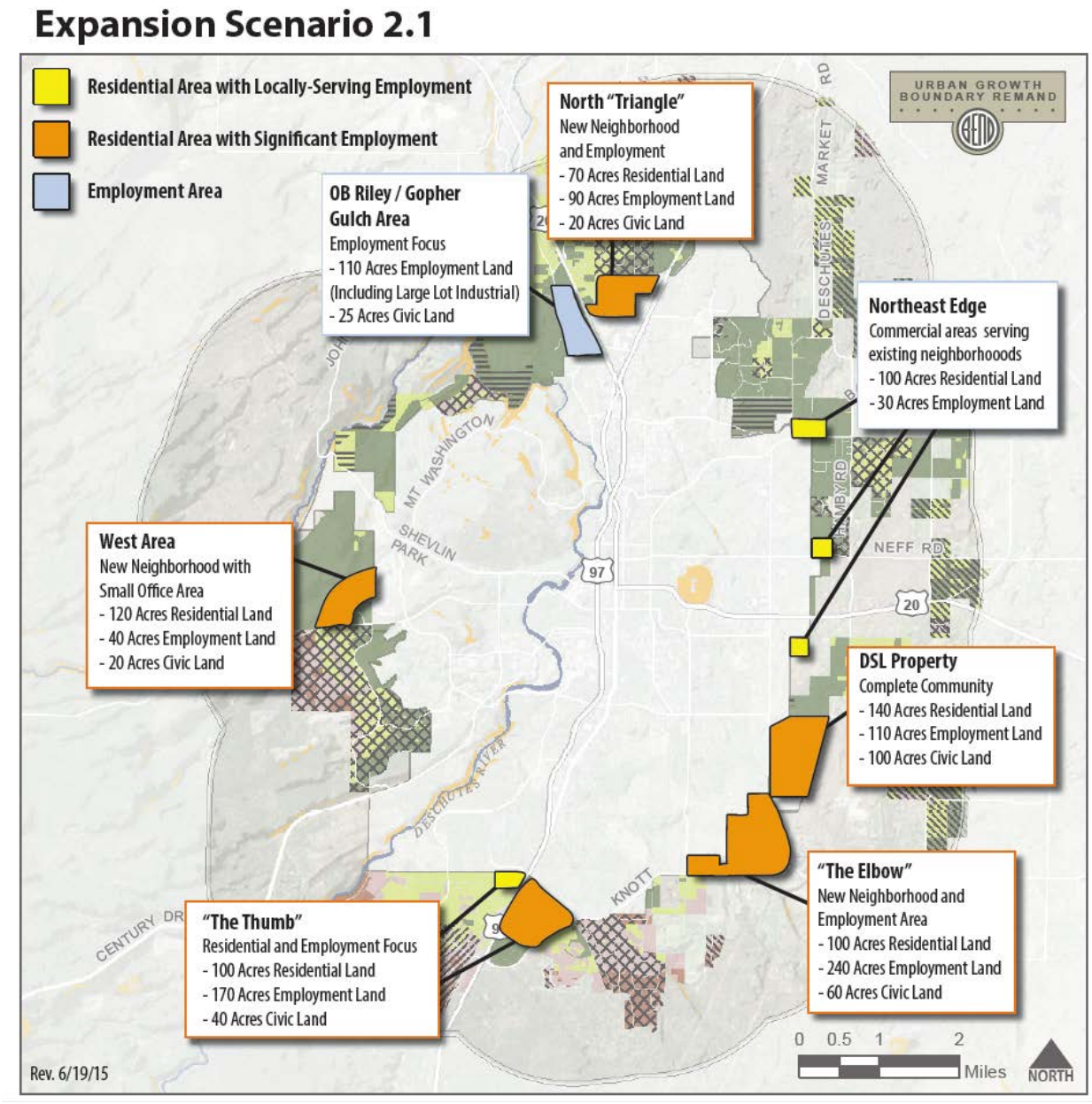
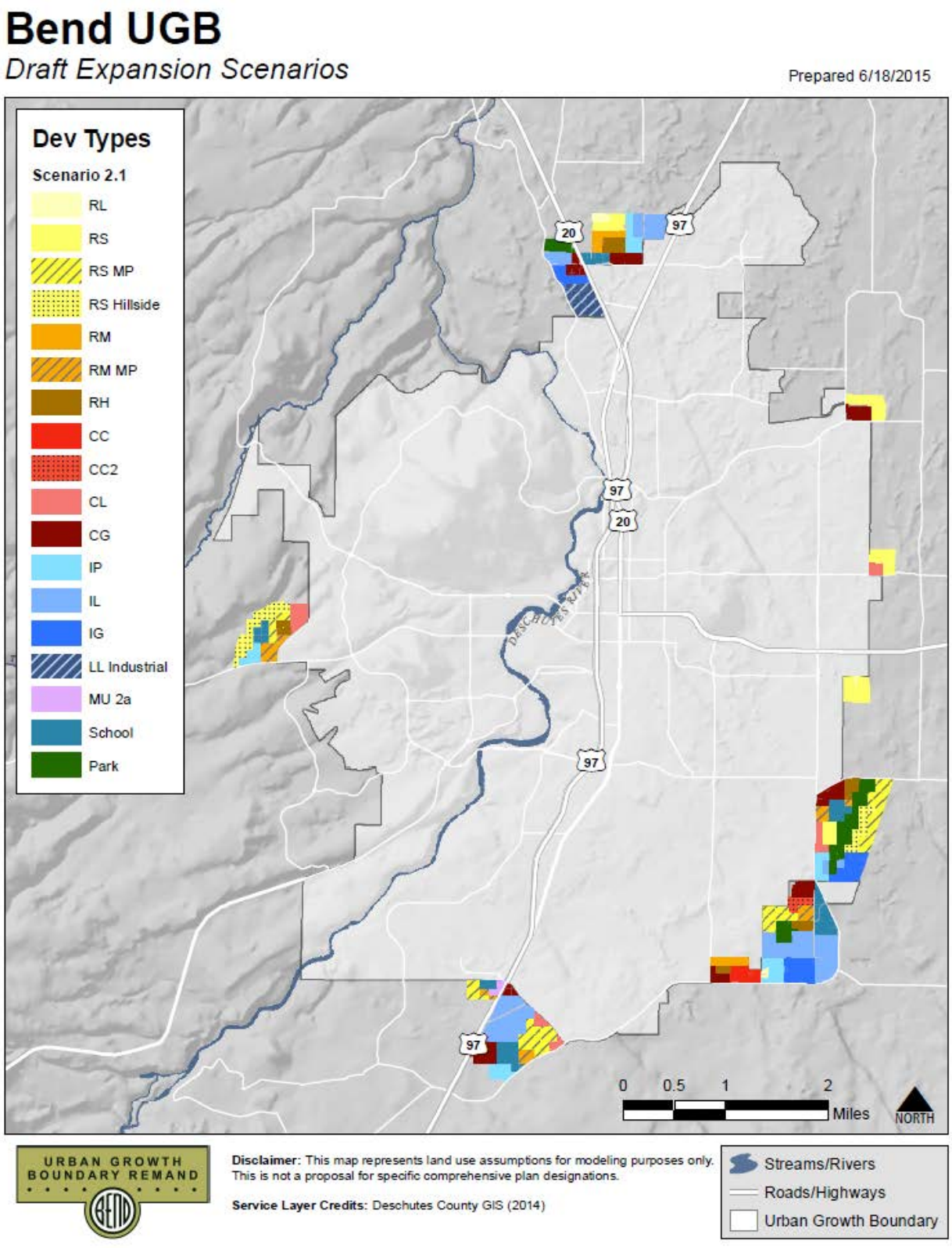


Figure 7: Expansion Scenario 2.1 Detail Map



Expansion Scenario 3.1

Overview

This scenario focuses a larger amount of expansion to the north and west of the city, and includes a relatively large area along OB Riley adjacent to Gopher Gulch. Only portions of large vacant sites in the southeast (DSL Property, “The Elbow” and “The Thumb”) are included. The Large Lot Industrial Site is located in the North “Triangle” – this area, though not selected by any of the workshop groups, appears to meet the site characteristics needed for that use, and has an employment focus in this scenario. This scenario tests other workshop ideas, including bringing in the Shevlin area for a mix of uses and bringing in the area west of OB Riley Road for residential uses.

What’s changed from Scenario 3.0

- Slightly increased residential development in Northeast Edge
- Slightly decreased residential development in the West Area
- Reduced development in southern portion of DSL property

Figure 8: Expansion Scenario 3.1 Overview Map

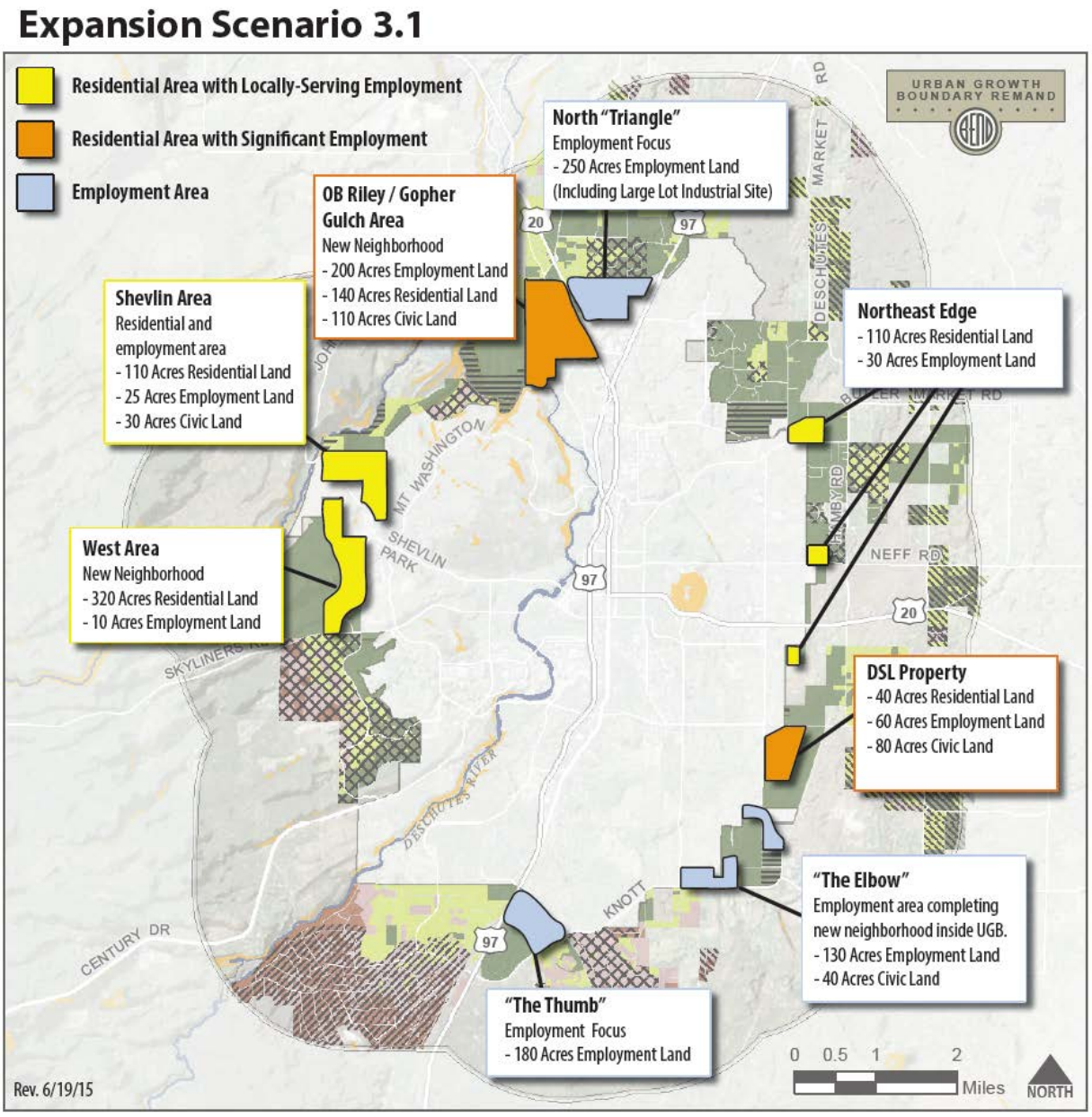
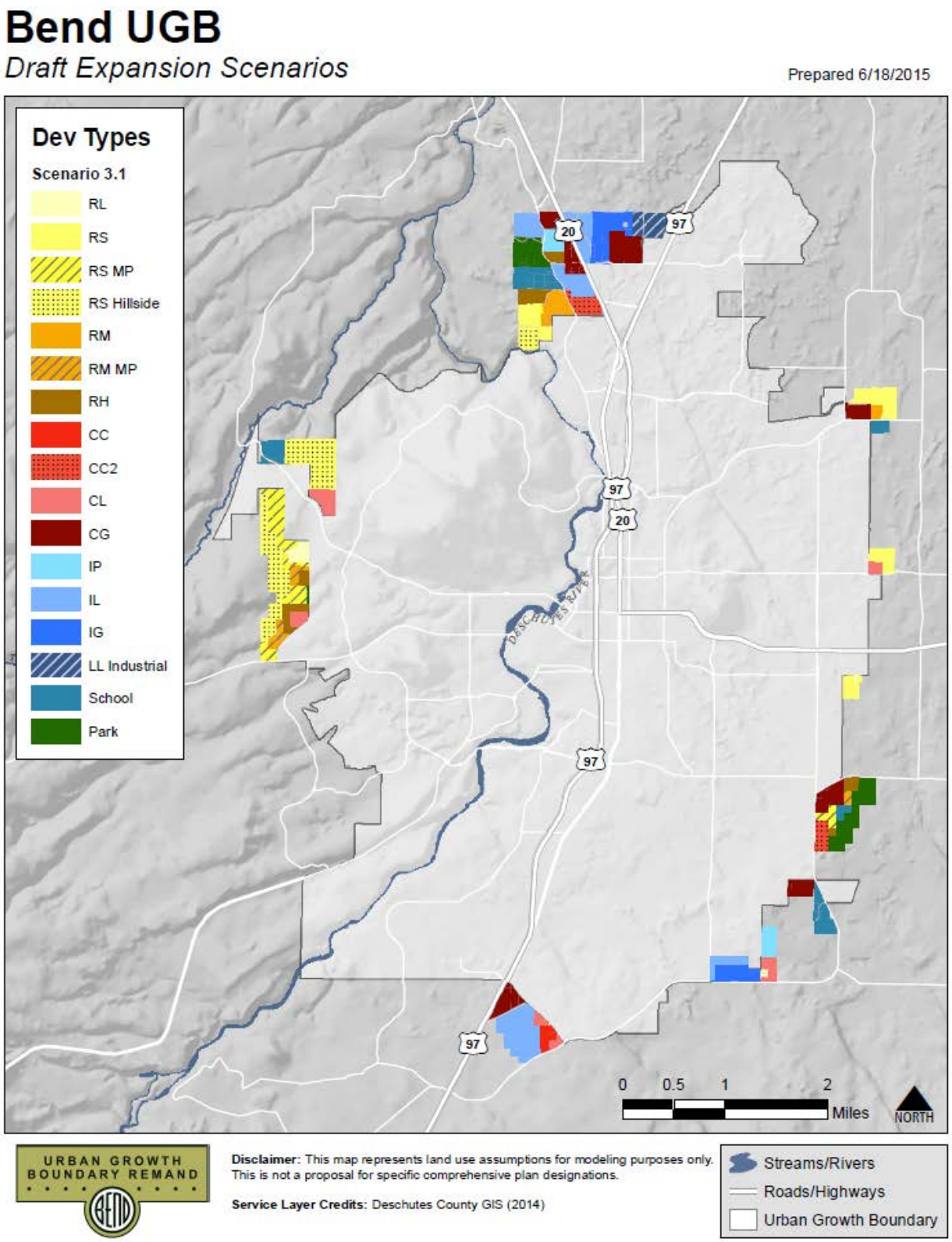


Figure 9: Expansion Scenario 3.1 Detail Map



Questions for the Boundary TAC

1. Are there any changes the Boundary TAC wishes to propose to Expansion Scenario 1.1?

2. Are there any changes the Boundary TAC wishes to propose to Expansion Scenario 2.1?

3. Are there any changes the Boundary TAC wishes to propose to Expansion Scenario 3.1?

4. Are there any different scenarios a TAC member wishes to propose?

Recommendation

Forward the slate of scenarios, as revised, to the USC.

