Section 5 of Ordinance 2271

Exhibit E

New Chapter 11 of the Bend Comprehensive Plan, Growth Management

Chapter 11: Growth Management

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
2016	NS-2271	Adopted chapter

BACKGROUND

Legal Context and Supporting Documents

Statewide Planning Goal 14 requires that cities establish and maintain Urban Growth Boundaries (UGBs) to provide land for urban development needs and to identify and separate urban and urbanizable land from rural land. The goal's purpose is: "To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside UGBs, to ensure efficient use of land, and to provide for livable communities".[1]

Like the statewide goal, Bend's growth management planning, goals and policies are comprehensive. The City plans for how much and what types of land are needed for future growth and what the form of new development should be to ensure a livable community and enhance Bend's high quality of life.

Bend's Urbanization Report documents: (1) the capacity of land inside the UGB to accommodate growth, including measures intended to result in efficient use of land; and (2) the City's evaluation of potential locations for UGB expansions and the consideration of the four Goal 14 factors in reaching a proposed UGB expansion. The Urbanization Report is focused primarily on the legal and technical aspects of growth management in Bend. The Urbanization Report for growth to 2028 is adopted and incorporated as Appendix L of the Comprehensive Plan.

Bend's Urban Form Report describes the physical form of the city. Urban form provides a way to understand the relationships between land uses and between the natural and built environments that give meaning to the legal exercise of planning for growth within and expansions of the city. Urban form encompasses the physical shape and design of the city. The layout of Bend's streets, the location and design of homes and businesses, and the distances between destinations all affect the quality of life for residents and visitors. Urban form influences land values; where residents live, work, shop and relax; everyday travel choices; and whether commute trips can be made by walking or biking, using transit, or driving. Bend's urban form also directly affects natural systems such as air and water quality, wildfire risk, health, and diversity of plants and wildlife. The Urban Form Report is a non-regulatory document that supports the goals and policies in this chapter of the Comprehensive Plan. It is adopted as Appendix M of the Comprehensive Plan.

Community Context

Bend's identity and unique urban form stem from the city's regional context, beautiful natural setting, and growth over approximately 100 years. Bend is the largest urban area in Oregon east of the Cascade Mountains. The city is uniquely situated between the Cascade Mountain Range and Deschutes National Forest to the west, and high desert plains to the east. Bend's varied topography and abundant natural features are major influences in its existing urban form and identity as a city. In many ways, the city's

[1] OAR 660-015-0000(14)

rapid growth is a direct result of its natural and scenic resources and proximity to the outdoors. The city's physical and visual access to Mt. Bachelor, the Three Sisters, the buttes within the city (such as Awbrey Butte and Pilot Butte), Deschutes River, and Tumalo Creek provide defining contextual elements of the city's urban environment and community identity.

Bend's location in the high desert also means that the community is susceptible to wildfires. While wildfire risk and hazard have had only a modest impact on the city's urban form historically, as the city expands further into the Wildland-Urban Interface, strategies to minimize and mitigate wildfire hazard will become increasingly important (see Chapter 10 for more about wildfire risk and hazard).

In the built environment, key transportation facilities such as Highway 97 and Highway 20 as well as freight rail lines connect Bend with other major regional destinations but also create barriers to pedestrian and habitat connectivity, and shape an auto-oriented urban form along the adjacent land. Bend's trail system, on the other hand, is essential to creating connected neighborhoods because it provides recreation opportunities and active transportation options, and contributes to the economic vitality of the community. Its parks provide places to play, connect, and socialize; access to nature; and natural system functions.

The city's historic development patterns, including the historic downtown and adjacent neighborhoods, which were developed in the late 19th and early 20th centuries, create a vibrant core with a gridded street system and short block lengths that provide a pedestrian-oriented setting as well as iconic public spaces such as Drake Park. Later development through the mid- to late-20th century produced quiet, generally low-density suburban neighborhoods with winding streets, and busy commercial corridors along major roads. As the lumber and farming industries waned in importance and tourism and recreation grew, the nature of employment areas shifted, with the beginnings of redevelopment within the city's urban core, such as the Old Mill District.

Today, Bend is a city in transition. In the first two decades since 2000, Bend is increasingly becoming less of a town and more of a small *city*, as evidenced by:

- A 2016 resident population of over 80,000, expected to grow to over 115,000 by 2028;
- A growing role as the regional economic center for Central Oregon;
- Recent rapid growth - the 7th fastest growing metro area in the country in 2015;
- A resident plus visitor population that swells the city's population to over 100,000 (2016) at the height of the summer tourism season;
- A prosperous downtown with 3-4 story mixed use development and structured parking;
- The success of Northwest Crossing, where traditional neighborhood development, convenient access to shops, parks, schools, and trails, as well as pedestrian friendly streetscapes are central to the development concept;

- New development, redevelopment, and adaptive re-use in the Mill District, employment lands north of Century Drive, and other industrial and mixed-employment lands throughout the City;
- A significant growth in transit ridership since fixed route service was established in 2007;
- Oregon State University's decision to establish the 4-year Cascades Campus in Bend;
- Public planning and investments in key infrastructure (e.g. the citywide sewer system) and urban amenities (e.g. Drake and Shevlin Parks, recreational amenities such as the Ice Skating Pavilion and reconstructed white water park on the Deschutes River, and Healy Bridge, to name a few);
- Housing affordability challenges; and
- The growth of the "makers" economy, such as craft brewing.

Bend's growth management strategies are intended to help make the transition described above from small town to city and contribute to maintaining Bend's livability and desirability as the city grows and evolves.

Complete Communities

Key Ingredients

Complete communities have varied housing options and many of the essential services and amenities needed for daily living, including quality public schools, parks and open spaces, shops and services, all within a convenient walking or biking distance. Complete communities should also have convenient access to public transportation and employment areas.

Community Priorities

In Bend, and across the nation, residents and local officials are increasingly making walkability, mixed use and access to amenities a high priority. This trend will spur the growth and redevelopment of areas within Bend that are walkable and have many amenities and services close by. Research indicates that walkable and mixed use communities have higher property values, more opportunities for affordable housing, and also encourage greater bike, pedestrian, and transit use. An increased interest in complete communities is also expected to heighten demand for thoughtfully planned neighborhoods and employment districts in expansion areas where uses are knit together and accessible by a variety of travel modes. As land prices increase and demographic shifts increase demand and need for a greater variety of housing options, densities are expected to increase in newly-built neighborhoods and through modest amounts of infill and redevelopment in existing neighborhoods.

Bend's Central Core

Bend Central Core is a uniquely livable part of the city. The central core offers proximity to downtown, the Deschutes River, Mirror Pond, Juniper Park, many other smaller parks, and a variety of regional destinations; a walkable street grid; neighborhoods with historic character; successful small neighborhood centers and corridors (2nd and 4th Streets, 8th and 9th Streets, Newport Avenue, Galveston Avenue, SW 14th Street); access to a high concentration of jobs by a variety of modes; and transit service. This blend of the "D" Variables (Density, Diversity, Design, and Destinations) is the foundation of the area's livability and an important influence on travel behavior.

Rendering of 2nd Street and Greenwood Avenue. Redevelopment of the area results in walkable streets and 3- to 5-story commercial and mixed use buildings.

As described in Bend's Integrated Land Use and Transportation Plan, national research has shown that the "D" variables are highly influential on how much walking, biking, transit use, and linking of trips occurs – which reduces the need to drive.[2] This is important because the availability of transportation choices contributes to Bend's overall livability. It is also important because state law requires the City to reduce the reliance of the automobile. During the UGB Remand process (2014-2016), the City modeled vehicle miles traveled (VMT) per capita throughout the urban area under different growth scenarios as in indicator (required by the state) of reliance on the automobile. Predictably, the Central Core showed the lowest levels of VMT per capita, and the highest potential for "moving the needle" toward relatively less VMT per capita through infill and redevelopment to focus growth and further increase the density and diversity of uses in this area.

[2] See Bend Integrated Land Use and Transportation Plan, which is an appendix to the Bend Transportation System Plan.

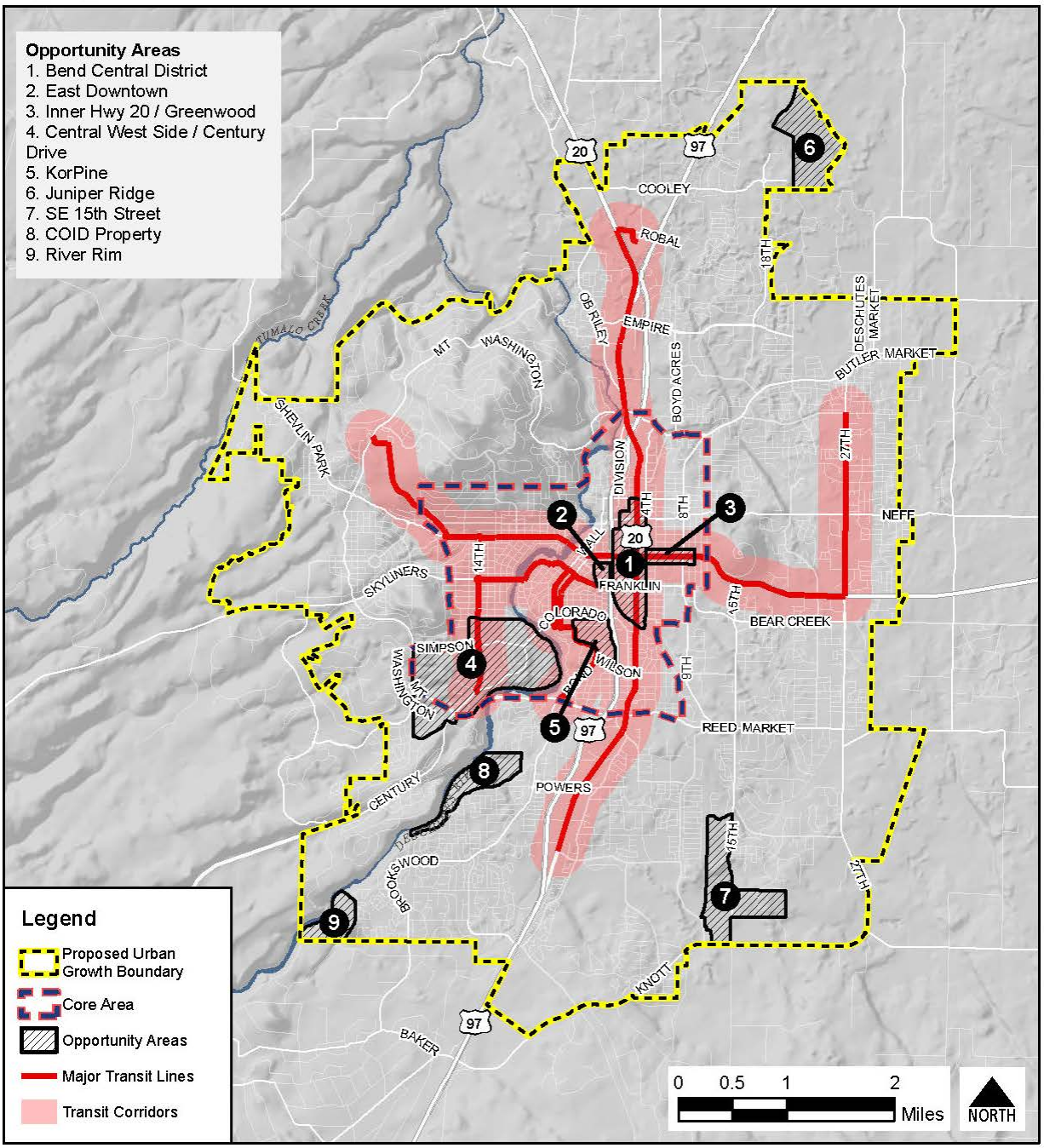
For all of the reasons described above, the Central Core is considered a particularly important part of the City's growth management efforts. The success of Bend's transition to more of an urban community will follow the continued growth, in appropriate areas, of the Central Core. It is important to note that placing a priority on growth within the Central Core does not mean that all areas should redevelop. In this context, "appropriate areas" means development and redevelopment on vacant lands, underutilized lands, and where development is designed to be compatible with adjacent, stable areas.

Aerial rendering of the Bend Central District with mixed use redevelopment and transitions to adjacent neighborhoods.

The Central Core area is shown on Figure 11-1. The "boundary" on this figure is illustrative only. The Central Core is a planning concept – its applicability to specific development and policy implementation needs to be interpreted on a case-by-case basis.

"Growing up" in appropriate areas within the Central Core, as well as transit corridors and opportunity areas, is a goal for Bend because these areas already have (or will have) the base infrastructure, population density, and urban amenity "completeness" that is needed for their success. They offer the best opportunities to reverse the growth of vehicle miles traveled per capita and increase walking, biking, transit, and linked trips by automobiles.

Figure 11-1: Core Area, Transit Corridors, and Opportunity Areas



URBAN GROWTH BOUNDARY REMAND

Data Source: Deschutes County GIS (2014)

Opportunity Areas

During the UGB Remand planning process (2014 to 2016), the City evaluated the efficient use of existing urban land through the lens of "opportunity areas". Opportunity areas are locations within the City that are appropriate to focus new growth due to their location, zoning (existing or planned), amount of vacant or underdeveloped land, and/or proximity to urban services. Each opportunity area will serve a unique role in the City's future – some are vacant land and will develop primarily through private sector initiative; others are redevelopment opportunities and will require a partnership of private sector investment and City support or investment.

Bend's opportunity areas are summarized below – please see the Urbanization Report for more detailed descriptions of the opportunity areas. The Opportunity Areas are shown on Figure 11-1.

- Bend Central District – opportunity for the 3rd Street commercial strip to transition to a mixed use corridor

Rendering of 3rd Street in the Bend Central District. Public and private investments in streetscape improvements support all modes of travel. New commercial and mixed use buildings revitalize the district.

- East Downtown – long-term opportunity for an extension of the downtown
- Inner Highway 20 – long-term opportunity for a walkable, mixed use corridor

- Century Drive Area – a key part of the Central Westside Plan, the siting of OSU's new four-year Cascades campus offers an opportunity to create a new mixed use center anchored and supported by the new institutional employment district.

Rendering of 14th Street / Century Drive near Commerce Avenue. Public and private investments will create a new mixed use center with "complete" streets.

- KorPine – opportunity to transform an industrial area into a vibrant urban mixed use district
- Inner Highway 20 / Greenwood Ave – opportunity to shift to a more walkable mixed use corridor
- Juniper Ridge – opportunity for a future industrial and professional office employment district

- 15th Street Ward Property – As the largest vacant residentially-designated property in Bend, this area offers an opportunity to create a new complete neighborhood including a local commercial center, a variety of housing options, parks and a school

Rendering of 15th Street north of Knott Road. New development provides local commercial services, a variety of housing opportunities, and "complete" streets.

- COID Property – long term opportunity for a new neighborhood adjacent to the Deschutes River
- River Rim – opportunity for an environmentally-sensitive new neighborhood adjacent to the Deschutes River

Bend's Urban Form

Urban form encompasses the physical shape and design of a city, comprising both natural and built environments. The layout of Bend's streets, location and design of homes and businesses, and distances between destinations all inform the city's urban form and directly affect the quality of life for residents. Urban form influences land values; where residents live, work, shop and relax; everyday travel choices; and whether commute trips can be made by walking or biking, using transit, or driving. Urban form "typologies" are used in Bend's growth management planning to provide a standardized system for organizing and classifying different development patterns around the city. The typologies help capture the current mixture of land uses and create a palette to describe the desired future urban form of Bend; however, they are intended to be descriptive rather than regulatory.

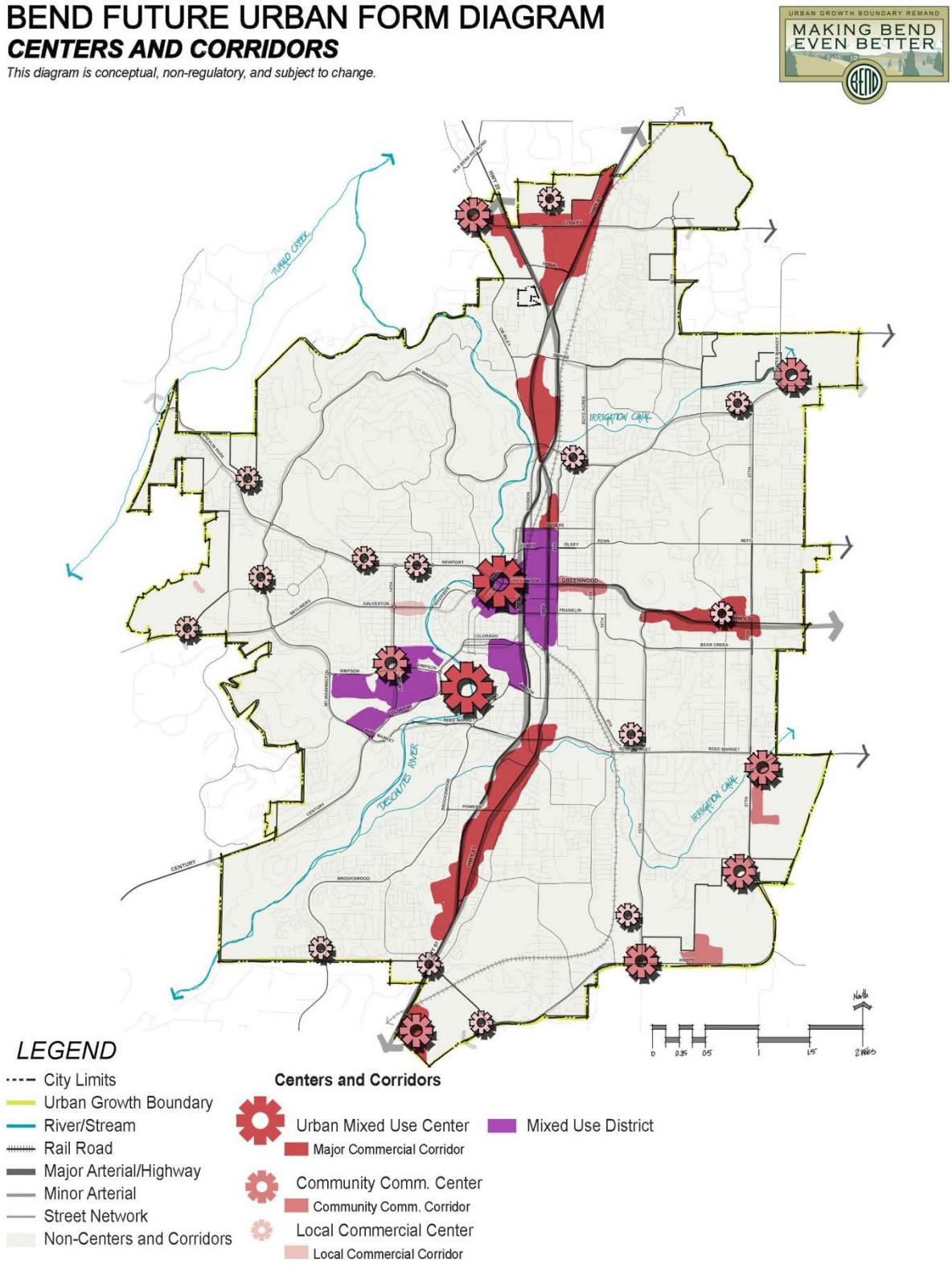
The typologies are broadly organized into Centers and Corridors, Employment and Mixed Use Districts, and Neighborhoods. These are summarized in brief below, along with diagrams for each category. These are followed by a combined diagram illustrating Bend's future urban form (Figure 11-5). The diagrams are not regulatory – they are visual tools that capture the City's growth concept and intentions for expansion areas as well as infill and redevelopment areas. For additional description of the typologies and how they were developed, see the Urban Form Report in Appendix Y.