APPENDICES

A. Goal 14 administrative rule (660-024-0060)
B. City Attorney Memorandum Regarding Boundary Analysis and McMinnville Case (August 19, 2014)
C. Suitability Criteria and Key Characteristics, Advantages and Disadvantages of Remaining Land
D. Table 1 Goal 14 Factors (Stage 2 indicators and Stage 4 performance measures)
E. Comment Log of Public Testimony
F. UGB Expansion Scenario Assumptions and Development Type Details
G. Side-by-Side Scenarios, Original and Refined Versions

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER

APPENDIX A:

Goal 14 administrative rule (660-024-0060)

DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT

DIVISION 24

URBAN GROWTH BOUNDARIES[1]

660-024-0060

Boundary Location Alternatives Analysis

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

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

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

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

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

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

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

[1] http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_660/660_024.html, accessed 6/22/15.

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

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

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

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

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

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

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

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

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

Stat. Auth.: ORS 197.040, Statewide Planning Goal 14
Stats. Implemented: ORS 195.036, 197.015, 197.295 - 197.314, 197.610 - 197.650, 197.764
Hist.: LCDD 8-2006, f. 10-19-06, cert. ef. 4-5-07; LCDD 2-2009, f. 4-8-09, cert. ef. 4-16-09

APPENDIX B:

City Attorney Memorandum Regarding Boundary Analysis and McMinnville Case (August 19, 2014)

CITY ATTORNEY MEMORANDUM

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www.ci.bend.or.us

To: UGB Boundary and Growth Scenarios Technical Advisory Committee

From: Mary Alice Winters, City Attorney

Subject: Boundary Analysis and McMinnville Case

Date: August 19, 2014

You asked for a legal analysis of the McMinnville case, *1000 Friends v. Land Conservation and Development Commission and City of McMinnville*, 244 Or App 239 (2011), and how it impacts the direction on the alternatives and boundary location analysis from the Land Conservation and Development Commission (LCDC) in the Remand Order. The decision has been posted on the City's UGB website, along with the Order Denying Reconsideration, the City of McMinnville's Motion for Reconsideration, the City of Bend's Amicus Brief, and the Response by 1000 Friends, for any of you who don't have enough to read already.

To summarize, the relevant issue in the case was how the priority statute, ORS 197.298, works in conjunction with the Goal 14 locational factors. As articulated by the Court, Petitioner 1000 Friends argued that the priority statute works to categorize land as available to meet broadly defined land use needs, and that higher priority land qualifies to meet that need unless urban services cannot be provided to the land because of physical constraints. Then, Goal 14 is applied to the prioritized and available land to determine specific growth areas.

According to Respondents, ORS 197.298 is applied to determine the adequacy of land for more particular land use needs; higher priority land qualifies, unless it is determined to be unsuitable under the Goal 14 locational factors and the Goal 2 exceptions factors. Goal 14 is then applied to corroborate the inclusion of higher priority land and to justify any further selection among land of a lower-priority class. *Id.* at 254.

The Court ultimately concluded that neither party had it quite right. It held that ORS 197.298 does provide "the first cut" in the sort process and Goal 14 is "then applied" to justify the inclusion and any remaining choices about what land to include in the boundary. The court did say that Goal 14 is used to determine the "adequacy" of land available under ORS 197.298(1), but in a more particular way than suggested by the City and LCDC. *Id.*

Goal 14 consists of seven factors that govern whether and where a UGB is expanded. Factors 1 and 2 determine whether a city **needs** to expands its UGB to accommodate growth, housing needs, employment opportunities, and livability.

Factors 3 through 7 apply to **location** of that expansion based on public facilities and services, efficiency of land uses, consequences of development, retention of land for farm use, and compatibility of development with nearby agricultural activities. Essentially, the court set out an analytical 3-step process for integrating Goal 14 and ORS 197.298.

In McMinnville, the court said that step 1 is to determine the land needed under ORS 197.298(1). The descending priorities of the statute are applied to determine whether priority land is "inadequate to accommodate the amount of land needed". That determination is made by the application of Goal 14, which provides that the "establishment and change of boundaries is based on a consideration of the following factors: (1) The demonstrated need to accommodate the long range urban population, consistent with the 20-year population forecast, and (2) Need for housing, employment opportunities, livability or uses such as public facilities, streets and roads, schools, parks or open space. If these needs cannot be met through the existing UGB through rezoning or infill, then the locality must amend its UGB to include sufficient buildable land to accommodate its housing and economic land needs. *Id*. at 256. Here, this latter determination will be based on the recommendation of the residential TAC, consistent with ORS 197.296 and the Remand Order. This first step is the analysis described by our consultants.
So far, so good.

Then in Step 2, the local government determines the adequacy of candidate lands under ORS 197.298 (1) and (3). The Court reasoned that only Goal 14 Factors 5 (Economic, energy, economic and social consequences, or ESEE) and 7 (compatibility with adjacent agriculture land) are applied to determine whether higher priority land "is inadequate to accommodate the amount of land needed" under ORS 197.298(1). In the court's view, the more restrictive priority exceptions in ORS 197.298(3) would be "meaningless surplusage" if the less restrictive Goal 14 factors 3, 5 and 6 are applied first. The key one in Bend is probably ORS 197.298(3)(b)—permitting an inadequacy conclusion only when public services cannot be extended because of topographic or physical constraints. Goal 14 Factor 3, which considers the relative cost of delivery of public services and facilities, cannot be considered at this step. The Court arguably altered the understanding of local government based on prior cases out of West Linn and the City of Adair in so holding. This was pointed out in the request for reconsideration, but that request was denied. This step is best viewed as a way to determine whether there is sufficient higher priority land to meet the City's needs identified in Step 1 and to disqualify unsuitable land (narrowly defined). It is not a step that qualifies lower priority land. The EESE contemplated at this stage, in our legal and planning view, is high level and general (not a project level EESE as done of for a Goal 3 or 4 exception analysis).

After a local government has prioritized lands under ORS 197.298 (1) and (3) and Goal 14 Factors 5 and 7, a new "Step Three" is added, during which the remaining factors of Goal 14 are applied to land so prioritized to include or exclude lands from the UGB. According to the Court, ORS 197.298 operates to "identify land that *could*

be added to the UGB to accommodate a needed type of land use," which Goal 14 is applied thereafter "to qualify land that, identified already under ORS 197.298, *should* be added to the Boundary." *Id*. at 265. The comparative EESE are also considered on an alternatives and more localized basis, as appropriate.

One point to keep in mind is that the Court was interpreting Goal 14 as it was drafted prior to April 28, 2005, as the rules allowed the City to apply the former version of the rule. 244 Or App at 239. The Goal 14 rule was amended by LCDC to "clarify the relationship between ORS and the locational factors of Goal 14 for urban growth boundary expansions." See Remand, page 125. However, the Goal 14 factors are essentially the same, albeit in a different order.[1] OAR 660-024-0060, adopted 10-5-06, further clarifies the process. However, without getting too nuanced, to the extent the new rule does not exactly track the process set forth in McMinnville, the Court of Appeals specifically interpreted the Goal in light of the Court's view of the statute and prior case law. Despite the City of McMinnville's argument that the application of the statute and Goal 14 was inconsistent with prior case law, the Court declined reconsideration and LCDC did not appeal the decision. Therefore, it is safest to follow the three-step process from the Court of Appeals. The concepts are all consistent with the Remand, the timing has the most room for interpretation.

In outline form, as confirmed by DLCD, the **suggested process to do a locational analysis based on current law/McMinnville decision** (as it applies to Bend) is as follows:

1. START WITH AMOUNT OF NEEDED LANDS
   A. Adopted Population Forecast
   B. Demonstrated need for housing, employment, public and semi-public uses
   C. Determine Study Area of Candidate Lands—Categorize lands under the four priorities of 197.298(1)
      a. EXCEPTION LANDS
      b. RESOURCE LAND – FURTHER SUBCATEGORIZED BY SOIL CLASS

2. FIRST PRIORITY FOR BEND: EXCEPTION LANDS. APPLY THE FOLLOWING FACTORS TO EXCLUDE (OR INCLUDE LOWER PRIORITY) LANDS FROM THE UGB:
   a. Exclude lands that are not buildable
   b. Exclude lands based upon specific land needs (197.298(3)(a))

[1] Statewide Planning Goal 14 (as amended April 28, 2005) requires the following:
"The location of the urban growth boundary and changes to the boundary shall be determined by evaluating alternative boundary locations consistent with ORS 197.298 and with consideration of the following factors:
(1) Efficient accommodation of identified land needs;
(2) Orderly and economic provision of public facilities and services;
(3) Comparative environmental, energy, economic and social consequences; and
(4) Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on far and forest land outside the UGB."

c. Exclude lands based upon inability to reasonably provide urban services due to physical constraints (197.298(3)(b))
d. Exclude lands based upon analysis of comparative ESEE consequences (Goal 14, Boundary Location, Factor 3)
e. Exclude lands based upon analysis of compatibility with agricultural & forest activities (Goal 14, Boundary Location, Factor 4)

QUESTION: Where are UGB Goal 14 Locational Factors 1 and 2?
ANSWER: According to "McMinnville" logic, they are redundant and less restrictive than two of the corresponding factors in ORS 197.298, and thus drop out at this stage of analysis.

3. A. IF THE AMOUNT OF LAND REMAINING AFTER EXCLUSIONS IS GREATER THAN THE AMOUNT OF NEEDED LANDS, THEN:

Apply the following factors INTERDEPENDENTLY to pick and choose among the land remaining after exclusions:

a. Efficient accommodation of identified land needs (Goal 14, Boundary Location, Factor 1)
b. Orderly and economic provision of services (Goal 14, Boundary Location, Factor 2)
c. Comparative ESEE consequences (Goal 14, Boundary Location, Factor 3)
d. Compatibility with agricultural and forest activities (Goal 14, Boundary Location, Factor 4)

B. IF THE AMOUNT OF LAND REMAINING AFTER EXCLUSIONS IS LESS THAN THE AMOUNT OF NEEDED LANDS, IN BEND GO TO FOURTH PRIORITY – RESOURCE LANDS

a. Repeat analysis under (2) above

The attached diagram prepared by ECONorthwest illustrates the steps in the UGB Alternatives Analysis Process as implied by the McMinnville decision and described in this memo.

APPENDIX C:

Suitability Criteria and Key Characteristics, Advantages and Disadvantages of Remaining Land

Memorandum

June 22, 2015

To:	Urban Growth Boundary and Growth Scenarios Technical Advisory Committee
Cc:	Urban Growth Boundary Steering Committee
From:	Angelo Planning Group Team
Re:	Suitability, Advantages and Disadvantages of Lands Advanced for Further Analysis

INTRODUCTION

This memorandum summarizes the suitability criteria used by the team in identifying appropriate locations for accommodating needed land uses and the advantages and disadvantages of the candidate Urban Growth Boundary (UGB) expansion areas.

SUITABILITY CRITERIA FOR NEEDED LAND USES

To date, the project team has not strictly applied specified characteristics that are necessary for land to be suitable for an identified need. Also, there has been general consensus that the identified needs for 2028 can be accommodated on priority exception lands. However, the participants in the scenario workshop did consider location criteria for particular uses in placing "chips" that approximated the land needs for industrial, commercial, residential and related park and school uses. These location criteria are summarized below.

Employment Uses

Large Lot Industrial

- Relatively flat, less than 5% slope
- Fewer parcels, very large ownerships
- Good access to state highway and/or arterials
- Compatible with adjacent uses

Industrial/Professional Office

- Relatively flat, less than 5% slope
- Fewer parcels, larger ownerships
- Good access to state highway and/or arterials
- Compatible with adjacent uses

Community Commercial Center

- Minimum 10 acres, typically 15+ acres
- Signalized access along a major street

- Highly visible location

Neighborhood Commercial Center

- Focal point for adjacent neighborhood
- Visible and accessible
- Typically along collector or similar street
- Pedestrian and bike friendly location

Residential Uses

Traditional Neighborhood

- Generally larger, vacant ownerships
- Generally flatter sites
- Opportunity for excellent connectivity
- Potential for transit
- Access to amenities to support higher density housing

Multi-Family Housing

- Best located near amenities such as transit, schools, and parks
- Can be concentrated in one area or spread among other housing types to create a diverse neighborhood

Suburban Single Family Neighborhood

- Lots up to about 5 acres
- Limited potential for improving connectivity in infill areas (new development can have good connectivity)
- Limited capacity for infill
- May be between UGB and vacant land to be urbanized

Open Space Neighborhood

- Natural resources within or adjacent to site
- Large enough to support cluster design

Large Lot Neighborhood

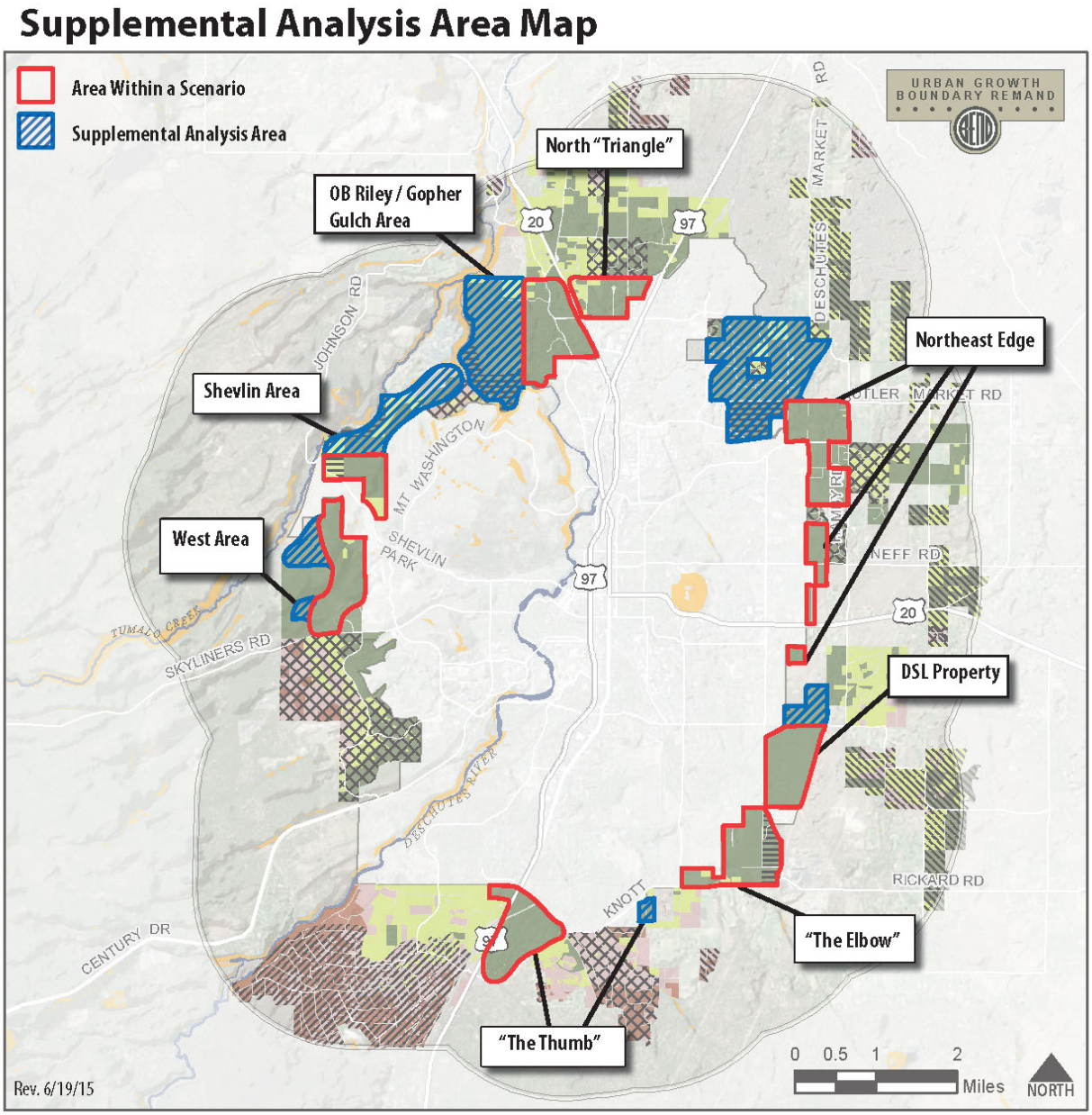
- Lots up to about 5 acres (e.g. developed originally as rural subdivision or resort)
- Limited potential for improving connectivity
- Limited capacity for infill
- May be between UGB and vacant land to be urbanized

In general, the suitability characteristics for employment land (and industrial uses in particular) are more specific. Guidance on suitability characteristics for employment land was derived from policies in Bend's General Plan, site criteria in the EOA, and input from the Employment TAC. Residential land needs are less tied to specific suitability characteristics.