Centers and Corridors

Bend's commercial areas take the form of one of two general shapes: (1) Centers, which are focal areas of commercial or mixed uses at an intersection, or contained within one to three blocks; or (2) Corridors, which follow a distinctly linear shape of commercial uses, typically along a busy street. The Centers and Corridor typologies vary in the intensity of commercial development and also the scale of area they serve. There are four different types of commercial centers and corridor typologies in Bend, summarized below. Centers and corridors include pedestrian-oriented and transit-supportive design within the Central Core, Opportunity Areas, and transit corridors.

Center or Corridor Type	Characteristics
Urban Mixed Use Center or District	Serve the entire city/region. Hubs of commercial, employment, and community services. Relatively high development densities. Often include mixed use development.
Major Commercial Corridor	Located along major transportation routes. Primarily commercial uses that thrive on high visibility and accessibility. May include mixed-use development.
Community Commercial Center or Corridor	Serve surrounding neighborhoods. Provide a range of retail, service, and/or office uses, and may include mixed-use development.
Local Community Center or Corridor	Smaller centers or corridors with small-scale retail and local services. Generally surrounded by neighborhoods. May include mixed-use development.

Figure 11-2: Centers and Corridors Future Urban Form Diagram

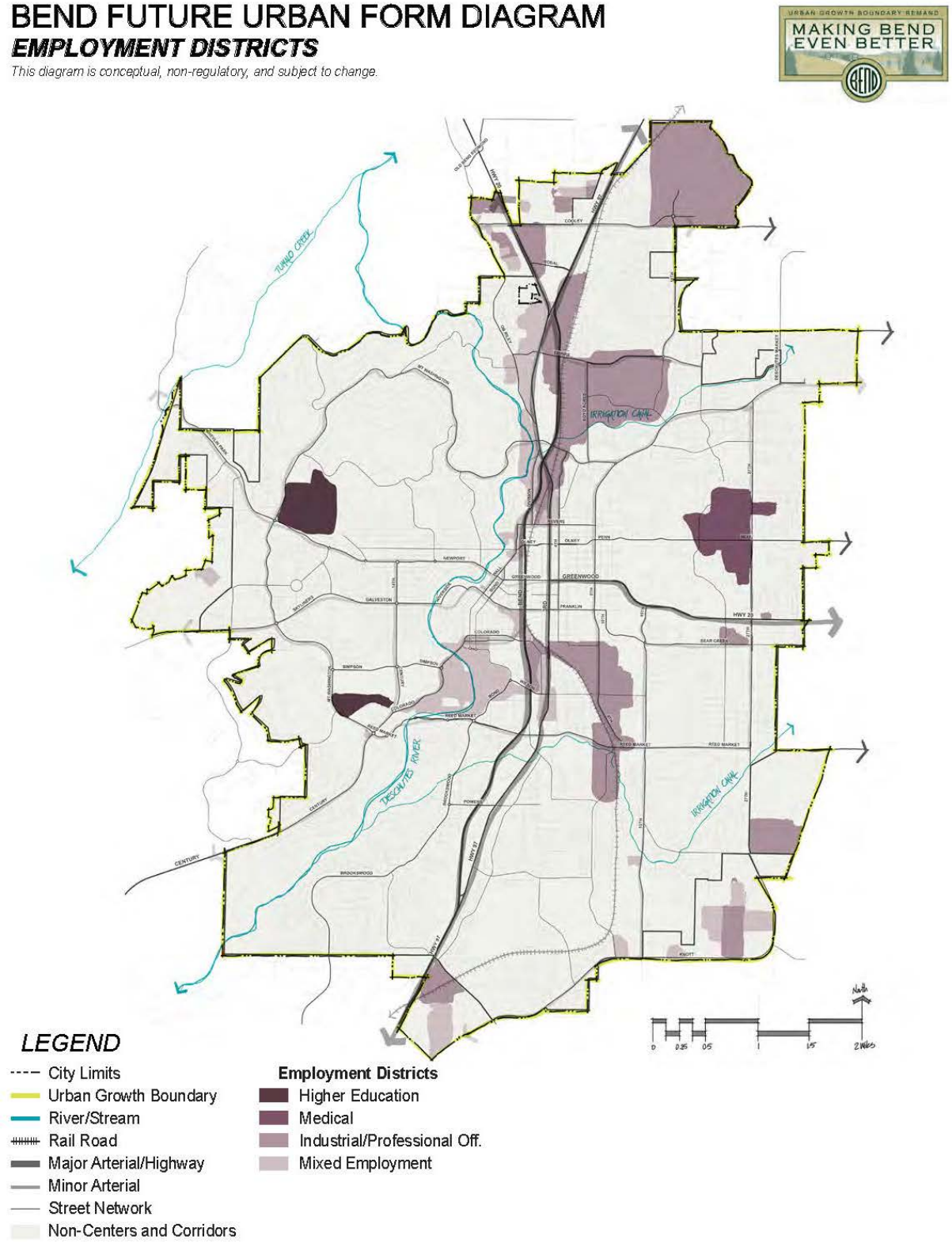


Employment Districts

Employment Districts are areas where the predominant uses are offices, industrial uses, or major institutions. Retail may be present but is a relatively minor use. Bend's Employment Districts support a diverse range of jobs and industries, and vary mainly in their primary function and the mix of employment uses. There are four different typologies of Employment Districts in Bend, summarized below. Employment Districts include pedestrian-oriented and transit-supportive design within the Central Core, Opportunity Areas, and transit corridors, and where noted below.

Employment District Type	Characteristics
Higher Education	Educational institutions and campuses such as Central Oregon Community College and Oregon State University. May include on-campus housing. Typically pedestrian-oriented and transit-supportive.
Medical	Focused on uses including hospitals, medical offices, and other related facilities, such as St. Charles Medical Center and the surrounding uses. Residential uses are generally limited to group homes with some multi-family development (e.g. senior living).
Industrial or Professional Office	Uses include manufacturing, industrial and office uses. Typically depend on automobile and truck access. Few or no residential uses.
Mixed Employment	Mix of office uses, manufacturing and light industrial uses such as creative and flexible work spaces, as well as some retail and community services. May include mixed-use development.

Figure 11-3: Employment Districts Future Urban Form Diagram



Neighborhoods

Neighborhood typologies are based on a range of factors including mix of housing types, permitted density (dwelling units per acre), block layout, connectivity and proximity to amenities such as parks and schools. Bend has a wide variety of neighborhoods. Five existing neighborhood typologies have been identified, and are summarized below. Neighborhoods may include pedestrian-oriented design, and can be transit-supportive where transit is available or planned.

Neighborhood Type	Characteristics
Early Bend	These neighborhoods have a close association with the early development of Bend, such as Drake Park Historic District and other neighborhoods platted early in Bend's history that may not have a historic designation. Historic buildings and architecture that may have unique cultural or historic value. Neighborhood streets form a tight grid pattern.
Traditional	Typically developed with a grid street pattern. Some mix of housing types, but moderate overall densities. Often have commercial nodes or corridors within walking distance. May be older neighborhoods such as Bend's "Midtown" and inner west neighborhoods or new development such as Northwest Crossing.
Mixed Suburban	Moderate residential densities with a mix of housing types, including some multifamily, duplex/triplex and/or single family attached housing. Local street patterns may be meandering rather than a grid layout.
Single Family Suburban	Largely single family detached homes at low to moderate densities. Local street patterns may be meandering rather than a grid layout.
Large Lot	Primarily single family detached homes on large lots. Local streets often curve to follow natural features, with long driveways or private drives.
Transect	This typology provides a transitional residential development pattern from urban to rural using a variety of housing types integrated with the surrounding natural landscape to minimize the impact on sensitive eco-systems, wildlife and to reduce the risk of wildfire.