SUITABILITY, ADVANTAGES & DISADVANTAGES BY SUBAREA

The project team has more thoroughly documented the suitability, advantages, and disadvantages of candidate UGB expansion areas, building on the "urban form considerations" articulated in the June 2, 2015 memorandum to the Boundary TAC. The subareas are shown on Figure 1. The discussion that follows addresses both land included within a scenario and Supplemental Analysis Areas. Where circumstances are not the same throughout a given subarea, this has been noted in the text.

Figure 1: UGB Expansion Analysis Subareas



West Area

The West Area is a transitional area between the existing UGB and the resource lands defined by Tumalo Creek and Deschutes National Forest.[1] The area is adjacent to existing schools and Northwest Crossing inside the UGB.

Suitability

The area has relatively good connectivity to the western part of the city, but lacks major highway connections to other parts of the city and region - making it more suitable for residential and mixed use development and less suitable for office and industrial use. Being a large, vacant ownership, it has potential for traditional neighborhood development with a mix of housing types and good connectivity in flatter and closer-in areas. It will have natural amenities, being located near National Forest and open space, which would make it potentially suitable for multi-family housing. Because of adjacent resource areas, the outer portions may be most appropriate for cluster housing that preserves extra open space. Because it is near the urban/rural edge, fire risk mitigation strategies may be needed.

Advantages

- Large, undeveloped parcels with few owners (Factor 1)
- Few development constraints on most of site (Factor 1)
- Opportunities to master plan complete neighborhoods/communities (Factor 1)
- Contiguous with existing UGB at east and north edges (Factor 1)
- Largely serviceable by gravity from Bend water system (Factor 2)
- Generally rated good for connectivity to complete roadway grid and not relying on congested corridor (Factor 2)
- Proximity to natural amenities such as Shevlin Park and Phil's Trail system (Factor 3)
- Proximity to existing schools, particularly in SE quadrant (Factor 3)
- No impacts on irrigation districts in west area (Factor 4)

Disadvantages

- Steeper topography at west edge closer to Tumalo Creek (Factor 1)
- At the westerly edge, closer proximity to natural resource area, including deer winter range, Tumalo Creek and forest lands (Factor 3)
- Community concerns regarding higher relative fire risk to the west (Factor 3)
- Closer proximity to Deschutes National Forest to the west; however, Cascade Highlands and Tetherow are already developed to that edge (Factor 4)

[1] A rural cluster subdivision is currently under review between the expansion area considered by the TAC and the resource lands described.

Shevlin Area

The Shevlin area is bounded to the northwest by Tumalo Creek, a physical barrier that is likely to be a “hard edge” to the city’s urban form for the long term. The other edges are contiguous to the current UGB and existing neighborhoods.

Suitability

The area has moderate connectivity to the western part of the city, but lacks major highway connections to other parts of the city and region, making it more suitable for residential and mixed use development or small office/flex us, but less suitable for major office or industrial use. It is a large, mostly vacant site that gives it some potential for traditional neighborhood development on the southern end. The elongated shape of the northern portion and its proximity to Tumalo Creek makes that area more suitable for cluster housing to preserve extra open space. It will have natural amenities, being located near natural resources, which would make it potentially suitable for limited amounts of multi-family housing. Because it is near the urban/rural edge, fire risk mitigation strategies may be needed.

Advantages

- Large, undeveloped parcels with few owners (Factor 1)
- Opportunities to master plan complete neighborhoods/communities (Factor 1)
- Contiguous with existing UGB along southerly edge (Factor 1)
- Serviceable by gravity from Bend water system (Factor 2)
- Rated good for not relying on congested corridor
- Proximity to natural amenities such as Shevlin Park and trail system (Factor 3)
- No impacts on irrigation districts in the Shevlin area (Factor 4)

Disadvantages

- Steeper topography along Tumalo Creek (Factor 1)
- Physical barriers to connectivity across Deschutes River & Tumalo Creek, if needed for urbanization (Factor 2)
- At northwesterly edge, close proximity to Tumalo Creek and multiple resource values, including riparian, deer winter range, scenic, etc. (Factor 3)
- Possible constraints with near-term wastewater service (needs further analysis)

OB Riley/Gopher Gulch Area

This area is bounded to the east by Highway 20 and to the west/south by the Deschutes River and Archie Briggs Canyon Open Space.

Suitability

The presence of Highway 20 and the intersection at Cooley Road drive the land use pattern on the east side of this area, where employment uses are suitable. The eastern portion of this area is also adjacent to the existing employment area in the north of Bend (the “Triangle”). There are several large lots in this area near the Cooley Road access to US 20 that may provide an opportunity for large lot industrial development, though some are oddly shaped.

West of Cooley Road are medium-sized (mostly five- to 20-acre) rural residential properties that are most suitable for suburban single family neighborhoods and large lot neighborhoods on the southern end, closest to the existing UGB where existing lot sizes are smaller. The larger properties further north are suitable for a wider range of uses, including traditional neighborhoods and local-serving commercial uses.

The westernmost portion of this subarea ("Gopher Gulch") is most suitable for residential uses due to its distance from major roads, beautiful setting and proximity to natural areas. Because of the large parcel size and undeveloped state, it has potential for traditional neighborhood development and, with potential for access to natural amenities and local-serving commercial, may be an appropriate site for multifamily housing. Because it is near the urban/rural edge, fire risk mitigation strategies may be needed.

Advantages

- Large, undeveloped parcels with few owners in the westerly portion of the area (Factor 1)
- Opportunities to master plan complete neighborhoods/communities (Factor 1)
- Generally few development constraints (Factor 1)
- Contiguous with existing UGB along southerly edge (Factor 1)
- Serviceable by gravity from Bend water system (Factor 2)
- Minimal barriers to transportation connectivity and minimal reliance on congested corridors (Factor 2)
- Good potential for wastewater service for easterly half of area abutting Hwy 20 (Factor 2)
- Proximity to natural amenities, including Deschutes River and park/natural areas (Factor 3)

Disadvantages

- Greater fragmentation, high improvement to land value ratios in southeast portion of area closer to Hwy 20 (Factor 1)
- Steeper topography along Deschutes River on the west (Factor 1)
- Westerly area closer to the river rated fair for wastewater service (Factor 2)
- Area more than ½ mile from existing schools (Factor 3)
- Swalley Irrigation District concerns with financial/operation impacts of urbanization (Factors 3 & 4)
- Closer proximity to irrigated EFU lands north of Cooley Road (Factor 4)

North "Triangle"

This subarea is located between Highway 97 and Highway 20, north of Cooley Road. To the north is a rural subdivision with covenants, conditions, and restrictions (CC&Rs).

Suitability

Excellent highway access and proximity to significant employment inside the UGB make this area a clear candidate for additional employment uses. It would also be suitable for medium to high density residential use in combination with a commercial center.

The western portion of the triangle (particularly west of Scenic Drive) is somewhat parcelized, with lots generally under five acres. This area is more suitable for suburban single family residential or small-scale employment uses. In addition, the northern edge, where it abuts rural subdivisions, may require some considerations for compatibility with the adjacent residential uses, making it less suitable for heavy industrial uses and high density multifamily housing.

Advantages

- Several contiguous large parcels (+20 acres) in proximity to existing UGB (Factor 1)
- Generally flat topography (Factor 1)
- Ranked with good connectivity to complete roadway grid (Factor 2)
- Serviceable by gravity from Bend water system (Factor 2)
- Ranked good for wastewater potential (Factor 2)
- No designated Significant Goal 5 resources in North Triangle (Factor 3)
- Triangle area more distant from forest and high-value EFU lands (Factor 4)

Disadvantages

- Moderate barriers to transportation connectivity (Factor 2)
- Easterly portion of North Triangle more reliant on congested transportation corridors (Factor 2)
- North Triangle area more the ½ mile from existing schools and parks (Factor 3)

Northeast Edge

This area is generally bounded by the current UGB to the west and Hamby Road and/or resource land to the east. It includes pockets of land from Stevens Road on the south to Margaret Road on the north. It encompasses “Butler Market Village”, the rural residential subdivisions between Yeoman Road and Margaret Road, the exception land between Eagle Road and Hamby road north of US 20 (except for the rural subdivisions in that area, which have been removed from the analysis), and two blocks of exception land between Bear Creek Road and Stevens Road.

Suitability

Areas with little existing development would be suitable for suburban single family neighborhoods. Small commercial areas may be appropriate along Butler Market Road, Neff Road, Bear Creek Road, and/or Stevens Road, and could potentially serve existing neighborhoods inside the UGB. The outer edge of this area abuts resource land, making compatibility a consideration for the western edge. More heavily developed areas, such as the

rural residential subdivisions between Yeoman Road and Margaret Road, may be suitable for limited amounts of large lot residential development, but little else.

Advantages

- Multiple parcels contiguous to existing UGB on the west (Factor 1)
- Generally flat topography (Factor 1)
- Scattered parcels 5-10 acres and larger; diversity of options for smaller builders (Factor 1)
- No physical barriers to transportation connectivity and minimal reliance on congested corridors (Factor 2)
- Serviceable by Avion Water Company (Factor 2)
- Ranked good for wastewater potential (Factor 2)
- No designated Significant Goal 5 resources in Northeast Edge (Factor 3)
- Within ¼ to ½ mile of existing parks (Factor 3)
- Portions of NE Edge in proximity to existing schools (Factor 3)

Disadvantages

- More parcelized area mixed with pockets of development (Factor 1)
- Some small subdivisions with CC&Rs with limited capacity for development (Factor 1)
- Fair connectivity to complete roadway grid (Factor 2)

DSL Property

This large, vacant site is bounded to the west by 27th Street and to the north by Stevens Road. The eastern edge of the exception area is formed by a major utility easement; past the easement is still DSL property, but it is designated as resource land. To the south lie the Humane Society and County public works buildings.

Suitability

The north and west edges are potentially suitable for retail areas due to this visibility and potential for relatively large customer base with a half-mile radius. The southern edge is potentially suitable for other employment uses; it has access to 27th Street / Knott Road, which provides access to Highway 20 and Highway 97, though it is not directly adjacent to either highway. Its large size, flat topography, and lack of current development as well as the moderate transportation access make it a possibility to consider for large lot industrial use, though it may not have adequate access to major roads.

The interior of the property is most suitable for residential uses, with natural area protection for habitat areas. The size and undeveloped nature of the property make it suitable for traditional neighborhood development. If designed appropriately and located near parks and commercial

areas, it is suitable for multifamily housing. Because it is near the urban/rural edge, fire risk mitigation strategies may be needed.

Advantages

- Large, undeveloped parcel in state ownership (Factor 1)
- Opportunities to master plan complete neighborhood/community (Factor 1)
- Generally level topography (Factor 1)
- Contiguous to UGB along west edge (Factor 1)
- Minimal barriers to transportation connectivity and minimal reliance on congested corridors (Factor 2)
- Serviceable by Avion Water Company (Factor 2)
- Good potential for wastewater service based on existing information (Factor 2)
- No significant Goal 5 resources in proximity to DSL property (Factor 3)
- Within ¼ mile of existing park (Factor 3)
- Not adjacent to irrigated, high value EFU parcels (Factor 4)

Disadvantages

- Presence of bat caves on property – protection could slightly reduce the buildable acres on property; caves could be incorporated into park/open space (Factor 3)

The "Elbow"

This area is adjacent to an opportunity area inside the UGB identified for significant new residential development. 27th Street / Knott Road forms the eastern and southern edges of this area. On the far side of 27th Street / Knott Road are resource lands and a county landfill. An existing school and undeveloped park land lie along the west side of 27th Street. There is little other existing development in this area – a few businesses and a handful of homes.

Suitability

27th Street / Knott Road provide easy access to Highway 97 to the south, making this area a candidate for a variety of employment uses. It is adjacent to residential areas inside the current UGB, and could also be suitable for a variety of residential uses, including traditional neighborhoods on the larger properties and multifamily housing if sited near amenities. Because it is near the urban/rural edge, fire risk mitigation strategies may be needed.

Advantages

- Relatively large parcels (generally +10 acres), including some with minimal to no improvements (Factor 1)
- Opportunities to master plan (Factor 1)
- Generally level topography (Factor 1)
- Contiguous to the UGB along west edge (Factor 1)
- Few barriers to transportation connectivity and minimal reliance on congested corridors (Factor 2)
- Serviceable by Avion Water Company (Factor 2)
- Rated good for wastewater service – proximity to SE interceptor (Factor 2)
- Close proximity to existing school and park-owned land (Factor 3)

Disadvantages

- Some smaller parcels and higher value improvements interspersed with larger parcels (Factor 1)
- Proximity to landfill and mining site (Factor 3)
- Proximity to high-value irrigated lands south of Rickard/Knott (Factor 4)

The "Thumb" and surrounding properties

"The Thumb" (the Ward property), has two access points to Highway 97: via Knott Road with a full access interchange and via China Hat Road, which is "Right-In Right-Out" only. The northwest corner of the Ward property is bisected by a railroad right-of-way. This is the site of the "Old Back Nine" golf course, and there is no existing development. To the northeast, across China Hat Road, are residential subdivisions and a golf course; to the south, across Knott Road, are resource land and another golf course subdivision; to the west, across Highway 97, is Deschutes River Woods. The property serves as part of the southern gateway to Bend.

This subarea also includes the "Baney" property, which lies west of Highway 97 and just south of the existing UGB, and property owned by the SJR Trust along Woodside Road south of Knott Road and adjacent to the existing UGB (shown in blue on Figure 1).

Suitability

The full interchange makes the Ward property suitable for employment uses. Its easy access to and visibility from Highway 97 makes it suitable for large-scale commercial or industrial uses. At 300+ acres, there is opportunity for a wide range of uses, including traditional neighborhood residential development. The northeastern side abuts existing residential areas; this portion may be more suitable for residential development or local-serving commercial.

The Baney property has only right-in/right-out access to Highway 97 via Ponderosa Street, which makes it less suitable for large-scale employment uses, though a limited amount of commercial development may be appropriate. It abuts existing subdivisions to the north and rural residential areas to the south, making it potentially suitable for residential uses.

The SJR Trust property on Woodside Road is about 25 acres that is bisected by an existing street. It is adjacent to existing subdivisions and a surface mine. With indirect access to major roads and little visibility, it is primarily appropriate for residential uses, though buffers may be needed for the adjacent mine site.

Advantages

- Medium to large, mostly undeveloped parcels with single owner (Factor 1)
- Generally level topography (Factor 1)
- Opportunities to master plan larger properties (Factor 1)
- Contiguous with existing UGB (Factor 1)
- Minimal barriers to transportation connectivity and minimal reliance on congested corridor east of Highway 97 (Factor 2)
- Not located in close proximity to Forest or High Value EFU zoned land (Factor 4)

Disadvantages

- May require pumping by Avion to serve with water (Factor 2)
- Moderate barriers to transportation connectivity for Baney property (Factor 2)
- Proximity to Drinking Water Protection Areas (DWPA) (Factor 3)
- Located more than ½ mile from existing schools & parks (Factor 3)
- SJR Trust property within Surface Mining Impact Area (Factor 3)

.