Figure 11-4: Neighborhoods Future Urban Form Diagram

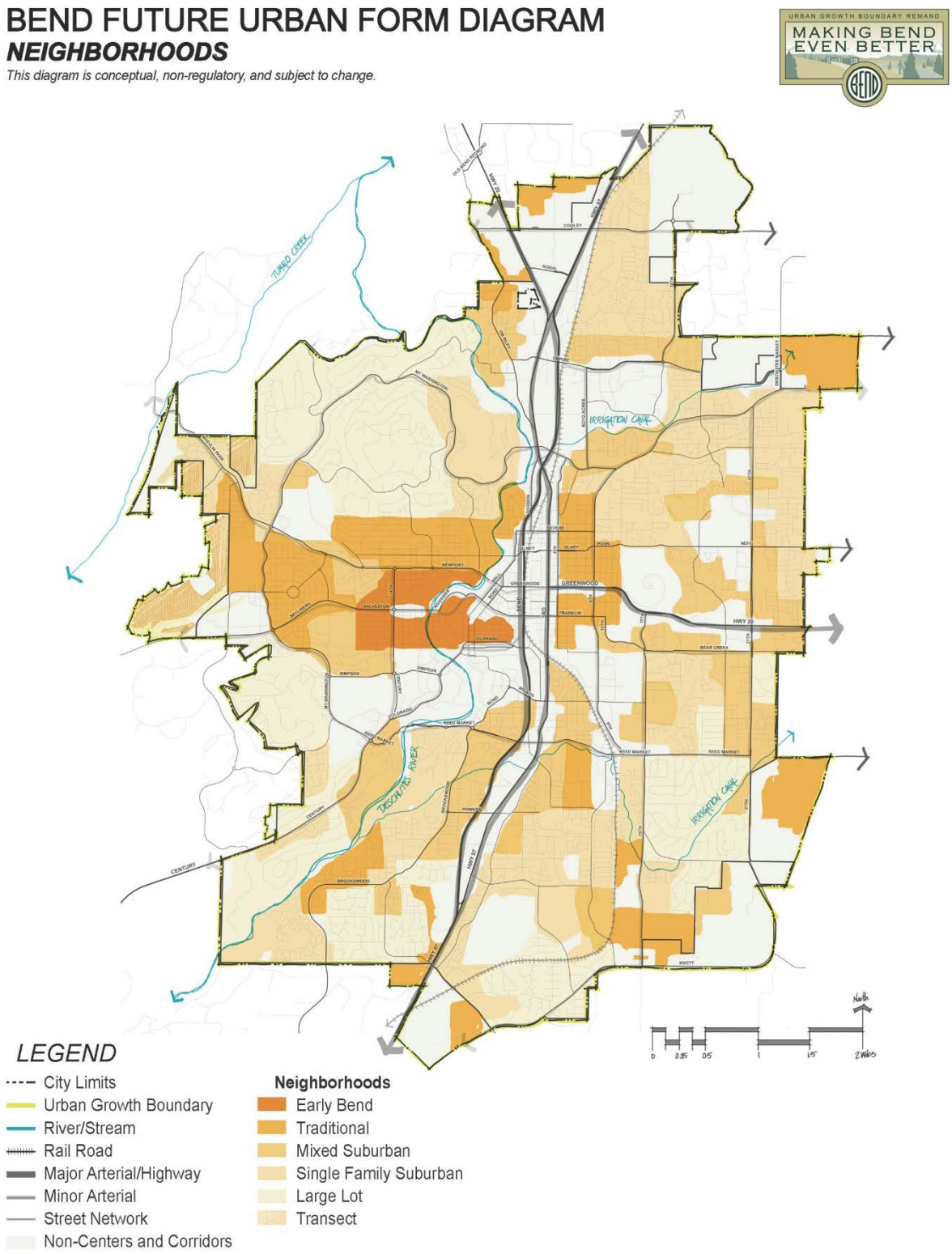
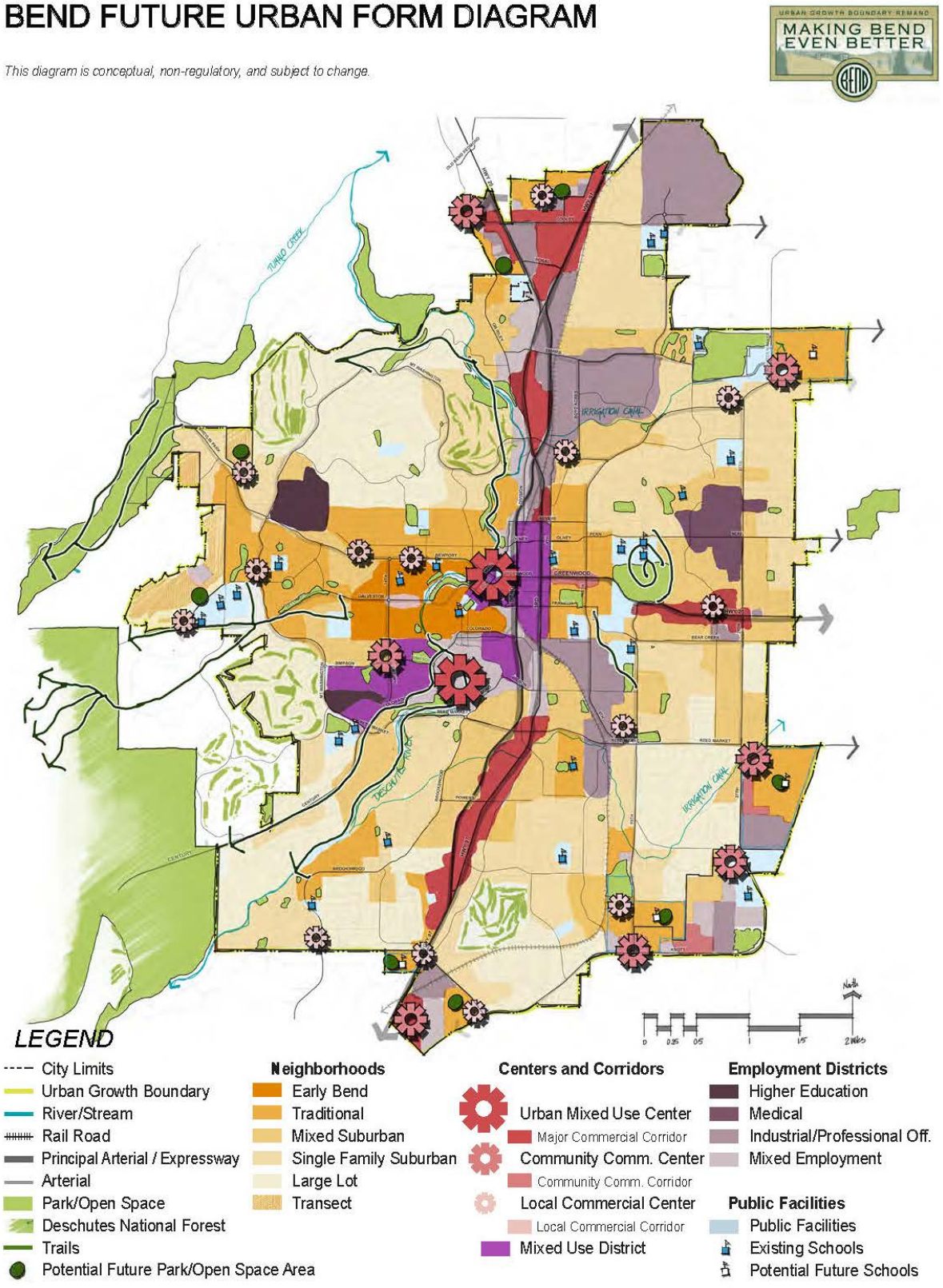


Figure 11-5: Combined Illustrative Diagram of Future Urban Form



Providing for Forecast Growth

The City is required to provide enough suitable land to accommodate 20-year land needs each time the UGB is evaluated in order to meet the requirements of Goals 9 and 10 for Employment and Housing land, respectively. As noted at the beginning of this Chapter, Bend's Urbanization Report presents an analysis of where and how Bend's future growth will be accommodated through growth on vacant land, infill/redevelopment, and UGB expansion. In order to ensure that the City's available land can accommodate the growth projected, the City has adopted "efficiency measures" in the Development Code, which are supported by policies in this Chapter as well as the Housing and Employment Chapters. Key components of the efficiency measures include minimum densities for each urban residential plan designation (and the corresponding zoning district), increased minimum densities for large master plan sites, and eliminating barriers to efficient development, such as overly restrictive lot size requirements in medium- and high-density zones.

Area Planning Tools

The City has a number of tools and processes available to refine planning for specific areas. They include master plans, a development review tool used to guide the development of larger properties; and City-initiated planning efforts for specific geographic areas, such as refinement plans and special planned districts. Master plans are requested by property owners and approved as quasi-judicial land use decisions. City-initiated Area Plans are initiated by the City Council (sometimes at the request of property owners) and are adopted as legislative land use decisions. Additional area planning tools may be developed in the future to respond to specific needs.

In this chapter, the term "Area Plans" is used to encompass the full range of tools available for refinement of land uses, infrastructure and public facilities, and development regulations for specific geographic areas. Area planning can also be used as a tool for new growth in expansion areas to ensure that development is coordinated and efficient. Several types of area planning tools are described in the development code. Policies guiding area planning generally and master plans in particular are provided in the policy section of this Chapter.

Goals

The following goal statements describe the future urban form and growth aspirations of the community and serve as the foundation for policy statements in this chapter. The citizens and elected officials of Bend wish to:

- Encourage the city's evolution from small town to livable city, with urban scale development, amenities, and services in appropriate locations, while preserving and enhancing the natural environment and history of the community;
- Use Bend's existing urban land wisely, making efficient use of land inside the boundary, with infill and redevelopment focused in appropriate areas within the Central Core, along transit corridors, and in key opportunity areas (see Figure 11-1);
- Create new walkable, mixed use and complete communities by leveraging and complementing land use patterns inside the existing boundary and using expansion to create more complete communities;
- Locate jobs in suitable locations, where there is access to transportation corridors, larger parcels, and good visibility for commercial uses;
- Plan Bend's infrastructure investments for the long term;
- Meet state requirements for growth management and the UGB while achieving local goals;
- Lay the groundwork for the future growth of Bend by taking into consideration the context of lands beyond the UGB;
- Utilize best practices (e.g. cluster development, transect planning) in appropriate locations to reinforce the City's urban form, reduce risk of wildfire, and recognize natural features that present "hard edges" for urbanization; and
- Implement an overall strategy to *"Wisely grow up and out".*

Policies

General Growth Management Policies

(See related policies in Chapter 1, *Plan Management and Citizen Involvement* and Chapter 10, *Natural Forces.*)

11-1 The City will encourage compact development and the integration of land uses within the Urban Growth Boundary to reduce trips, vehicle miles traveled, and facilitate non-automobile travel.

11-2 The City will encourage infill and redevelopment of appropriate areas within Bend's Central Core, Opportunity Areas and transit corridors (shown on Figure 11-1).

11-3 The City will ensure that development of large blocks of vacant land makes efficient use of land, meets the city's housing and employment needs, and enhances the community.

11-4 Streets in the Centers and Corridors, Employment Districts, Neighborhoods, and Opportunity Sites will have the appropriate types of pedestrian, biking, and transit scale amenities to ensure safety, access, and mobility.

11-5 The City will adopt strategies to reduce wildfire hazard to lands inside the City and included in the Urban Growth Boundary. These strategies may, among others, include the application of the International Wildland-Urban Interface Code with modifications to allow buffers of aggregated defensible space or similar tools, as appropriate, to the land included in the UGB and annexed to the City of Bend.

Policies for Centers and Corridors

(See related policies in Chapter 6, *Economy.*)

11-6 The City will encourage vertical mixed use development in commercial and mixed use zones, especially where those occur within the Central Core, Opportunity Areas and along transit corridors.

11-7 The existing pattern of commercial plan designations shown on the Comprehensive Plan Map along arterial and collector streets including Newport Avenue and Galveston Avenue will not be extended into residentially designated areas unless approved through an Area Plan.

11-8 New commercially designated areas are encouraged to develop with mixed-use centers to include housing, open space, commercial development, and other employment uses.

11-9 The City will encourage development and redevelopment in commercial corridors that is transit-supportive and offers safe and convenient access and connections for all modes.

11-10 The City will encourage the development of Neighborhood Commercial centers. Such centers should be scaled to serve the frequent needs of the residents of the neighborhood.

11-11 Unless otherwise approved through an Area Plan, new Convenience Commercial Comprehensive Plan designations should be limited to five acres and should be one mile from another commercial Comprehensive Plan designation.

Policies for Employment Districts

(See related policies in Chapter 6, *Economy.*)

11-12 New employment districts with a mix of Plan designations such as commercial, industrial, and mixed employment may be created along Highway 97, Highway 20, and O.B. Riley Road.

11-13 The City will periodically review existing development and use patterns on industrial and commercial lands. The City may consider modifying

Comprehensive Plan designations and Zoning to better respond to opportunities for redevelopment and revitalization of employment lands in underutilized areas.

Policies for Residential Areas and Neighborhoods

(See related policies in Chapter 5, *Housing.*)

11-14 The City will support re-designation of suitable areas that are within a 1/4 mile walk to transit corridors from a lower density designation to a higher density designation, where plan amendment criteria are otherwise met.

11-15 Neighborhood Commercial shopping areas may be located within residential districts and have development standards that appropriately limit their scale and recognize their residential setting.

11-16 Medium-and high-density residential developments should have good access to transit, K-12 public schools where possible, commercial services, employment, and public open space to provide the maximum access to the highest concentrations of population.

11-17 Schools and parks may be distributed throughout the residential sections of the community, and all types of dwelling units should have safe and convenient access to schools and parks. The School District and Park District facilities plans will determine the location and size of needed schools and parks.

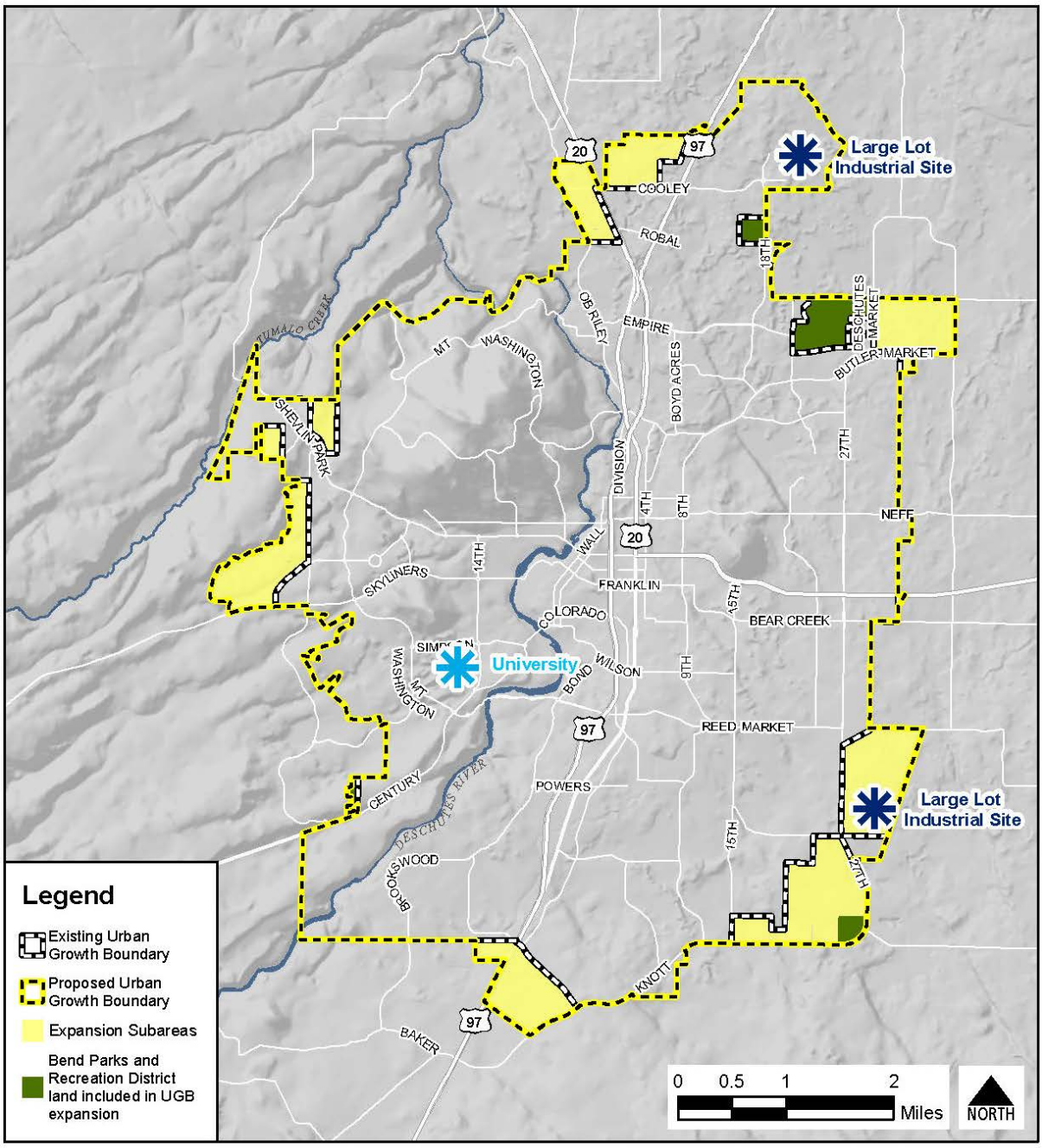
Policies for Special Site Needs

11-18 The City has identified a need for a special site for a university as part of the Urban Growth Boundary Process. At this time, Oregon State University is developing plans for a Bend campus. If OSU's plans are approved by the City, their campus will meet this identified need. The campus site currently being developed is between Century Drive, Mt. Washington Drive and Simpson Avenue (see Figure 11-3). Further expansions of the university within this area of the City are also being considered. Such a designation for this area does not preclude land uses other than institutional.

11-19 The City has identified a need for two large lot (at least 50-acre) industrial sites for targeted industries specified in the EOA. This need will be met through the opportunity for one large lot industrial site in the eastern portion of Juniper Ridge and one large lot industrial site on the DSL property (see Figure 11-3).

11-20 Subsequent area planning for properties that are identified as meeting a special site need shall include regulations to protect the site for the identified use. The regulations will be consistent with the Regional Large Lot Industrial Land provisions for Crook, Deschutes and Jefferson Counties in Oregon Administrative Rules, Chapter 660, Division 24. The regulations will be consistent with the model code prepared as part of the 2011 Regional Economic Opportunities Analysis.

Figure 11-3: Special Sites



URBAN GROWTH BOUNDARY REMAND

Disclaimer: Site specific location of special sites is subject to refinement through area planning and land use review.

Data source: Deschutes County GIS (2014)

Streams/Rivers
Roads/Highways

General Area Planning Policies

11-21 Area Plans are intended to coordinate development and provide flexibility to tailor land use regulations and/or transportation and infrastructure plans to respond to area- or site-specific conditions.

11-22 The city will establish development codes to provide a variety of approaches to area planning in order to further the development of complete communities, unique developments which implement comprehensive plan policies, and provide for adequate public infrastructure.

11-23 The City may require Area Plans prior to development in UGB expansion areas.

11-24 Where Area Plans propose land uses that are inconsistent with the adopted plan designation(s), a plan amendment must be approved prior to or concurrent with adoption of the Area Plan.

11-25 An Area Plan that includes residentially designated land may prescribe residential density limits on specific properties that differ from the density range provided for in the Comprehensive Plan. However, the average density of housing within each residential plan designation in the plan area must remain within the range established by the adopted comprehensive plan map designations and applicable Comprehensive Plan policies, including applicable density bonuses or transfers. Deviation from this range requires approval of a plan amendment prior to or concurrent with the Area Plan that creates consistency between the plan designations and the average densities within each plan designation in the area plan. Certain areas, including large master plan sites and UGB expansion areas are subject to additional policies in this Chapter and/or additional standards in the development code regarding residential densities.

11-26 Area Plans for land within UGB expansion areas shall comply with the policies of this chapter. There is flexibility to refine the spatial arrangement of plan map designations provided that identified land and housing needs are still met. Where specific expansion area policies identify acreages of specific plan designations or general categories of plan designations (e.g. commercial) are identified, compliance is defined as providing the required acreages of gross buildable land to the nearest acre. Where expansion area policies identify a required minimum housing capacity and mix, compliance is defined as providing no less than the required number of units and providing the housing mix specified to the nearest percentage point (e.g. 37%).

11-27 Where changes are proposed to the arrangement of plan designations, the proposed arrangement must comply with the relevant policies of this Chapter.

11-28 Some UGB expansion areas have identified preliminary needs for schools and parks. The need and location for schools and parks is determined by the facility planning of the School District and Park

District. The School Attendance Areas and Park Service Areas may change and the Area Plans for the UGB expansion areas should take into account any updated school and park needs when the plan is prepared.