URBAN GROWTH BOUNDARY REMAND
MAKING BEND EVEN BETTER

APPENDIX D:

Table 1 Goal 14 Factors (Stage 2 indicators and Stage 4 performance measures)

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 Factor 1 Maps*	**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.). • **Reliance on Congested Corridors:** Consideration of key congested highway corridors based on the recently completed Bend MPO MTP. Using the Bend 2040 travel demand model, identify which exception lands have a higher reliance on a congested corridor. • **System Connectivity**: Consideration of whether the existing major roadway network meets ideal grid-spacing (e.g.,	**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**

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**
one-mile spacing for arterials and half-mile spacing for collectors). Rank exception areas with a more subjective approach based on ability to extend collectors into the study area. Also consider if subareas in the study area are adjacent or near well connected streets inside the current UGB. *See Factor 2 Maps for Transportation*	• 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 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	**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

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**
See Factor 2 Map for Water • **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.*	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 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 Sanitary Sewer Map*	**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

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**
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. *See Factor 2 Maps for Stormwater* • **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. *The project team/TAC recommends consideration of this indicator under Factor 3 base mapping.*	**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
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 (floodplains) • Proximity to existing or planned parks, trails, elementary schools • Proximity to irrigation districts, irrigated lands and canals in study area	**Analysis Tool: Envision** • Development (acres, number of housing units, number of jobs) in areas where Goal 5 resources are present • Development and cost (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)

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**
• Presence of water quality limited streams (303d) in study area	• 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 (irrigated) *See Factor 4 Maps*	**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 E:

Comment Log of Public Testimony

Appendix E: Comment Log of Public Testimony

June 19, 2015

Source of Comment	Summary of Comment	Project Team Response
Curt Baney, letter dated 6/5/15	Consider including 38 acres (RR-10 exception land) abutting the south side of the UGB and the west side of Hwy 97 in the UGB for a mixed use project. The property scored well in the Stage 2 mapping.	38 acre property included in Scenario 2.1
Carl Hopp, Attorney for Pac West Development, LLC, letter dated 6/8/15	Consider including 36.39 acre lot at 21455 East Hwy 20 (a small portion of which is UAR-10 exception land, the remainder being EFU land) in the UGB. Client is ready to move forward with development of affordable housing.	The project team does not recommend including resource land in any of the UGB scenarios because there is more than enough suitable priority exception land available to meet identified land needs to 2028.
David Peterson, Attorney for Summit Accommodators Liquidating Trust, letter dated 4/30/15 with attachments	Consider including 33.8 acres of land (EFU) located at 63210 Cole Road, northeast of Bend, in the UGB. Keep open mind about potential suitability of resource-zoned land for the UGB expansion.	The project team does not recommend including resource land in any of the UGB scenarios because there is more than enough suitable priority exception land available to meet identified land needs to 2028.

Source of Comment	Summary of Comment	Project Team Response
Rick Lane, John & Beth Short, Drew Bledsoe, emails dated 6/8/15, 6/9/15 and 6/10/15	Group of property owners requests inclusion of 240-acre “Butler Market Village” study area (exception lands) in the UGB.	240 acre “Butler Market Village” study area included in Scenario 1.1
Tia Lewis for Coats Revocable Trust, letter dated 6/8/15	Tia presented written and oral testimony. The Coats family seeks to have approximately 416 acres of its land together with the 33 acres owned by the School District included in the UGB for urban development for mixed uses shown on Exhibit A map (UAR exception lands).	Approximately 165 acres included in Scenario 3.1, with balance of 416 acres included in Supplemental Analysis Area for infrastructure modeling.
Steve Shropshire, attorney representing Swalley Irrigation District, letter dated 6/1/15 and PPT presentation	Provided short presentation on the concerns of SID. SID uses a hub and spoke system to deliver water. The biggest concerns for the district are coordination, financial and operational impacts on the delivery system going north from Bend.	Scenarios 1.1, 1.2 and 1.3 propose variable acres for expansion north of the UGB. The project team will continue to coordinate with Swalley and other irrigation districts to evaluate the impacts of the UGB scenarios under Factors 3 & 4 of Goal 14.

Source of Comment	Summary of Comment	Project Team Response
Myles Conway, representing Rio Lobo, oral testimony on 6/9/15	Presented oral testimony regarding Rio Lobo ownership of 374 acres south of Shevlin Park Road zoned UAR. He recommended consideration of all highest-quartile dark green land.	Scenario 3.1 includes approximately 160 acres of Rio Lobo ownership west and south of the existing UGB. The remainder of the 374 acres are included in the Supplemental Analysis Area.
Ed Elkins, oral testimony on 6/9/15	Ed identified himself as the owner of Gopher Gulch Ranch (north of existing UGB and east of Deschutes River) and provided oral testimony. He questioned how properties were rated in the Stage 2 mapping and recommended documenting how statutory requirements are being met.	Scenario 3.1 includes lands just east of the Gopher Gulch area, but does not include lands listed as under ownership of Ed Elkins. The 371 acres of Gopher Gulch are included in the Supplemental Analysis Area.
Joe Emerson, oral testimony on 6/9/15	Joe provided oral testimony and commented that the principal of high fire risk around the UGB is not a good one. He cited the Two Bulls fire as an example of a fire that is very different from a grass fire.	The project team will be drawing on the on-site assessments of proposed UGB scenario lands by a group of fire experts (including Bend Fire Chief, County Forester, fire managers with USFS, BLM). The site visits will include consideration of variables of topography, fuel types, and management activities on lands within ¼ mile. The project team will incorporate the site-specific assessments into the Goal 14 (Factor 3) evaluation of scenarios.
Wayne Purcell, oral testimony on 6/9/15	Wayne provided oral testimony. He commented that consideration of larger expansion to the NE could help meet need for affordable housing. He thought the scenarios involved too many large parcels – too many “eggs in one basket.”	Scenario 1.1 focuses on a larger proposed expansion in the “northeast edge” subarea.

Source of Comment	Summary of Comment	Project Team Response
Steve Jorgensen, representing BMPRD, oral testimony on 6/9/15	Steve presented oral testimony and commented that the TAC should look for opportunities for trail connections. He specifically referenced the 1995 Trails Plan that identified potential trails on the Coats' property that were very important from the District's perspective. He also noted that the district requests that the park-owned site in "the Elbow" be included in the UGB so it can be traded for other lands that are better suited or needed for a park.	The park-owned site in "the Elbow" is included in Scenario 2.1, and for modeling purposes it is assumed to have non-park uses. Portions of the Coats property are included in Scenario 3.1, with the full concept plan area extending to the creek and river included in the Supplemental Analysis Area.
Tim Elliott, representing Anderson Ranch, oral testimony on 6/9/15	Commented on the Goal 14 analysis. Land priority issue a primary issue on remand. Consider the first priority lands first.	Roughly 15 acres of Anderson Ranch (in the West Area) is included in Scenario 1.1, and the full site (roughly 28 acres) is included in Scenario 3.1.

APPENDIX F:

UGB Expansion Scenario Assumptions and Development Type Details

Memorandum

June 19, 2015

To: Urban Growth Boundary and Growth Scenarios Technical Advisory Committee
Cc: Project Team
From: Angelo Planning Group Team
Re: UGB Expansion Scenario Assumptions and Development Type Details

OVERVIEW

Development Types

The Urban Growth Boundary (UGB) Expansion scenarios were created using "development types" that generally represent Bend's General Plan designations. The development types contain various assumptions calibrated by the project team with the best available information and with Technical Advisory Committee (TAC) direction at various stages. Development type assumptions include:

- A mix of specific building types (using prototype buildings reviewed by the Residential and Employment TACs in August, 2014)
- Parking requirements
- Streets, neighborhood parks, and other set-asides
- Net residential density and net job density
- Rate of redevelopment

Development types were first calibrated to observed densities and land use mix in Bend's general plan designations to create the "Base Case" scenario, and then modified as needed to reflect the estimated effects of proposed efficiency measures. These modifications were documented Residential TAC and Employment TAC meetings during Phase 1 of the project, and will continue to be evaluated as committees further examine efficiency measures in Phase 2.

Development types are assigned to lands through "painting" the map. 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. Each buildable acre of land where a development type is applied is assigned a percentage of each of the building types as well as the specified percentage set asides that comprise the development type.

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.

Buildable Land

The scenarios take into account development constraints and existing development outside the UGB. Development constraints include:

- Floodplains
- Slopes over 25%
- Current surface mining permits
- Parks/school district ownership
- Existing development

For those parcels with existing development, a quarter of an acre per lot was identified as developed, with the remainder considered vacant and buildable.

The buildable land inside the UGB was identified as described in the February 6, 2015 memorandum titled “Draft Bend UGB Buildable Lands Inventory” that was distributed to the Residential TAC.

Lands identified as having development constraints do not generate growth in the model, even if they are painted with a development type; the constrained area is removed from the buildable land to which development assumptions are applied.

DEVELOPMENT TYPE DESCRIPTIONS

Name	Description	Residential Mix	Employment Mix	Res/Emp Density[1]	Additional Information
RL	Low Density Residential	Mostly large lot single family, small amount of duplex	None	~2 units/net acre	Reflects possible efficiency measures related to duplex/triplex
RS	Std. Density Residential	Mostly single family, various lot sizes; small amount of duplex/triplex and cottage homes	Tiny bit of office	~7 units/net acre	Reflects possible efficiency measures related to cottage homes, duplex/triplex and ADUs
RS Hillside	Std Density Residential – Clustered Development	Mostly single family, various lot sizes; small amount of duplex/triplex and townhomes	Tiny bit of office	~3 units/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	Mostly single family, various lot sizes but emphasizing small lots; small amount of duplex/triplex and townhomes	Tiny bit of office	~8 units/net acre	Reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)
RS-CCR	RS with Development Restrictions	All single family	None	~2 units/net acre	A designation for platted lots covered by CC&Rs that limit lot divisions to ensure just one unit per lot is projected
RM	Medium Density Residential	Mix of small-lot single family detached, single family attached, and multifamily housing	Small amount of retail and office	~15 units/net acre	Reflects possible efficiency measures related to lot dimensions, setbacks, and cluster housing
RM Master-plan	RM for large master-planned areas	Mix of small-lot single family detached, single family attached, and multifamily housing	Tiny bit of office	~21 units/net acre	Reflects possible efficiency measures affecting master plan requirements for large sites (over 20 acres)

[1] Densities are approximate and subject to change with refinement of efficiency measures.

Name	Description	Residential Mix	Employment Mix	Res/Emp Density[1]	Additional Information
RH	High Density Residential	Mostly multifamily with some single family attached	Small amount of retail and office	~28 units/net acre	Reflects possible efficiency measures including prohibiting new single family detached housing and adjustments to setback and coverage requirements
MDOZ	Medical District Overlay Zone	Some multifamily housing	Primarily office (includes medical)	~22 jobs/net acre	Captures mix of uses allowed by the MDOZ
CC	Convenience Commercial	None	Mix of retail and office plus a tiny amount of industrial	~16 jobs/net acre	Generally intended for community-serving commercial areas adjacent to residential areas
CC2	"Walkable" Convenience Commercial	None	Mix of retail and office	~22 jobs/net acre	A more dense and walkable version of the Convenience Commercial (CC) designation; reflects possible efficiency measures reducing parking ratios for certain uses
CL	Limited Commercial	Tiny amount of multifamily housing	Mix of retail and office plus a tiny amount of industrial	~20 jobs/net acre	Intended for uses serving tourists as well as residents, along highways and in new commercial centers
CG	General Commercial	Tiny amount of multifamily housing	Primarily retail with some office and a tiny amount of industrial	~13 jobs/net acre	Intended for larger sites along major roads and businesses with a larger service area
CB	Central Business District	Tiny amount of multifamily housing	Primarily office with significant retail and some public employment	~118 jobs/net acre	Intended for the downtown with storefront/mixed use character; reflects possible efficiency measures including increasing building heights

Name	Description	Residential Mix	Employment Mix	Res/Emp Density[1]	Additional Information
MR	Mixed Riverfront	Small amount of single family and multifamily housing	Primarily office with some retail and industrial	~16 jobs/net acre	Intended for creative redevelopment of mill site properties adjacent to the Deschutes River; reflects possible efficiency measures reducing parking ratios for certain uses
MU1	Neighborhood Mixed Use	Mostly multifamily housing, some single family attached	Mix of retail and office	~18 units/net acre + ~33 jobs/net acre	New neighborhood-scale mixed use development type – relationship to existing plan designations TBD
MU2a	Urban Mixed Use	Mostly multifamily housing, some single family attached	Mix of retail and office	~46 units/net acre + ~37 jobs/net acre	New urban-scale mixed use development type – relationship to existing plan designations TBD
ME	Mixed Employment	None	Mostly office and industrial with some retail	~12 jobs/net acre	Intended to provide a broad mix of uses that offer a variety of employment opportunities
IP	Industrial Park	None	Mix of industrial and office	~25 jobs/net acre	Does not exist as a zone (only a plan designation)
IL	Industrial Light	None	Mix of industrial and office with a small retail component	~11 jobs/net acre	Intended to provide for heavier commercial and light industrial uses with easy access to collector and arterial streets
IG	Industrial General	None	Primarily industrial with some office and a small retail component	~16 jobs/net acre	Intended for light and heavier industrial uses
LL Indust-rial	Large Lot Industrial	None	N/A[2]	N/A	Special designation to protect land for large lot industrial uses (50+ acre sites) to meet the identified special site need

[2] Large lot industrial users are anticipated to be targeted sector major employers, outside the employment forecast need. This was treated as a special site need rather than being part of the employment projections.

Name	Description	Residential Mix	Employment Mix	Res/Emp Density[1]	Additional Information
PF	Public Facilities	None	Primarily public with tiny amounts of retail and office	~14 jobs/net acre	Intended to provide area for buildings and facilities that are publicly owned and operated
Inst	Institutional	None[3]	Public[4]	~25 jobs/net acre	Intended to reflect COCC campus
Univ	University	N/A[5]	N/A[6]	N/A	Intended to reflect planned university campus – OSU Cascades
School	Public Schools	None	N/A[7]	N/A	Used to identify existing and potential future public K-12 school facilities (not including administrative buildings)
Park	Community Parks	None	None	N/A	Identifies planned or potential future community parks

[3] Assumes no increase in student housing at COCC.

[4] Growth in employment at the existing COCC campus is counted as part of the public job employment forecast.

[5] Future student housing at OSU Cascades is not counted towards meeting the identified housing need– this was treated as a special site need rather than through the housing need projections.

[6] Future employment at OSU Cascades is outside the employment forecast need – this was treated as a special site need rather than through the employment projections.

[7] School-based employment in actual school facilities is excluded from the employment forecast need. The need for new school facilities is driven by school service areas and population growth rather than by the need to accommodate future employment.

SET ASIDES

In order to account for right of way, neighborhood parks and trails, and "other uses" such as churches, golf courses, etc. that may occupy land in a variety of plan designations but are not employment or housing uses, the development types also include set-asides that convert from gross vacant buildable acres to net residential and employment acres. The assumptions for these set-asides are documented below.

Right of Way

As part of the analysis for the 2008 UGB expansion effort, the City of Bend calculated the amount of land used for right of way city-wide, across all plan designations, at 21%. The "development types" in Envision Tomorrow include some variation in right of way set asides based on the nature of development typical of a given plan designation (for example, industrial development typically has less land used for roads than dense single family neighborhoods), but are calibrated to approximate this overall amount of right of way.

Parks and Trails

Parks are accounted for in two different ways in Envision Tomorrow: future Community Parks are identified with their own development type and an approximate location and size, while neighborhood parks and trails are accounted for through set-asides in certain development types (described below).

The locations and sizes of potential future community parks will be further vetted with Bend Parks and Recreation District (BPRD) as part of the evaluation process for the scenarios so that the ultimate land need for parks is calibrated to their evaluation of the needs to serve growth inside and outside the UGB.

Neighborhood parks and trails are built into residential and mixed use development types, on the assumption that they will primarily be built in those areas. BPRD has adopted "Level of Service" (LOS) standards for neighborhood parks and trails that specify a target number of acres or miles to be available per 1,000 service population. In their 2012 Parks Master Plan, BPRD set a neighborhood park standard of 1.5 acres/1,000 population. However, their previous standard was 2.0 acres/1,000 population, and in discussions with city staff, BPRD indicated that they may want to revert to the higher standard in planning for higher density expansion areas. BPRD also has an adopted trails standard of 1 mile/1,000 population. Using an assumed 20' right of way for trails, this translates to 2.4 acres/1,000 population for trails.

Set asides in the development types have been calibrated to provide for a total of 4.1 acres of neighborhood parks and trails, combined, per 1,000 of new population – halfway between BPRD's adopted neighborhood park standard of 1.5 acres/1,000 population and the 2.0 acres/1,000 population they indicated they may want to use for higher density expansion areas, plus 2.4 acres/1,000 population for trails. The set asides range from 1% of land in mixed use designations and RL, to 5% in basic RS, RM and RH designations, to 8% in the "Hillside" and

"Masterplan" versions of RS and RM, on the theory that those kind of developments are more likely to be required to dedicate parks and trails.

Schools

Public K-12 schools are accounted for in Envision with their own development type, similar to community parks. Approximate sizes and locations of future schools have been "painted" in the scenarios; however, the locations and types of schools identified will be further refined based on coordination with Bend-La Pine Schools, which is currently underway.

Other Lands

As part of the analysis for the 2008 EOA and HNA, the City of Bend calculated the amount of land used for "other lands" city-wide, including uses such as churches, fraternal organizations, golf courses and other uses that are neither housing nor employment (schools and parks are addressed separately as discussed above). Overall, 12.8% of the city's land area was found to be dedicated to these uses. This percentage set aside is applied to development types representing all plan designations in Envision Tomorrow.

REDEVELOPMENT

Each "development type" addresses redevelopment by applying its growth assumptions to a specific percentage of land that is already developed – called the "redevelopment rate". The model applies the appropriate density and mix assumptions to the redeveloped fraction of the land. It does not specify which land exactly is redeveloped, only how much of it is redeveloped overall. This percentage is set for each development type.

For residential land, redevelopment rates were set to zero across the board. This was based on a combination of the way that "vacant" and "developed" lands were identified for residential land,[8] and the fact that there has been virtually no history of residential redevelopment through tear-downs in Bend to date[9].

For employment land, the approach to identifying the overall amount of redevelopment that is reasonable to expect under "base case" (current policy and trend) conditions was documented in the November 11, 2014 memorandum titled "Recommended Redevelopment Rate for Employment Lands" that was provided to the Employment TAC. The redevelopment rates in the development types, which specify a percentage of land that will redevelop rather than a percentage of jobs that will be accommodated through redevelopment, were calibrated in the

[8] See February 6, 2015 memorandum titled Draft Bend UGB Buildable Lands Inventory. In short, residential land identified as "developed" would generally only be able to redevelop through removal of existing development. Land that can be built on without removal of the existing structure was generally coded as "vacant" even if there was development on the parcel.

[9] Based on an analysis of building permit data to identify instances where demolition of a residential structure was followed by construction of one or more residential structure(s) with more total units than were on the site previously.

base case to yield approximately the number of jobs that the more detailed redevelopment analysis suggested were reasonable. In the current scenario for growth inside the existing UGB, the redevelopment rates (percent of land area) in each development type remain the same, but more developed land has been identified for potential redevelopment, and some land has been "painted" with more intense development types and ones that may have a higher redevelopment rate. These changes have increased the number of jobs that can be accommodated through redevelopment, even without changing the assumed rate in each development type. Redevelopment rates for employment designations vary as follows:

- 4-6% for CC, CL, CG, ME, PF, and the industrial designations
- 8-10% for MR and MDOZ
- 15-25% for CB and the new mixed use development types

URBAN GROWTH BOUNDARY REMAND

MAKING BEND EVEN BETTER

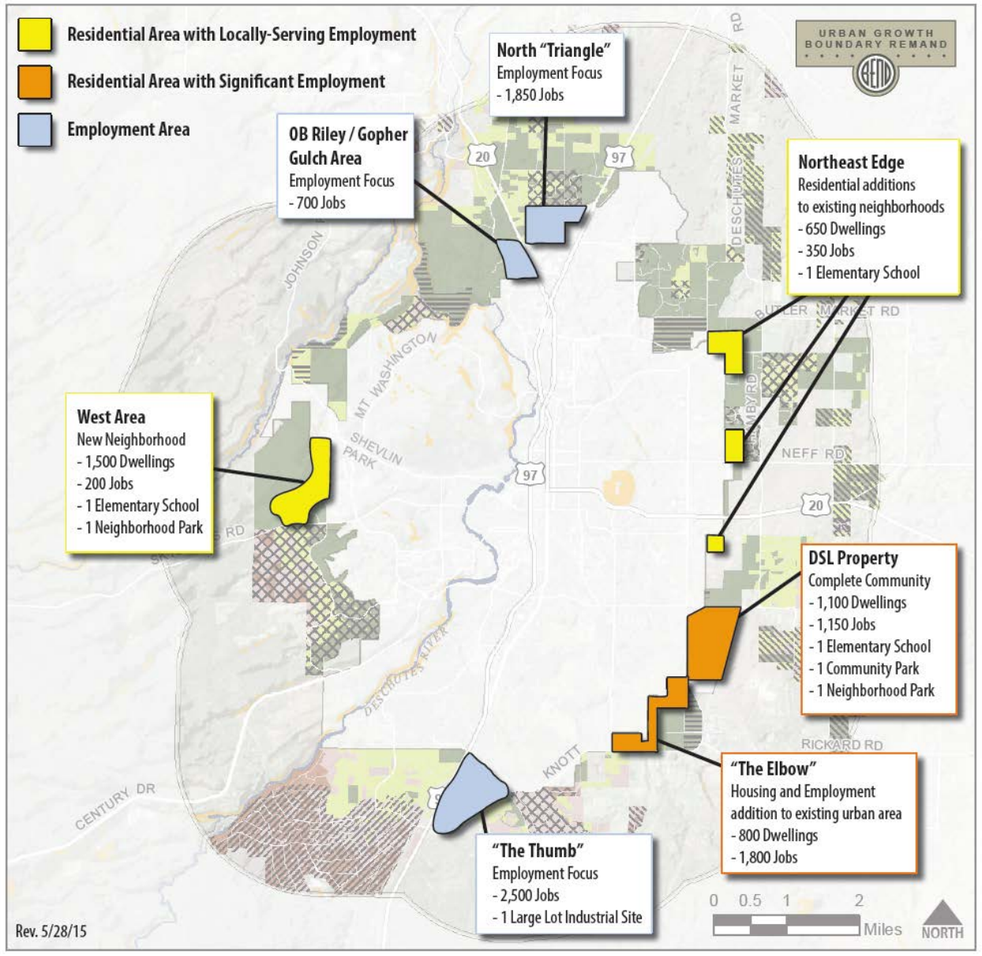
APPENDIX G:

Side-by-Side Scenarios, Original and Refined Versions

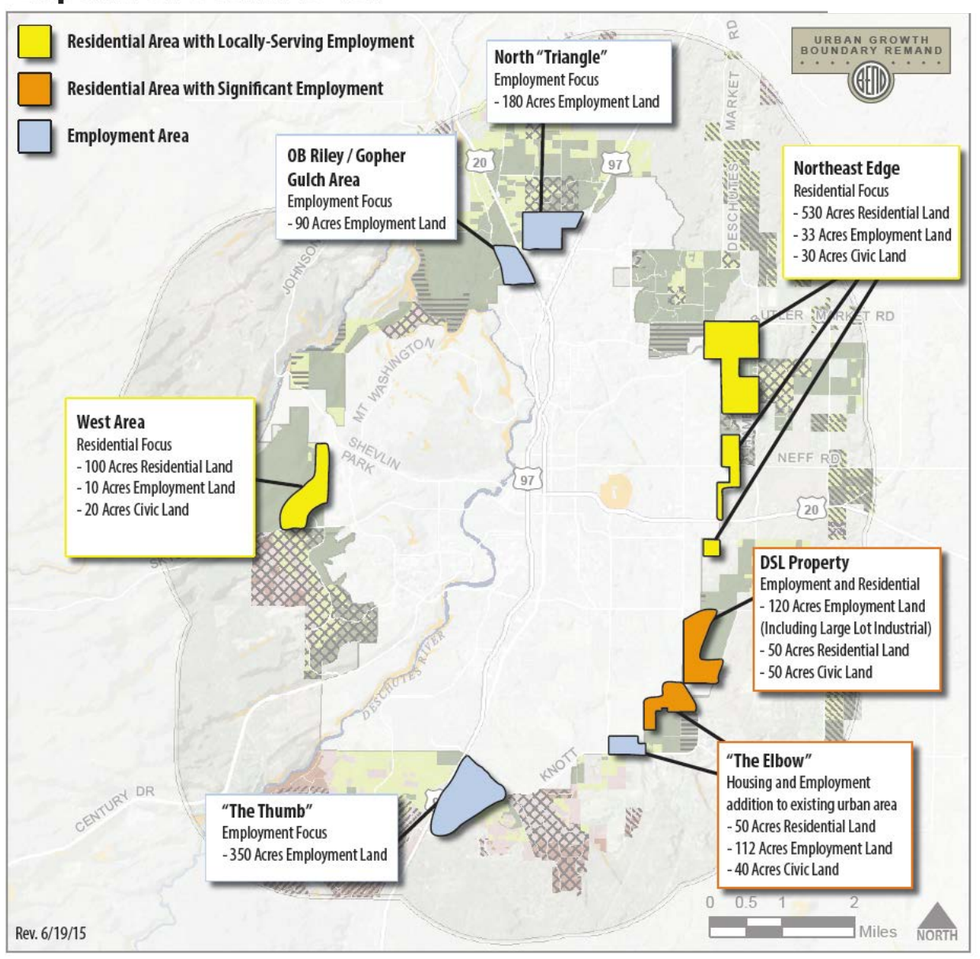
Appendix G

Side-By-Side comparisons of scenarios presented at June 9, 2015 TAC meeting and updated scenarios for June 24 TAC meeting.