Master Planning Policies

11-29 The City will provide a mechanism in the development code for property owner-initiated master plans. The development code shall specify approval criteria and procedures for such master plans.

11-30 Master plans in expansion areas are subject to policies 11-56 to 11-131 of this chapter.

11-31 The purposes of master plans are to:

- promote and facilitate coordinated development and efficient use of land;
- provide a process to consider future development on larger sites and to analyze future demand on public facilities; and
- provide an opportunity for innovative and creative development while providing long-term predictability for the applicants, surrounding neighborhoods, and the entire community.

11-32 The City will provide the opportunity for master plans to proceed under clear and objective standards where the applicant does not seek to deviate from the standards of the development code, the adopted zoning map, or Comprehensive Plan map.

11-33 Residentially designated land within master plans must meet higher minimum density standards than established for the residential plan designations generally and must provide for a variety of housing types. The City will set appropriate standards in the Development Code for housing mix and density for master plans in each residential zone/plan designation. Such standards will ensure minimum densities and minimum housing mix that are no less than those listed in Table 11-1.

Table 11-1. Residential Master Plan Minimum Density and Housing Mix

Residential District	Implementing Zone(s)	General Density Range*	Master Plan Minimum Density *	Master Plan Minimum Housing Mix**
Urban Low Density	Residential Low Density (RL)	Min: 1.1 Max: 4.0	2.0	10%
Urban Standard Density	Residential Standard Density (RS)	Min: 4.0 Max: 7.3	5.11	10%
Urban Medium Density	Residential Medium Density (RM)	Min: 7.3 Max: 21.7	13.02	67%
	Medium–10 Density Residential (RM-10)	Min: 6.0 Max: 10.0	6.0	67%
Urban High Density	Residential High Density (RH)	Min: 21.7 Max: 43.0	21.7	90%

* Density is expressed as dwellings per gross acre. See Bend Development Code for methodology to calculate minimum and maximum densities.

** Housing mix is expressed as the minimum percent of units that must be single-family attached townhome, duplex/triplex and/or multifamily residential units. See Bend Development Code for definitions of housing types.

11-34 Where a specific expansion area policy specifies a required overall housing mix for a given area, the total housing mix specified in policy shall apply in addition to the mix by plan designation listed in Table 11-1.

11-35 Master plans are required for developments over 20 acres unless otherwise specified in the Development Code. Properties in UGB expansion areas where a master plan is required are shown on Figure 11-4.

11-36 Where an approved City-initiated Area Plan exists, the City may find that some or all elements of a required master plan have been addressed and satisfied if they are already addressed by the Area Plan.

11-37 Approval of a City-initiated Area Plan that encompasses one or more properties over 20 acres (including abutting land in common ownership) does not exempt such properties from master plan requirements.

City-Initiated Area Plan Policies

11-38 The City may initiate Area Plans for neighborhoods, UGB expansion areas, opportunity areas within the city, or other discrete geographic areas.

11-39 Area Plans may be initiated by the City Council at its own initiative or at the request of property owners, if the owners agree to bear the cost of creating the plan. The City may, at its discretion, assist with some or all of the cost of creating an Area Plan initiated at the request of property owners.

11-40 The area to be included in a City-initiated Area Plan, and the scope, shall be approved by the City Council by resolution.

Annexation Policies

11-41 Annexations will follow the procedural requirements of state law.

11-42 Annexations will be consistent with the Comprehensive Plan and applicable annexation procedures and approval criteria.

11-43 Requests for annexation must demonstrate how the annexed land is capable of being served by urban services for sanitary sewer collection, domestic water, transportation, schools and parks, consistent with applicable district facility plans and the City's adopted public facility plans.

11-44 Annexations will be consistent with an approved Area Plan where applicable. The Area Plan may be reviewed and approved concurrent with an annexation application.

11-45 The City may, where appropriate in a specific area, allow annexation and require area planning prior to development approval.

11-46 Land to be annexed must be contiguous to the existing City limits unless the property owners requesting annexation show and the City Council finds that a "cherry-stem" annexation will both satisfy a public need and provide a public benefit.

11-47 Compliance with specific expansion area policies and/or Area Plans will be implemented through master plan approval or binding annexation agreement that will control subsequent development approvals.

11-48 Existing rural infrastructure systems and urban systems (water, sewer, transportation, stormwater) serving annexed areas may be required to be modernized and constructed to the City's standards and specifications, as determined by the City.

11-49 The City may consider funding mechanisms and agreements to address on- and off-site improvements, modernization of existing infrastructure to the City's standards and specifications, and impacts to infrastructure inside the current City limits.

11-50 Properties over 20 acres (including adjacent property in common ownership) as of the adoption of the UGB expansion (shown on Figure 11-4) are subject to master plan requirements, regardless of property acreage upon annexation.

General UGB Expansion Policies

The following policies are intended as local policy guidance to evaluating alternative future UGB expansions in the context of meeting state laws and administrative rules and balancing the factors established in state regulations. The emphasis on "guidance" above recognizes that the City will define goals and evaluation criteria to be applied for each unique UGB expansion process.

11-51 The City will consider the value of balancing and distributing UGB expansions geographically around the city consistent with State of Oregon laws and rules to distribute the benefits (and impacts) of growth and to provide more options for new neighborhoods.

11-52 The City will utilize new growth in expansion areas as a strategy to help make existing neighborhoods, centers, corridors, and employment districts inside the boundary more "complete" by: diversifying the housing mix; providing local commercial services and jobs; increasing transportation connectivity; and providing needed public facilities such as parks and schools.

11-53 The City will take into consideration the context of land beyond a single UGB expansion to inform the type and intensity of uses that are appropriate in each potential expansion area.

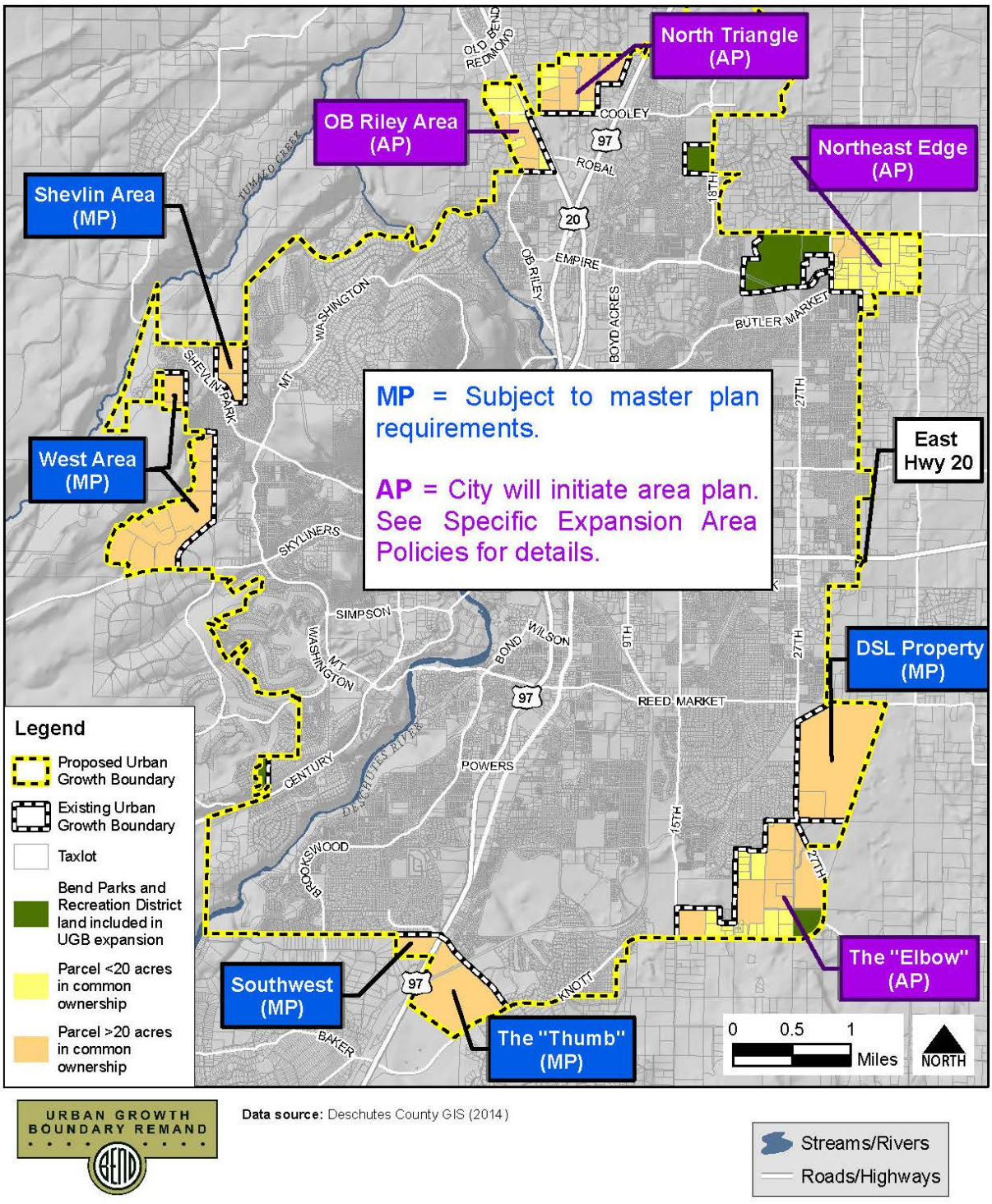
11-54 The City will consider applying the concept of a "transect" to appropriate areas. The transect is a series of zones that transition from urban to rural which can reduce the risk of wildfire and provide an appropriate transition from urban uses to national forest lands and other resource areas, such as wildlife habitat, that will not be urbanized within the long-range future.

11-55 The City will consider the relative ability of proposed expansion areas to address the city's affordable housing needs in balancing the social and economic consequences of bringing alternative expansion areas into its urban growth boundary.