Expansion Scenario 1

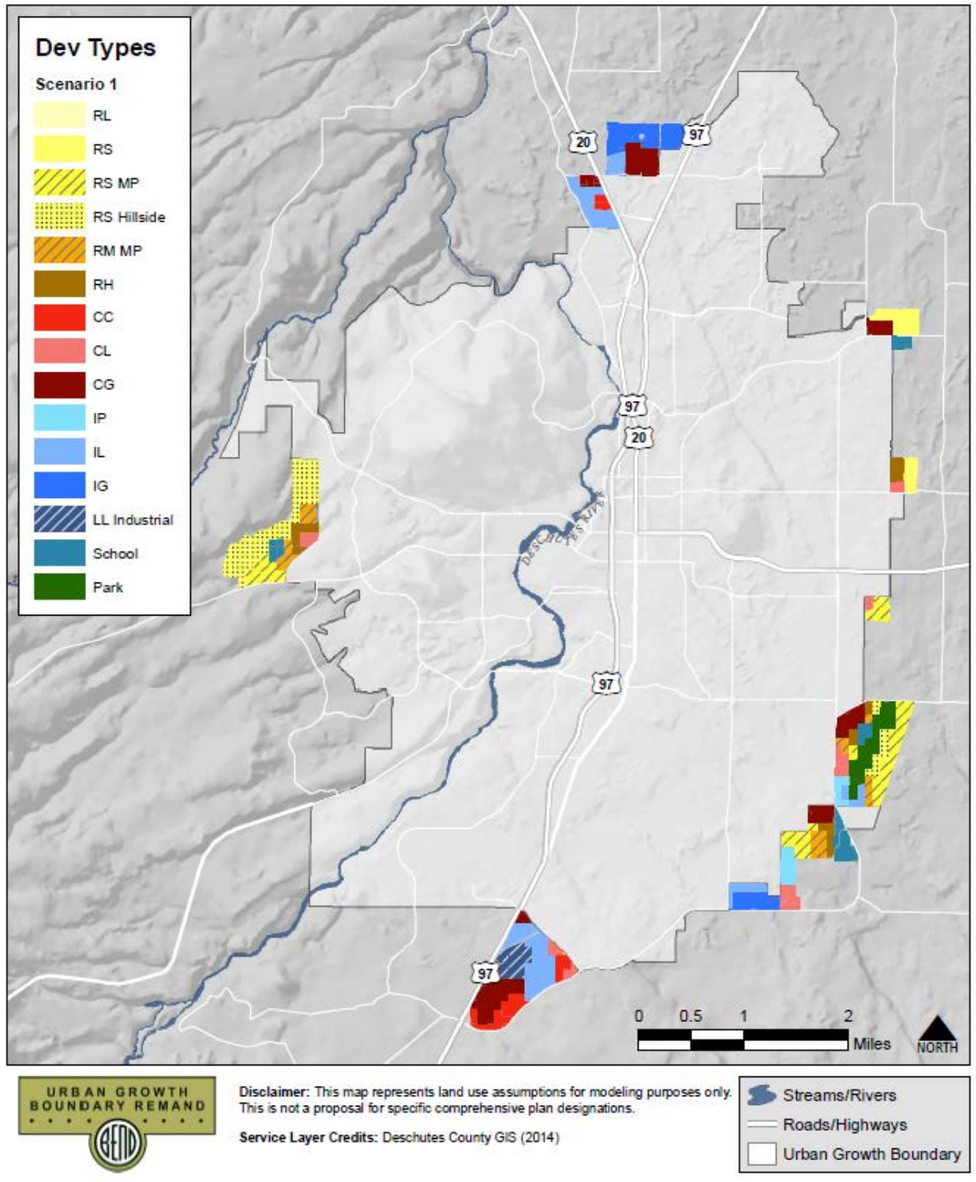


Expansion Scenario 1.1



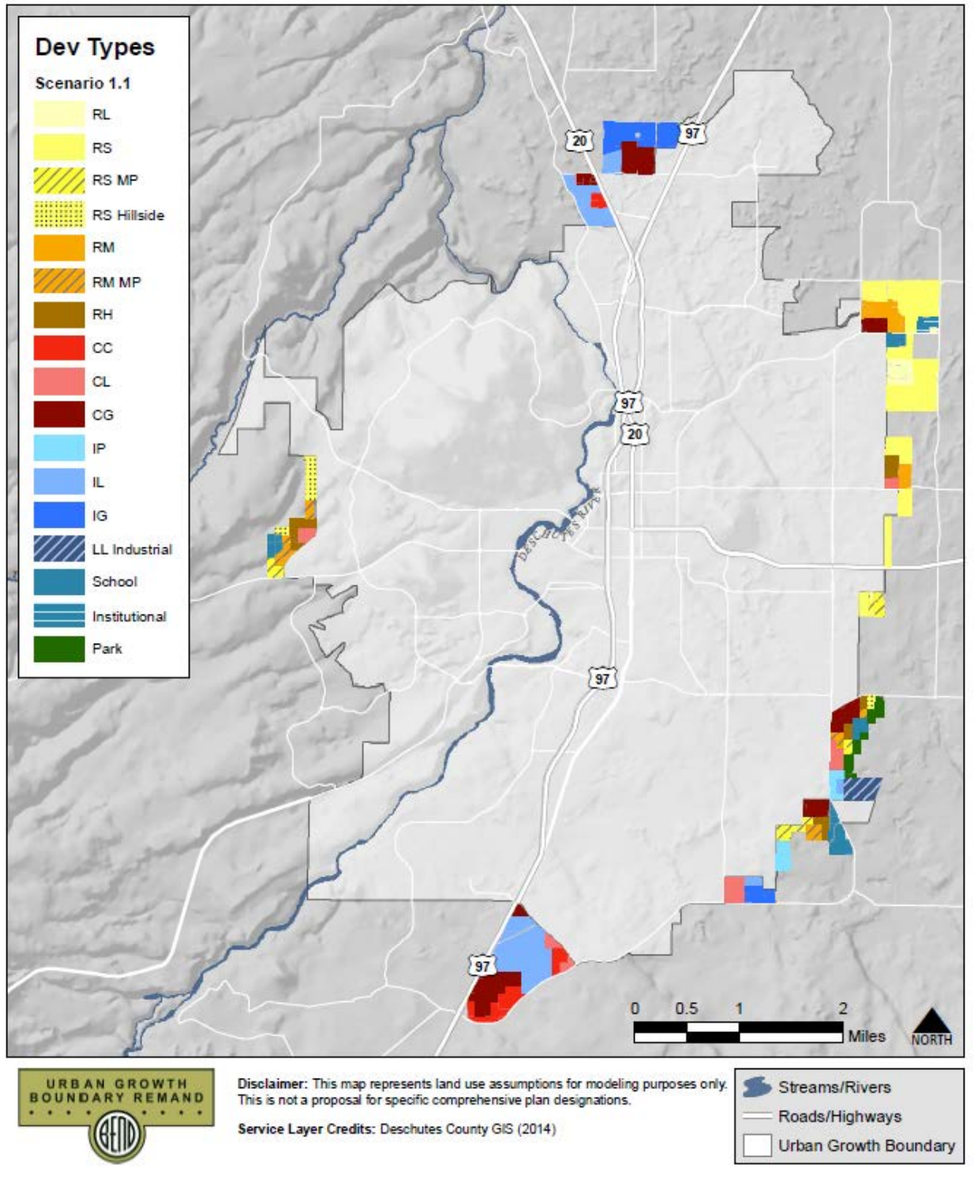
Bend UGB
Draft Expansion Scenarios

Expansion Scenario 1

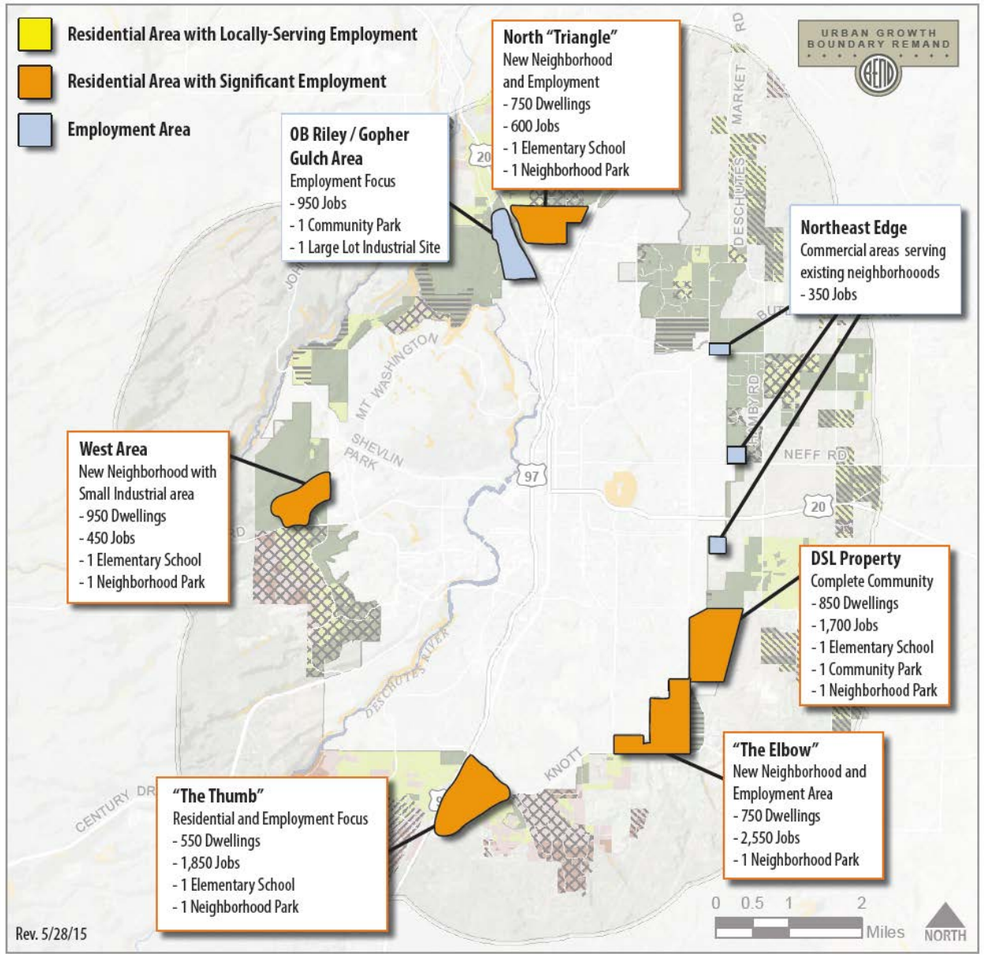


Bend UGB
Draft Expansion Scenarios

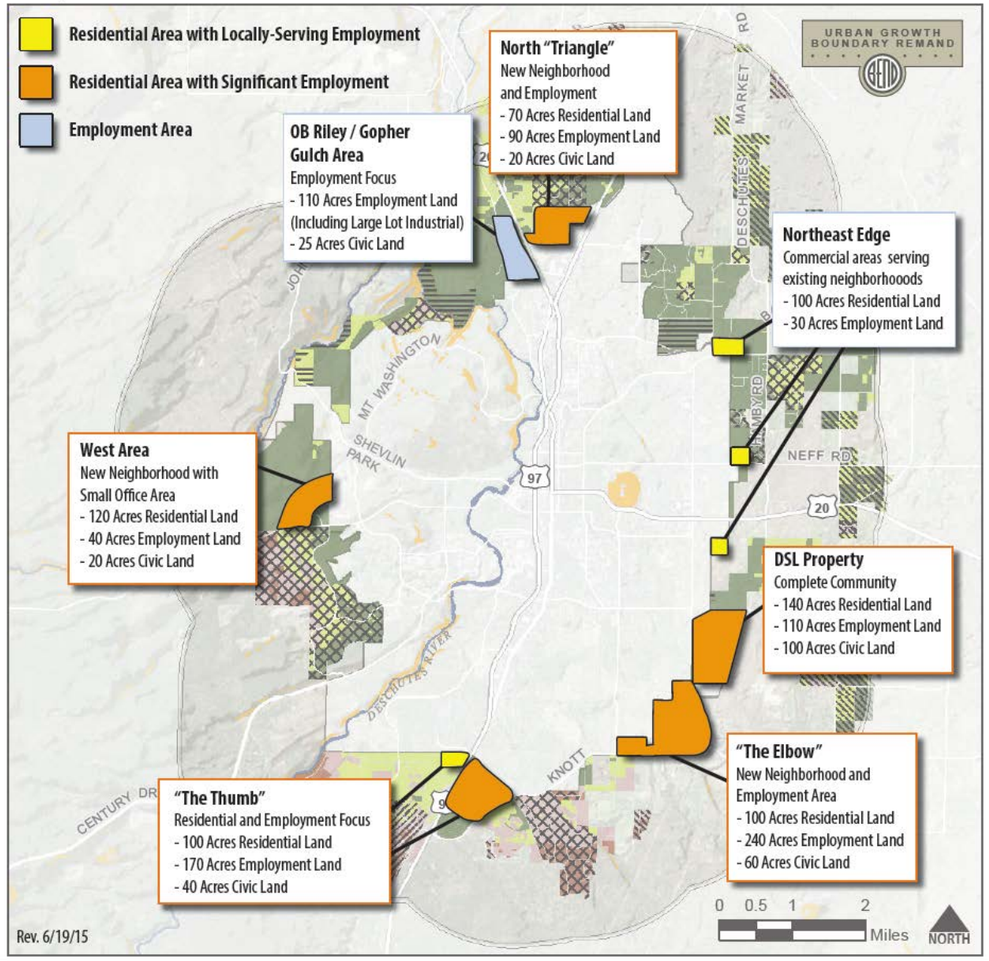
Expansion Scenario 1.1



Expansion Scenario 2

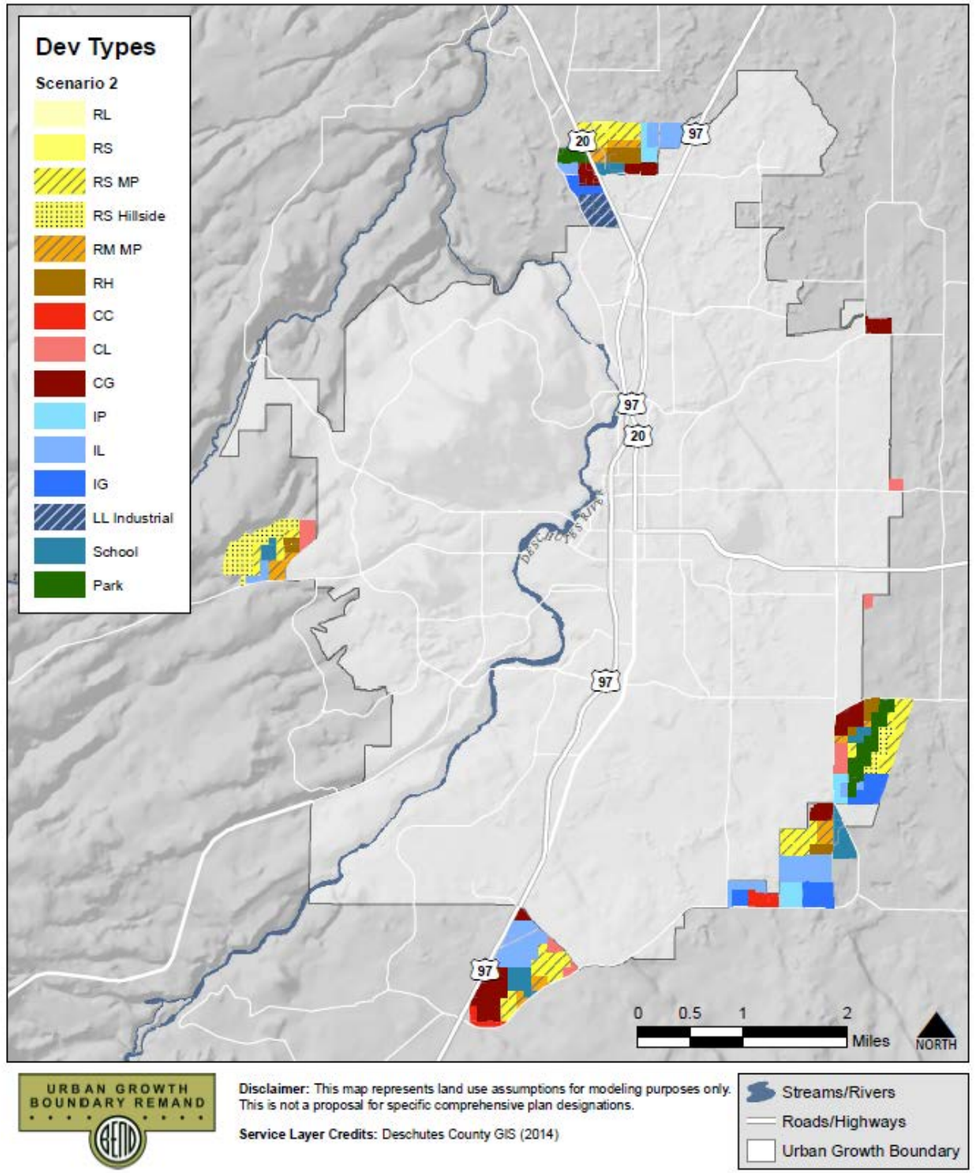


Expansion Scenario 2.1



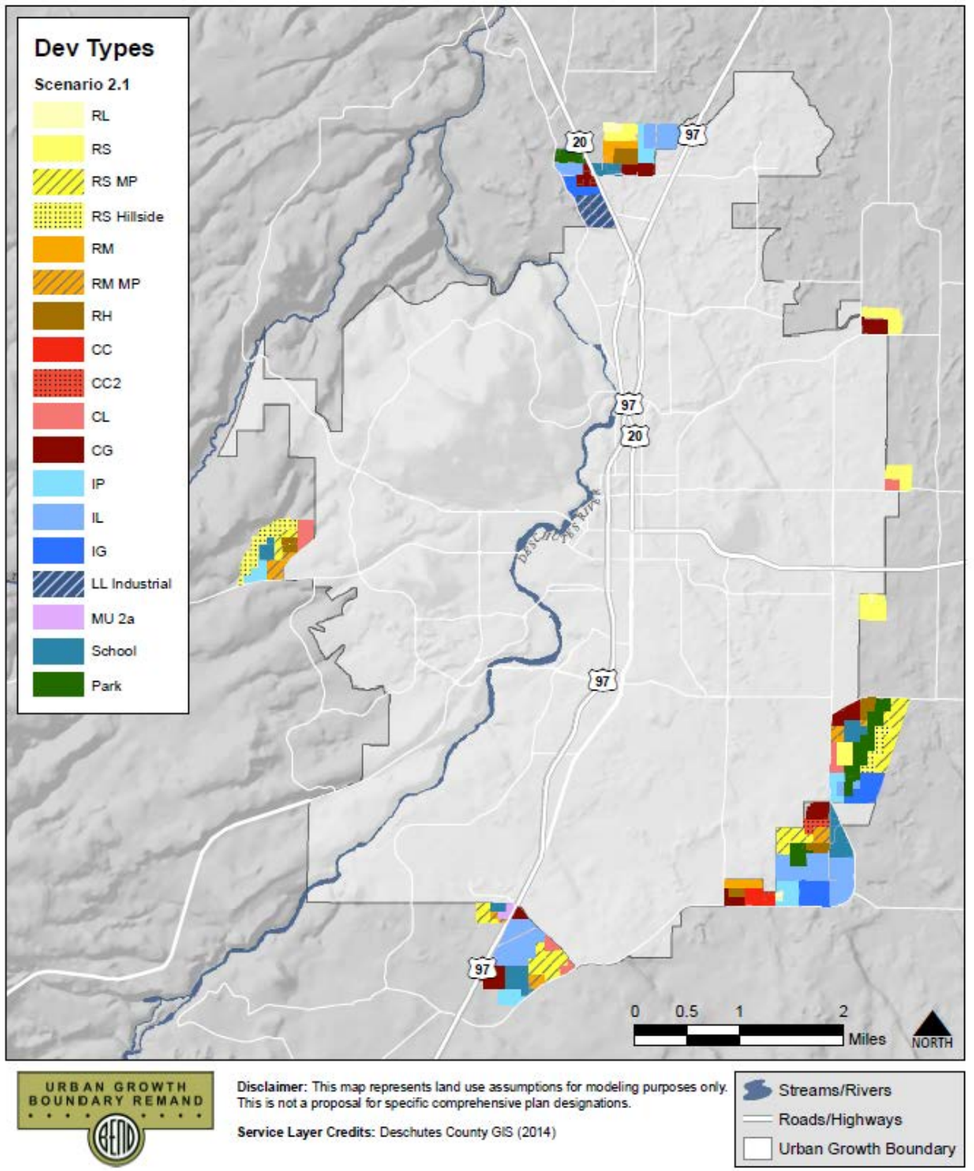
Bend UGB
Draft Expansion Scenarios

Expansion Scenario 2

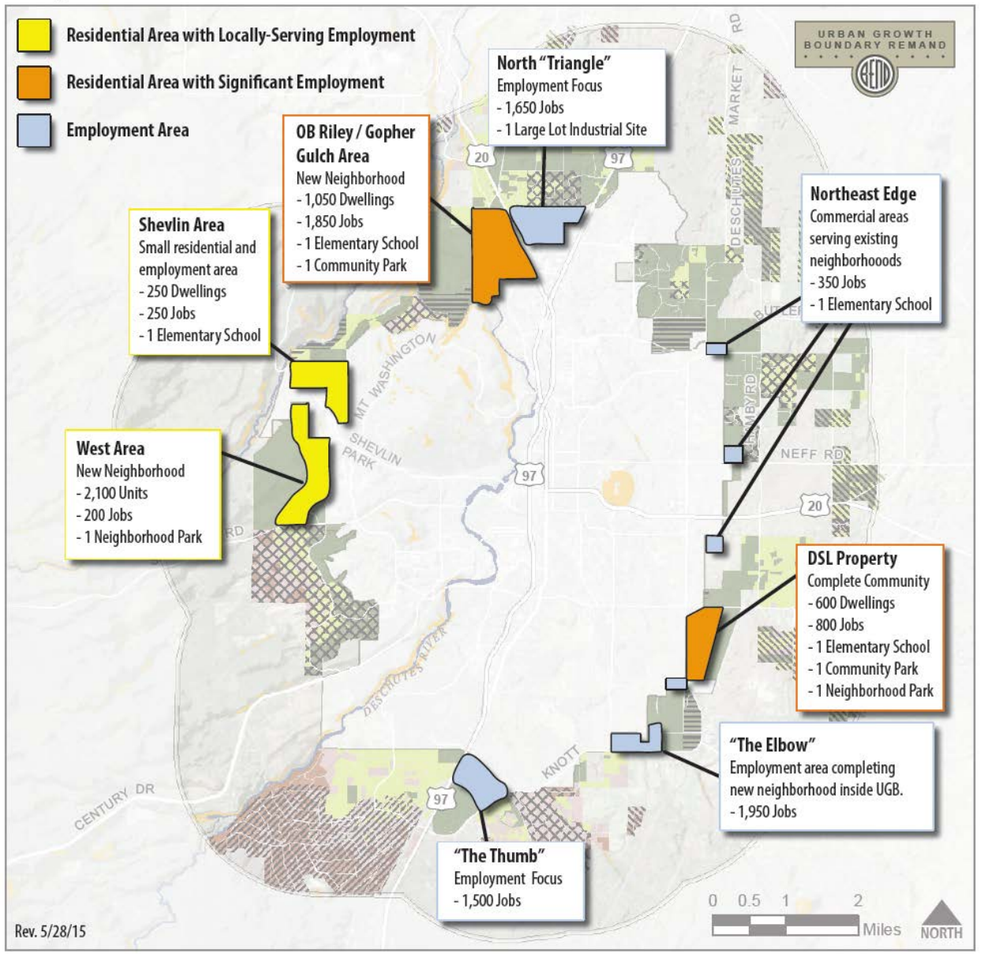


Bend UGB
Draft Expansion Scenarios

Expansion Scenario 2.1



Expansion Scenario 3



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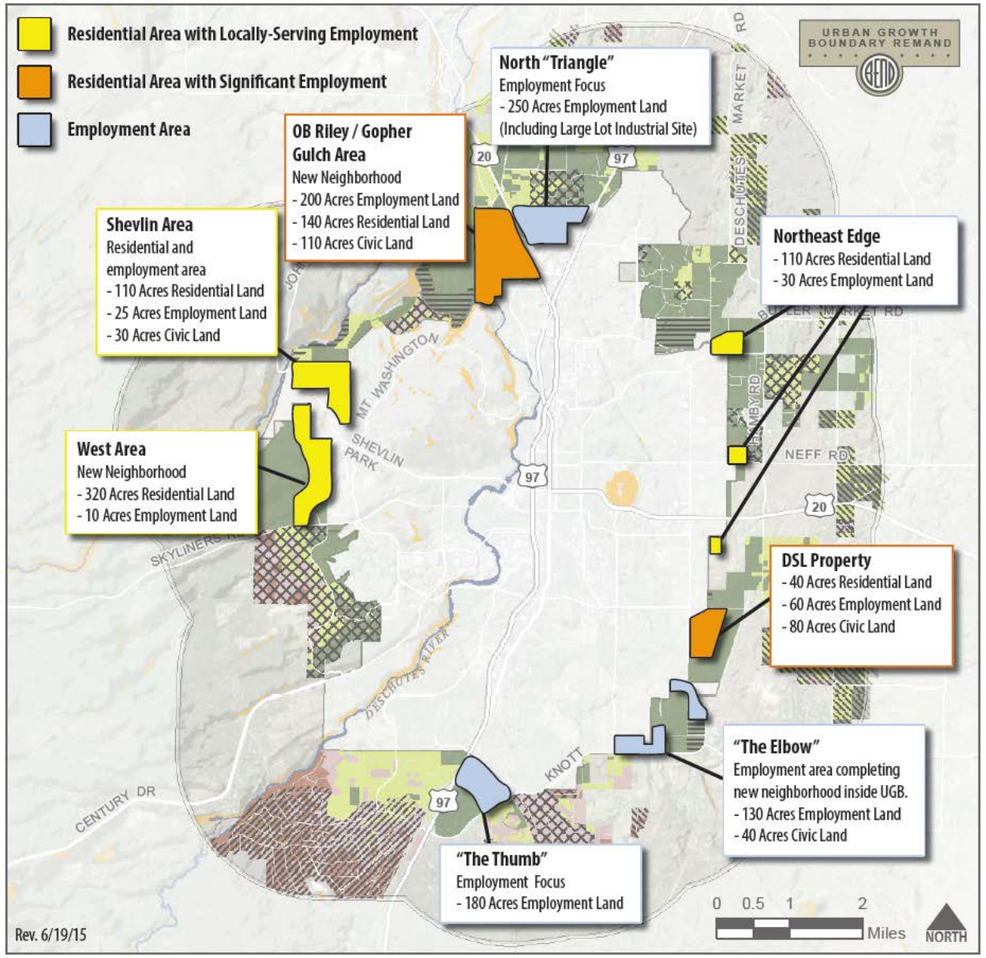
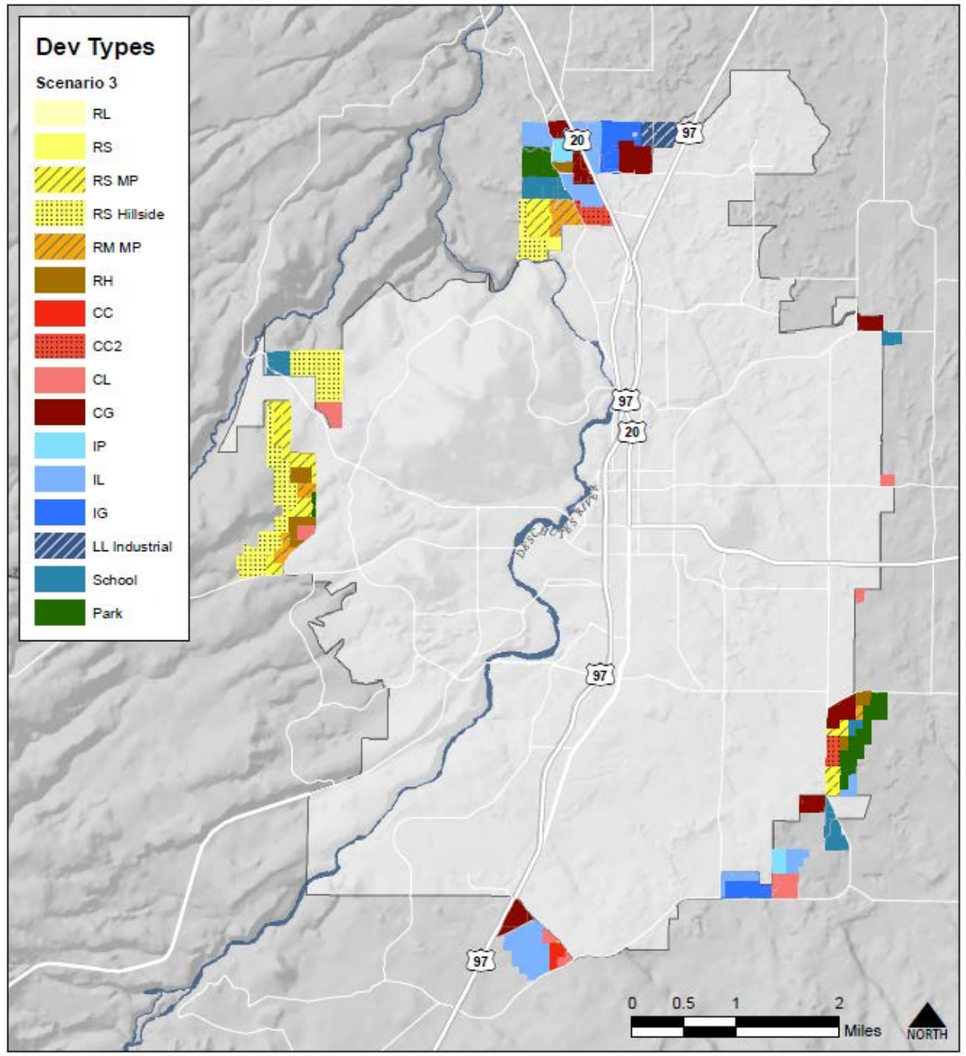


Bend UGB
Draft Expansion Scenarios

Expansion Scenario 3



URBAN GROWTH BOUNDARY REMAND

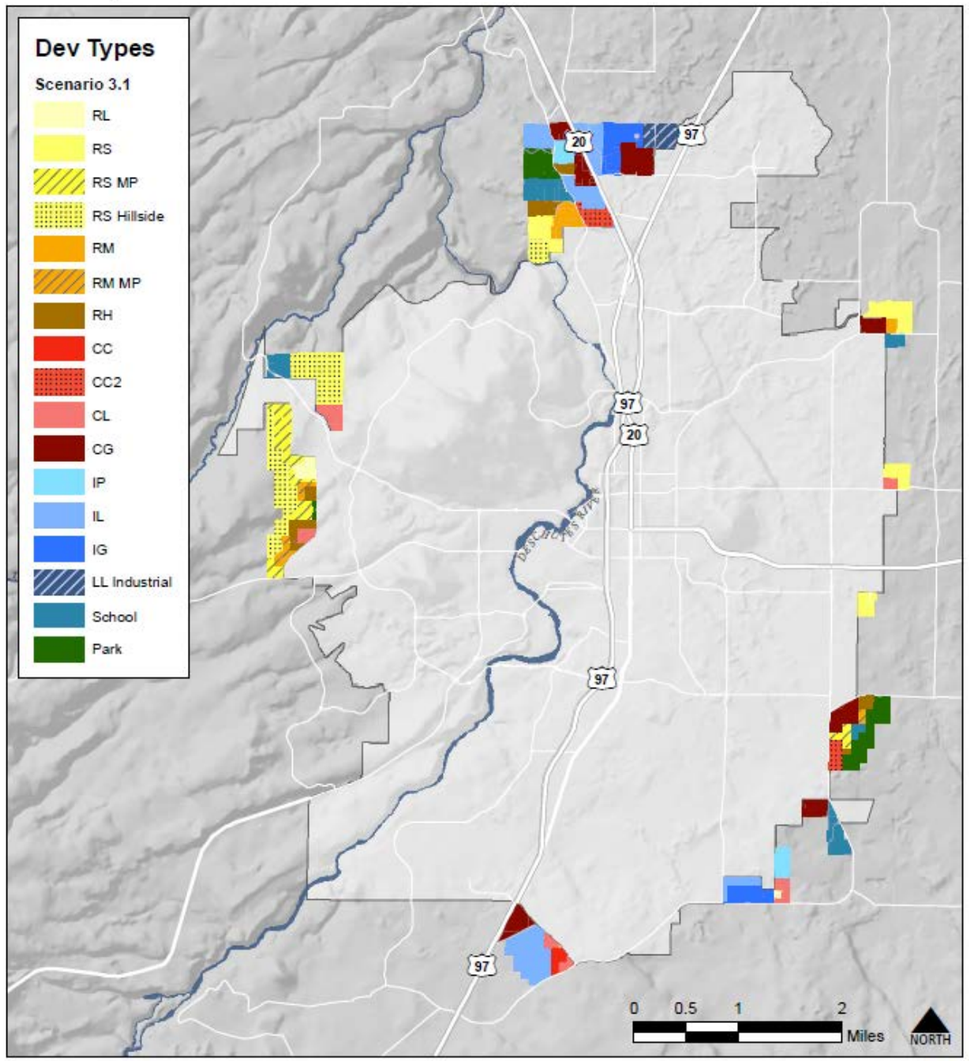
Disclaimer: This map represents land use assumptions for modeling purposes only. This is not a proposal for specific comprehensive plan designations.

Service Layer Credits: Deschutes County GIS (2014)

Streams/Rivers
Roads/Highways
Urban Growth Boundary

Bend UGB
Draft Expansion Scenarios

Expansion Scenario 3.1



URBAN GROWTH BOUNDARY REMAND

Disclaimer: This map represents land use assumptions for modeling purposes only. This is not a proposal for specific comprehensive plan designations.

Service Layer Credits: Deschutes County GIS (2014)

Streams/Rivers
Roads/Highways
Urban Growth Boundary

Memorandum

June 22, 2015

To: Urban Growth Boundary Steering Committee

From: Craig Letz, Wildfire Consultant and City Staff

Re: Wildfire Risks, Assessment, & Mitigation: Recommendations to the USC

BACKGROUND

The 2009 Urban Growth Boundary proposal did not assess fire risk. In their 2010 Remand Order, the Land Conservation and Development Commission (LCDC) told the City that it was not specifically required to examine wildfire risk but strongly suggested consideration of wildfire risk through the balancing lens of Goal 14. To that end, the City has been working to gather the best available information on risk and mitigation approaches and is using that information to make the recommendations summarized in this memo.

The recommendations below were reviewed and refined by the Boundary TAC at their June 9, 2015 meeting. A summary of the Boundary TAC's discussion on these recommendations can be found in the minutes from the June 9th meeting. The recommendations, as amended by the Boundary TAC, are presented below for the USC's consideration and approval, along with the background information presented to the Boundary TAC in support of these recommendations.

WILDFIRE RISK ASSESSMENT TOOLS

The City initially proposed using the Greater Bend Area Community Wildfire Protection Plan (CWPP) (http://www.projectwildfire.org/index.php/cwpp). The Boundary TAC had concerns with the CWPP as a tool due to outdated data and artificial boundaries for risk. In response, the City pulled together a Wildfire Focus Group, consisting of local experts on wildfire, to discuss the appropriateness of the CWPP (See attached summary). The Focus Group was asked if the CWPP is an appropriate tool to use for assessing relative wildfire risk in Bend, and whether there are there other tools that might be more effective.

Deschutes County Forester Ed Keith offered a series of maps based on West Wide Risk Assessment data (see 2013 version for the Bend area, attached), a mapping effort coordinated through the council of Western States Foresters. These maps provide a finer grained analysis of risk that is not constrained by artificial geographic boundaries (one of the Boundary TAC concerns) but that essentially supports the conclusions of the CWPP: **wildfire risk is high all around the City**. The only areas outside of Bend that are not at a high risk of wildfire are irrigated fields (e.g. pasture) or rocky areas (e.g. surface mines, pressure ridges).