Specific Expansion Area Policies

Area-specific policies for land added to the UGB established in 2016 are intended to guide the development of Area Plans (including Master Plans) for expansion areas (see Figure 11-4). These areas are also subject to policies in this Chapter regarding urbanization and annexation.

Figure 11-4: UGB Expansion Subareas and Area Planning Requirements



Northeast – Butler Market Village:

11-56 The City will initiate an Area Plan for the Northeast – Butler Market Village area. The Area Plan will address policies 11-57 through 11-63. Prior to completion of the Area Plan, annexations in this area must be a minimum of 40 contiguous acres and be the subject of a master plan application, which includes a framework level Area Plan for the rest of the subarea. Following adoption of the Area Plan, annexation and development of individual properties or groups of properties of any size, consistent with the Area Plan, may be approved.

11-57 Within the area identified on Figure 11-4, the central planning concepts are to: create a new, complete community as a node that sets the stage for additional urban growth in the future; and increase the mix of housing and land uses in the area to increase the completeness of the existing neighborhoods inside the UGB.

Rendering of Butler Market Road at Deschutes Market Road. Adjacent residential uses (existing and new) will be served by a new commercial center and improved streetscapes along Butler Market Road and Deschutes Market Road.

11-58 This area shall provide for a mix of residential and commercial uses, including 222 gross acres of residential plan designations and 22 gross acres of commercial plan designations (excluding existing right of way).

11-59 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 178 gross acres of RS, 21 gross acres of RM, and 16 gross acres of RH. Acreages exclude existing right of way. The acreage of RS includes roughly 14 acres for an elementary school site, which may be designated PF if a site has been acquired by the School District prior to completion of the Area Plan. Alternatively, the Area Plan may demonstrate that this area will provide capacity for a minimum of 1100 housing units, including at least 10% single family attached housing and at least 40% multifamily and duplex/triplex housing types. The Area Plan may include and rely on plan designations, zones, special plan districts, and/or other binding development regulations to demonstrate compliance with the specified mix and capacity.

11-60 The street, path and bikeway network shall provide connectivity throughout this area, connect to existing abutting local roads, and provide opportunities for connections to adjacent undeveloped land both inside and outside the UGB. The transportation network shall be consistent with the Bend Transportation System Plan.

11-61 Coordination with the Bend-LaPine School District is required in order to identify a suitable site for an elementary school within this area.

11-62 Coordination with Bend Park and Recreation District is required in order to address provision of parks and/or trails within this area.

11-63 Coordination with Central Oregon Irrigation District is required in order to address circulation and access issues related to the existing canals in this area and to identify opportunities for trails to be co-located with canal easements or right of way.

East Highway 20:

11-64 This area (identified on Figure 11-4) shall provide for affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan, as follows:

- The minimum number of affordable housing units shall be 100% of the housing units developed on the portion of the property shown on Figure 11-4.
- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.

DSL Property:

11-65 Master planning is required for this area. The master plan must be consistent with both master plan standards in the development code and policies 11-66 through 11-74, below.

11-66 The overall planning concept for the DSL property as identified in Figure 11-4 is for a new complete community that accommodates a diverse mix of housing and employment uses, including the potential for a large-lot industrial site.

11-67 This area shall provide for a mix of residential and commercial uses, including 163 gross acres of residential plan designations, 60 gross acres of residential and/or public facility plan designations, 46 gross acres of commercial plan designations, and 93 gross acres of industrial plan designations, including one large-lot industrial site. (Gross acreages exclude existing right of way.)

11-68 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 196 gross acres of RS, 9 gross acres of RM, and 19 gross acres of RH. Acreages exclude existing right of way. The acreage of RS includes roughly 21 acres for an elementary school site and up to 35 acres of parks and public open space, which may be designated PF if land has been acquired by the school or park district at the time of the master plan. Alternatively, the master plan may demonstrate that this area will provide capacity for a minimum of 1,000 housing units, including at least 11% single family attached housing and at least 41% multifamily and duplex/triplex housing types.

11-69 Subsequent planning for this area shall address preservation of at least 50 acres for a large lot industrial site in compliance with the policies in Chapter 6.

11-70 Coordination with the Bend-La Pine School District is required in order to identify a suitable site for an elementary school within this area.

11-71 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

11-72 Coordination with other special districts and utility providers is required within this area.

11-73 Bat habitat should be mapped and protected from development, including a suitable buffer around any identified habitat areas in order to ensure their continued habitat value.

11-74 Trails should be provided along canal easements and through other open space wherever feasible.

The Elbow:

11-75 The City will initiate an Area Plan for the Elbow area. The Area Plan will address policies 11-76 through 11-84. Prior to completion of the Area Plan, annexations in this area must be a minimum of 40 contiguous acres and be the subject of a master plan application which includes a framework level Area Plan for the rest of the subarea. Following adoption of the Area Plan, annexation and development of individual properties or groups of properties of any size, consistent with the Area Plan, may be approved.

11-76 This area, as identified in Figure 11-4, is intended to provide for employment uses to take advantage of good transportation access on Knott Road and 27th and existing city streets (and future improved access with the Murphy Extension) with a mix of residential uses providing a compatible transition from the employment lands to existing neighborhoods to the west. This mix of uses is also intended to increase the completeness of the existing low density neighborhoods.

11-77 This area shall provide for a mix of residential, commercial and industrial uses, including 122 gross acres of residential plan designations, 67 gross acres of commercial plan designations, 76 gross acres of industrial designations, 103 gross acres of mixed employment plan designations, and 75 gross acres of public facilities (excluding existing right of way).

11-78 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 77 acres of RS, 36 acres of RM, and 9 acres of RH (excluding existing right of way). Alternatively, the Area Plan may demonstrate that this area will provide capacity for a minimum of 820 housing units, including at least 17% single family attached housing and at least 47% multifamily and duplex/triplex housing types. The Area Plan may include and rely on plan designations, zones, special plan districts, and/or other binding development regulations to demonstrate compliance with the specified mix and capacity.

11-79 The alignment of a new collector street between 15th Avenue and 27th Avenue / Knott Road shall be determined in coordination with the City, consistent with the Transportation System Plan.

11-80 Subsequent planning for this subarea shall address funding for the Murphy Road extension from Brosterhous to 15th Avenue.

11-81 The street, path and bikeway network shall provide connectivity throughout this area, connect to existing abutting local roads, and provide opportunities for connections to adjacent undeveloped land inside the UGB. The transportation network shall be consistent with the Bend Transportation System Plan.

11-82 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

11-83 Coordination with the Bend-La Pine School District will occur during area planning within this subarea.

11-84 Coordination with other special districts and utility providers is required within this area.

The Thumb:

11-85 Master planning is required for this area. The master plan must be consistent with both master plan standards in the development code and policies 11-86 through 11-91, below.

11-86 The planning concepts for the Thumb, which is depicted in Figure 11-4, include: a new complete community; provision of needed local commercial services to serve the Thumb and existing neighborhoods to the north; inclusion of industrial and other employment uses near the railroad line to take advantage of good proximity to Highway 97 and Knott Road, and, creation of an attractive southern gateway to Bend.

11-87 This area shall provide for a mix of residential and commercial uses, including 44 gross acres of residential plan designations, 86 gross acres of commercial plan designations, 60 gross acres of industrial designations, and 31 acres of mixed employment plan designations (excluding existing right of way).

11-88 In order to provide sufficient housing capacity, the residential plan designations shall include 35 gross acres of RS, 7 gross acres of RM, and 2 gross acres of RH (excluding existing right of way). Alternatively, the master plan may demonstrate that this area will provide capacity for a minimum of 270 housing units, including at least 15% single family attached housing and at least 37% multifamily and duplex/triplex housing types.

11-89 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

11-90 Coordination with the Bend-La Pine Schools District is required during area planning for this subarea.

11-91 Coordination with other special districts and utility providers is required within this area.

Southwest:

11-92 Master planning is required for this area. The master plan(s) must be consistent with both master plan standards in the development code and policies 11-93 through 11-99 below.

11-93 Within the area identified on Figure 11-4, the central planning concepts are to: provide affordable housing opportunities; increase the mix of housing and land uses in the area to increase the completeness of the existing neighborhoods inside the UGB; and provide compatible transitions to adjacent development.

11-94 This area shall provide for a mix of residential and commercial uses, including 26 gross acres of residential plan designations, 8 gross acres of residential and/or public facility plan designations, 3 gross acres of commercial plan designations, and 2 gross acres of mixed use plan designations (excluding existing right of way).

11-95 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 14 gross acres of RS, 14 gross acres of RM, and 5 gross acres of RH. Acreages exclude existing right of way. The acreage of RM includes roughly 8 acres for an elementary school site, which may be designated PF if land has been acquired by the

school district at the time of the master plan. Alternatively, the master plan may demonstrate that this area will provide capacity for a minimum of 240 housing units, including at least 16% single family attached housing and at least 60% multifamily and duplex/triplex housing types.

11-96 This area (identified on Figure 11-4) shall provide for affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan, as follows:

- The minimum number of affordable housing units shall be 125 housing units or 25% of all housing units approved by the City, whichever is greater.
- Affordable housing units shall be affordable to households earning up to 30% of the area median income.
- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.

11-97 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

11-98 Coordination with the Bend-La Pine Schools District is required during area planning for this subarea.

11-99 Coordination with other special districts and utility providers is required within this area.

West Area:

11-100 Master planning is required for this area. The master plan(s) must be consistent with both master plan standards in the development code and policies 11-101 through 11-108, below.

11-101 For the West Area, shown on Figure 11-4, the central planning concepts are to: provide a limited westward expansion that complements the pattern of complete communities that has begun with Northwest Crossing due to the existing concentration of schools, parks, commercial and employment lands; and create a transect from higher densities along Skyline Ranch Road to lower density and open space along the western edge in this area which approaches National Forest land and park open spaces, in order to provide buffers for wildlife and wildfire.