The Focus Group agreed that there are many models for wildfire out there, all of which suffer from the dynamic nature of the resource, but agreed that the CWPP is the best tool to use, particularly because it is possible to dig into the assumptions and see what conclusions were used to assess the risk. In other words, risk is high all around the City but might be high in one area because of threats to structures and in another because of topography. The Fire Risk

Index provides a finer grain mapping that is not artificially constrained by parcel or other geographic boundaries to illustrate the risks presented by the CWPP.

All members of the Focus Group agreed that an onsite assessment of the actual land proposed for inclusion into the UGB would be feasible and provide valuable information to the Boundary TAC and the USC.

- ***Recommendation to USC:*** *Use the CWPP, as illustrated by the Fire Risk Index Map and the Fire History map, in conjunction with onsite assessments. Proceed to onsite assessments as described below.*

WILDFIRE RISK ASSESSMENT METHODOLOGY

Since the CWPP and West Wide Risk Assessment maps identify almost all of the potential UGB expansion areas as at high risk of wildfire, the Focus Group recommended onsite assessments to provide the Boundary TAC and USC with useful decision-making information. The Group recommended considering two different assessment tools: Firewise Community Assessment (www.firewise.org) and the Oregon Forestland-Urban Interface Fire Protection Act (also called Senate Bill 360) Risk Assessment (www.oregon.gov/odf/fire/docs/wildfireriskassessment.pdf)[1].

A review of these two methodologies reveals very different approaches to the analysis. The Firewise approach is mainly qualitative and descriptive. The SB360 method is more analytical and is quantitative. This provides two benefits: (1) it allows a clearer comparison of one site against another, and (2) provides an objective basis for Goal 14 findings. In either case, the assessment should be performed by experts or trained staff. The assessment will be completed during the Spring of 2015 so the results can be used in the evaluation of UGB scenarios.

The Focus Group recommended assessing the wildfire risk on adjacent parcels when it appears that there is a difference in fire management regimes on land adjoining the proposed UGB expansion lands. The Group also suggested that an on-site assessment would be helpful in determining appropriate mitigation measures for lands selected to include in the UGB.

- ***Recommendation to USC:*** *Assess wildfire risk on land within the UGB Scenarios using the SB360 Risk Assessment. Utilize willing members of the Focus Group or trained staff for the site assessments. Assess adjacent land within a quarter mile. Use the results of the on-site risk assessments for (1) determining suitability for inclusion in the UGB under Goal 14 Factor 3, (2) determining appropriate mitigation for lands that are selected to be included in the UGB, and (3) qualitative mitigation recommendations and cost analysis.*

WILDFIRE MITIGATION STRATEGIES

Finally, the Focus Group was asked to discuss appropriate mitigation for development, considering that almost all lands being considered for the UGB present some level of high fire risk. The consensus of the group was that the foundation for wildfire mitigations should begin with Firewise recommendations as outlined in National Fire Protection Association (NFPA) Standards 1141 and 1144 (http://www.nfpa.org/codes-and-standards/document-information-pages):

[1] Senate Bill 360 was passed by the Legislature in the 1997 Session.

- NFPA 1141: This standard provides requirements for the development of fire protection and emergency services infrastructure to make sure that wildland, rural, and suburban areas undergoing land use changes or land development have the resources and strategies in place to protect people and property from fire dangers, and allow fire fighters to do their jobs safety and effectively.
- NFPA 1144: This standard provides a methodology for assessing wildland fire ignition hazards around existing structures and provides requirements for new construction to reduce the potential of structure ignition from wildland fires.

Other communities around the fire-prone west, such as Flagstaff, Arizona, have adopted wildfire mitigation programs that go beyond the Firewise standards but which may be appropriate for Bend.

The City's ultimate goal is to adopt effective mitigations through policy and codification. However, not all Firewise recommendations are in line with the City's urbanization goals. For example, Firewise recommends 30 feet of clearance between homes, which would have the effect of limiting the development type to a low density. Therefore, an alternative approach may be necessary, which would identify alternative mitigations to accomplish similar protections.

Some initial thoughts for consideration include, but are not limited to:

- Requiring internal or external sprinkler systems in structures within the interface zone.
- Prohibiting combustibles (fences, vegetation, mulch, etc.) between structures.
- Creating a managed buffer zone between the UGB and homes. This would be an area managed expressly with the intent of reducing wildfire hazard and providing a place where firefighters can work safely in the event of an approaching wildfire. A variety of ownership and management models could be considered.

Identifying appropriate standards for policy and codification could be accomplished by a task force consisting of the agencies responsible for wildfire mitigation and protection and a subgroup of the Boundary TAC. The task force would go through the existing Bend code and the NFPA Standards to identify those that are appropriate for codification and develop alternatives to the standards that are not consistent with the City's urbanization goals.

❖ ***Recommendation to USC:*** *Form a Task Force to review Firewise recommendations as outlined in NFPA Standards 1141 and 1144, as well as programs adopted in other communities, and make recommendations to the City regarding mitigation measures appropriate for adoption as policy and codification.*

WILDFIRE RISK FOCUS GROUP DISCUSSION SUMMARY

Monday, April 20, 2015 City Hall Council Chambers

Focus Group:

- Stu Otto, Department of Forestry
- Ed Keith, Deschutes County Forester
- Alex Robertson, US Forest Service
- Robert Madden, Bend Fire Department
- Craig Letz, Wildfire Consultant

Boundary TAC members in attendance:

- Paul Dewey
- Gary Timm
- Charley Miller
- Dale Van Valkenburg
- Brian Meece
- Rod Tomcho
- Robin Vora
- Mike Riley
- Tom Kemper

Project Background

The original UGB proposal did not assess fire risk. In the Remand, DLCD told the City that it was not specifically required to examine wildfire risk but strongly suggested that a look at wildfire risk through the balancing lens of Goal 14. To that end, the City gathering the best available information on risk and mitigation approaches and is using that information to make the best decisions for the UGB expansion.

The City started by using the Deschutes County Community Wildfire Protection Plan (CWPP). The Boundary TAC struggled with the CWPP as a tool, mainly due to outdated data and artificial boundaries for risk. This focus group was pulled together to discuss the appropriateness of the CWPP and to get ideas for analyzing wildfire for specific UGB expansion scenarios; ideas for mitigation strategies and policy development; and direction on how best to move forward with multi-agency involvement and coordination.

Panel Discussion

Is the CWPP an appropriate tool to use for assessing relative wildfire risk? Are there other tools?

Ed Keith offered the West Wide Risk Assessment (2013), a mapping effort coordinated through council of Western States Foresters. He provided three maps (attached). These maps provide a finer grained analysis of risk that is not constrained by artificial geographic boundaries (one of the TAC concerns) but that essentially supports the conclusions of the CWPP: wildfire risk is high all around the City. The only places that there isn't high risk is where there are irrigated fields or rock. The West Wide Risk Assessment has the same constraints as the CWPP in that the data is several years old and does not include some recent fires and fire treatments. This is a challenge with all models because the fire landscape is dynamic.

Alex Robertson said that there are many models for wildfire out there, all of them suffer from the dynamic nature of the resource. Most federal models are focused on how to manage lands within the boundaries of the management agency.

All panelists agreed that the CWPP is a decent tool to use, particularly because it is possible to dig into the assumptions and see what conclusions were used to assess the risk. In other words, risk is high all around the City but might be high in one area because of threats to structures and in another because of topography.

Does the panel have ideas for analyzing wildfire risk for specific UGB expansion scenarios?

The panel generally agreed that some level of site specific analysis would be appropriate. GIS will reveal topographical issues (i.e., steep slopes, saddles), aerial photography will provide some information on vegetation, but boots on the ground at eye level may be the most useful.

Susie Maniscalco from the City of Bend offered that there are existing assessment tools, such as NFPA and Firewise, which would be useful for property specific assessments.

Does the panel have ideas for mitigation strategies and policy development?

The panel generally agreed that there's always risk and that some kind of codification of mitigation to minimize risk will most likely be appropriate. Firewise appears to be an excellent starting point for mitigation tools. Defensible space around individual homes or clusters of home is critical. The concept of larger managed buffers at the urban/wildland interface was discussed. The panel emphasized the need for constant management of any kind of defensible space or urban buffer. Access (i.e. maintained and ungated roadways) is also important. It may be necessary to require structural standards (i.e., sprinklering buildings) in some areas.

The panel suggested that the City look at what other communities, such as Flagstaff, Arizona, are doing to manage wildfire risk.

The panel cautioned that, to the extent we can, we also need to make sure that adjacent property owners outside the urban area – private or public – can continue to use appropriate tools to manage their lands, including prescribed burning.

Multi-agency involvement and coordination – is this the right group, are we missing anyone?

The panel agreed that they represented the appropriate agencies. Craig Letz suggested that the Bend Police Department and Deschutes County Sheriff be invited to the table to discuss mitigation, since they are the agencies that handle evacuations during a fire emergency.

Boundary TAC Discussion and Questions

In what parts of the UGB expansion study area is wildfire risk the highest? Which parts the lowest?

Risk is high everywhere except for irrigated land or rock.

What major fires in recorded history have threatened the north, northeast or east parts of Bend (Rickard Road north to Hwy 97 around the northeast perimeter)?

There have been no fires larger than 20 to 40 acres north of Rickard road.

Please address spotting in major fires such as occurred during the B&B Complex and how that affects fire risk within potential UGB expansion areas?

Spotting is an issue with all wildfires, is not specific to any geographic area. Protection is provided by good vegetation management.

What are the most common wind directions during extreme fire conditions, especially stronger winds?

Wildfires create their own wind conditions. Catastrophic fires have a tendency to move north and south, which has been demonstrated to be the result upper level winds.

If development is built as fire-resistant (i.e. with defensible zones and fire resistant materials), can it actually help provide fire breaks in the case of a wildland fire?

Yes.

The Westside Fire Management Plan that is being executed along Skyliners Road and on forest lands is part of a larger National Strategy and National Plan to reduce fire fuels and provide a healthier forest that is more resilient in the case of wildfire. Would you agree with this work being performed that Bend is in a better position now and more of a fire resilient community that it has been in the past 15-20 years?

Yes.

When we are doing mitigation along the urban edge, are there things we need to do differently for transportation and water infrastructure?

We definitely need to build in smart transportation infrastructure and consider emergency response and evacuation need. Water supply is critical, but urban levels will be sufficient.

Does Bend Fire have maps and information on response times for different parts of the City?

Our fire stations are basically located towards the outer edges of time – in fact, the Fire Department is currently focusing on improving response times to the central part of Bend.

If a property urbanizes, what mitigation would you recommend? What should we do everywhere?

Project Wildfire (Firewise) is the best approach. It includes the mitigation measures discussed today: building materials, roofing materials, decking, vegetation management, and appropriate buffer zones.

In your fire planning, do you take into account climate change factors?

Yes. Longer summers, hotter and dryer summers; it is an unrealistic expectation to rely on the past and assume it won't change.

Considering climate change, worst case scenario – fire coming into a residential area -- is there an area where you'd be least likely want to see new homes?

There are no geographic regions (i.e. west vs. east) that are necessarily worse or better – but proper attention is needed for specific areas. Terrain features should be taken into consideration; for example, it would be preferable to not locate houses in a saddle or at the top of a draw.

What are the most sources of ignition for fires outside the existing UGB?

There is about a 50/50 split between human-caused and lightning fire starts.

Public Comments

1. John Jackson – retired from wildland fire business. Instead of avoiding development; target those areas of areas to mitigate; make it a condition of approval to require fuels mitigation and fire buffering. Tie these areas together so there's consistent treatment, similar to what Flagstaff and other communities have done. Go west and attack the problem to the west. Think about putting the onus on developers to mitigate.

2. Gary Marshall – retired Bend fire marshal, currently working for Sisters Camp Sherman and NFPA and Fire Wise advisor. The root of the fire risk problem is development standards – work with developers before they purchase the property. Develop mitigation standards – SB 360 development standards are working.

Fire Risk Index

Expected loss based on likelihood of an acre burning and potential effect on values and suppression costs.

Legend

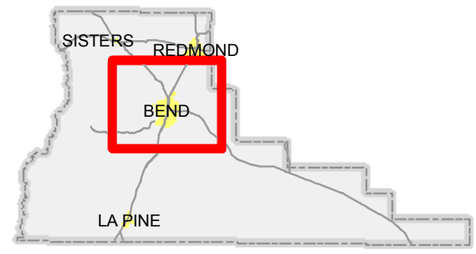
- ODF Protection Boundary
- Rural Fire District
- Lake
- River
- Urban_Growth_Boundary
- Roads

Fire Risk Index

<VALUE>

- >= -1.54
- -1.541 to -4.73
- -4.731 to -6.64
- -6.641 to -10.6
- -10.601 to -21.03
- -21.031 to -51.46
- -51.461 to -122.52
- -122.521 to -284.77
- < -284.77

Vicinity Map



0 1 2 4 Miles

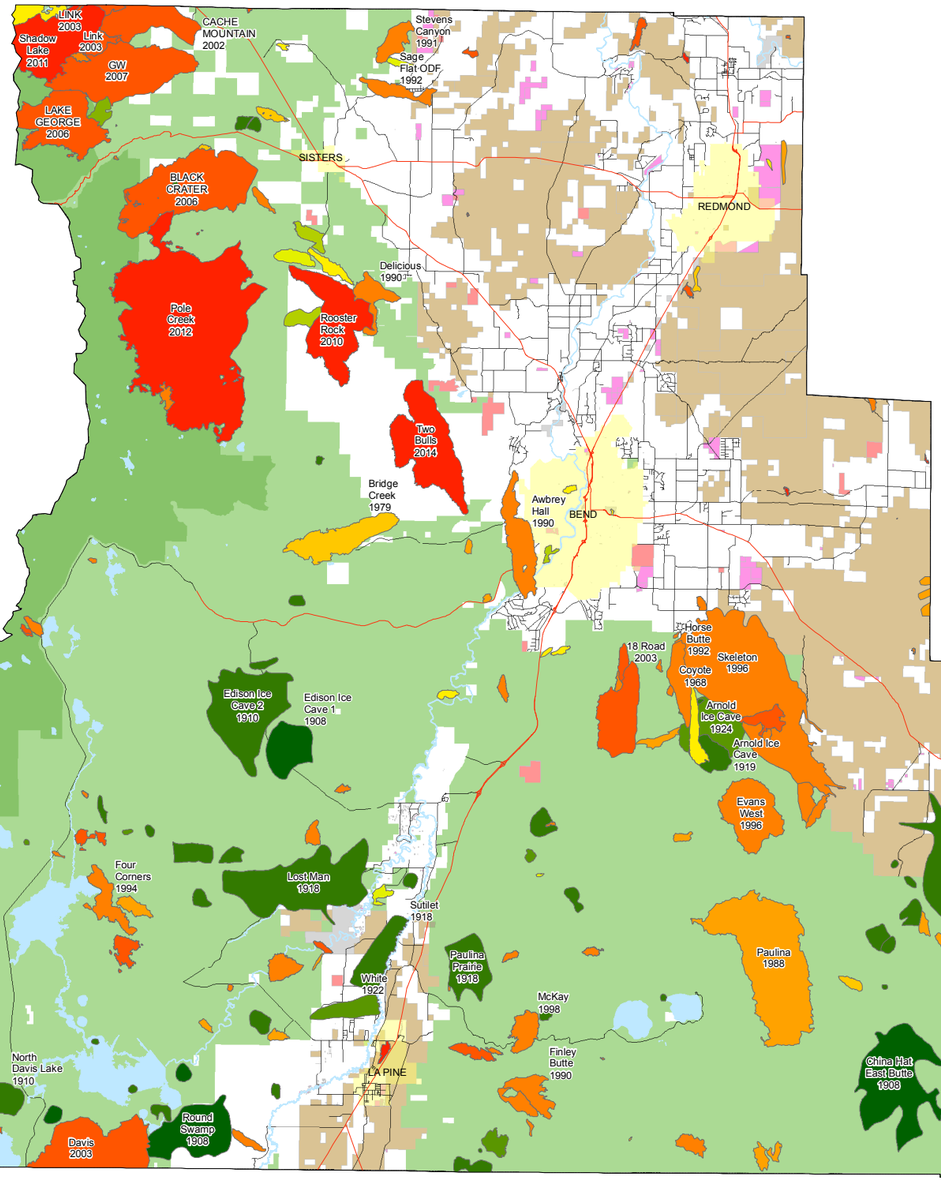
NORTH

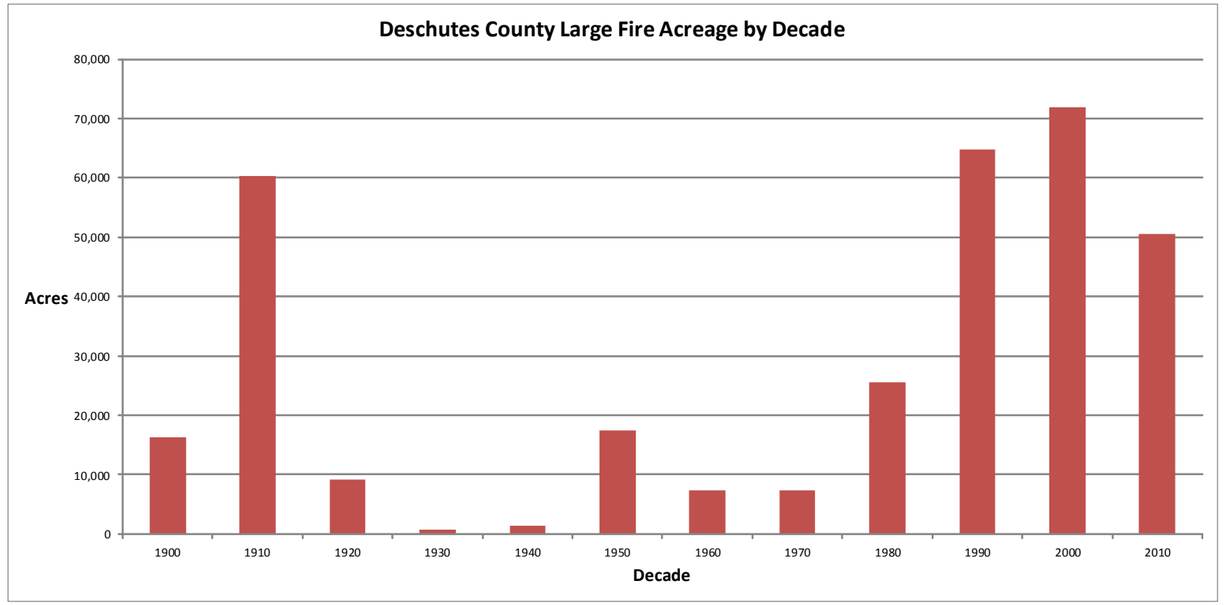
Map Prepared by Deschutes County
Forestry
Ed Keith
61150 SE 27th St., Bend, OR
541-322-7117

Date: 4/14/2015

Document Path: F:\OR-WA_WWA_USB\GIS\OR_10_BENDUGB.mxd

Deschutes County Large Fire History
1900 - 2014





Land Ownership

- USFS
- BLM
- ODSL
- OPRD
- PRIVATE
- Wilderness Area
- Deschutes County

FIRE OCCURENCE BY DECADE

1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010

0 5 10 20 Miles

NORTH

Map Prepared by Deschutes County
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61150 SE 27th Street
Bend, OR 97702
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