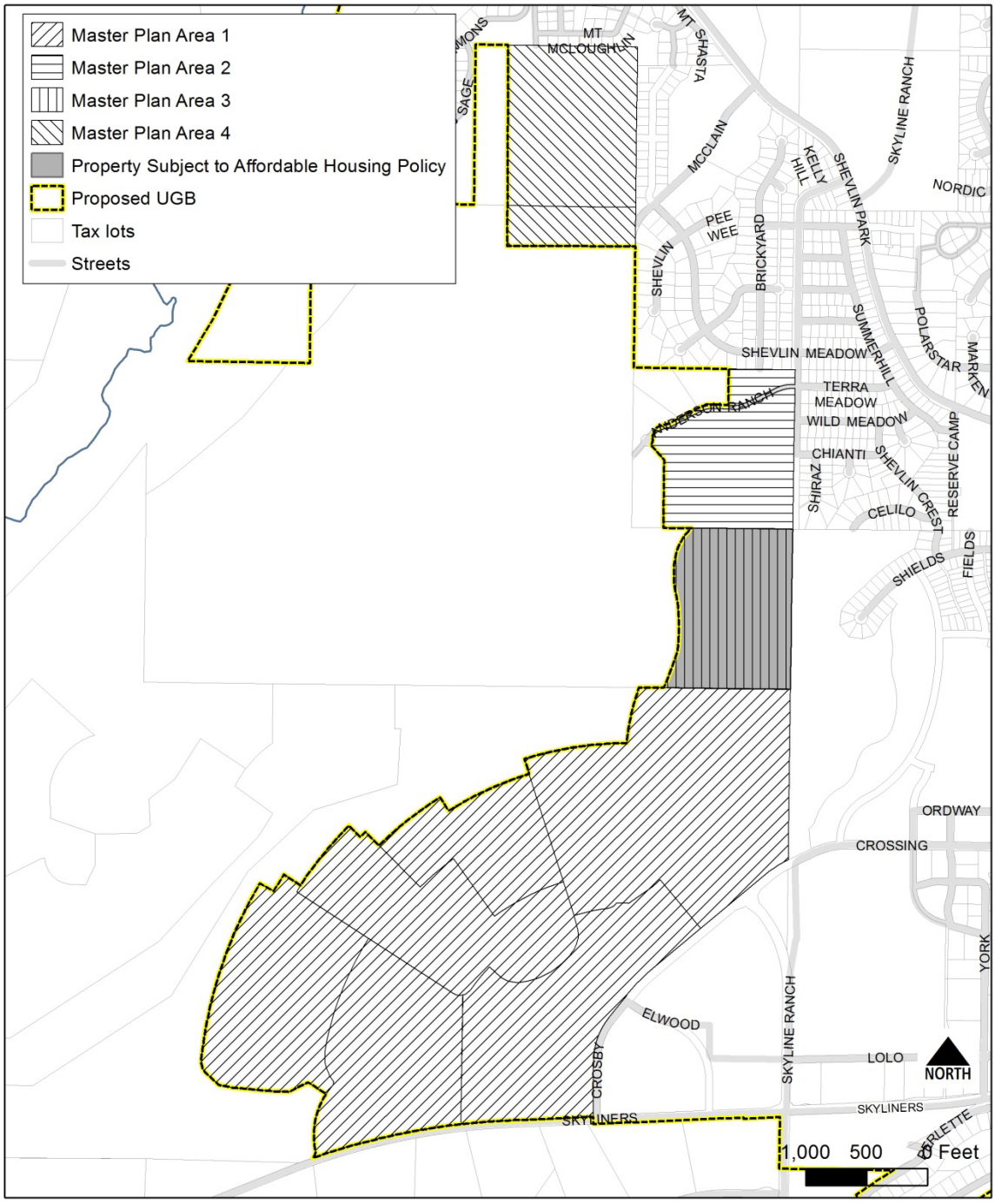
11-102 This area shall provide for a mix of residential and commercial uses, including 321 gross acres of residential plan designations, 7 acres of commercial plan designations, and 14 gross acres of mixed employment plan designations (excluding existing right of way).

11-103 This area shall provide capacity for a minimum of 870 housing units and a maximum of 967 housing units, including at least 9% single family attached housing and at least 21% multifamily housing types (including duplex and triplex). The required minimum of 870 housing units represents 90% of the maximum allowed number of units.

11-104 In the absence of an approved Area Plan for this subarea as a whole, each property included in the 2016 UGB expansion in this subarea (see Figure 11-5 below) shall provide the maximum number and mix of units specified below. The minimum required units (total and by housing type) is 90% of the specified maximum.

- Master Plan Area 1: 650 housing units, including at least 60 single family attached units and at least 142 multifamily and duplex/triplex units.
- Master Plan Area 2: 65 housing units, including at least 12 single family attached units.
- Master Plan Area 3: 136 housing units, including at least 16 single family attached units and at least 59 multifamily and/or duplex/triplex units.
- Master Plan Area 4: 116 housing units.

Figure 11-5: West Area Master Plan Areas and Affordable Housing Policy Applicability



11-105 Master Plan Area 3, identified on Figure 11-5, shall provide for affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan, as follows:

- The minimum number of affordable housing units shall be 20% of all multifamily and duplex/triplex housing units approved by the City.

- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.

11-106 The master plan process shall be used to establish appropriate development regulations to implement the transect concept, measures to make the development and structures fire resistant, and RL plan designation densities within this area while providing for a mix of housing types and clustering developed areas to provide for open space preservation.

11-107 Coordination with Bend Park and Recreation district is required in order to address provision of parks and trails within this area.

11-108 Coordination with the Bend-La Pine Schools District is required during area planning for this subarea.

Shevlin Area:

11-109 Master planning is required for this area. The master plan must be consistent with both master plan standards in the development code and policies 11-110 through 11-115, below.

11-110 The concepts for the Shevlin area, shown on Figure 11-4, are to promote efficient land use and neighborhood connectivity by filling in a "notch" in the prior UGB with compatible residential development; help complete adjacent neighborhoods with small, neighborhood-scale commercial services; and avoid development in sensitive areas nearer to Tumalo Creek.

11-111 The master plan process shall be used to establish appropriate development regulations to implement the transect concept, measures to make the development and structures fire resistant, and RL plan designation densities within this area while providing for a mix of housing types and clustering developed areas to provide for open space preservation.

11-112 This area shall provide for a mix of residential and commercial uses, including 60 gross acres of residential plan designations and 8 gross acres of commercial plan designations (excluding existing right of way).

11-113 This area shall provide capacity for a minimum of 162 housing units and a maximum of 200 housing units, including at least 10% single family attached housing and at least 21% multifamily and duplex/triplex housing types.

11-114 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

11-115 Coordination will occur with the Bend-La Pine School District during area planning for this area.

OB Riley area:

11-116 The City will initiate an Area Plan for the OB Riley area. The Area Plan will address policies 11-117 through 11-121. Prior to completion of the Area Plan, annexations in this area must be a minimum of 40 contiguous acres and be the subject of a master plan application which includes a framework level Area Plan for the rest of the subarea. Following adoption of the Area Plan, annexation and development of individual properties or groups of properties of any size, consistent with the Area Plan, may be approved.

11-117 The OB Riley area, shown on Figure 11-4, is intended to provide for a mix of employment uses to take advantage of good transportation access, while also including residential uses to ensure a complete community and provide a transition to existing urban residential areas to the south. The OB Riley area will also provide an attractive northern gateway into Bend.

11-118 This area shall provide for a mix of residential and commercial uses, including 28 gross acres of residential plan designations, 47 gross acres of commercial plan designations, 41 gross acres of industrial designations, and 21 gross acres of mixed employment plan designations (excluding existing right of way).

11-119 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 27 gross acres of RS and 3 gross acres of RM. Alternatively, the Area Plan may demonstrate that this area will provide capacity for a minimum of 125 housing units, including at least 10% single family attached housing and at least 20% multifamily and duplex/triplex housing types. The Area Plan may include and rely on plan designations, zones, special plan districts, and/or other binding development regulations to demonstrate compliance with the specified mix and capacity.

11-120 The street, path and bikeway network shall provide connectivity throughout this area and connect to existing abutting local roads.

11-121 Coordination with Bend Park and Recreation district is required in order to address provision of parks and/or trails within this area.

North Triangle:

11-122 The City will initiate an Area Plan for the North Triangle area. The Area Plan will address policies 11-123 through 11-131. Prior to completion of the Area Plan, annexations in this area must be a minimum of 40 contiguous acres and be the subject of a master plan application. Following adoption of the Area Plan which includes a framework level Area Plan for the rest of the subarea, annexation and development of individual properties or groups of properties of any size, consistent with the Area Plan, may be approved.

11-123 The concept for this area, shown on Figure 11-4, is to provide for a mix of uses, including residential development to balance the mix of

employment uses in this area and provide a transition to existing rural residential areas to the north.

11-124 This area shall provide for a mix of residential and commercial uses, including 86 gross acres of residential plan designations, 40 gross acres of commercial plan designations, and 22 gross acres of industrial designations, and 26 gross acres of mixed employment plan designations (excluding existing right of way).

11-125 In order to provide sufficient housing capacity and mix, the residential plan designations shall include 60 gross acres of RS, 21 gross acres of RM, and 5 gross acres of RH. The acreage of RM includes 3 to 4 acres for a neighborhood park site, which may be designated PF if a site has been acquired by the Bend Park and Recreation District prior to completion of the Area Plan. Alternatively, the Area Plan may demonstrate that this area will provide capacity for a minimum of 510 housing units, including at least 13% single family attached housing and at least 42% multifamily and duplex/triplex housing types. The Area Plan may include and rely on plan designations, zones, special plan districts, and/or other binding development regulations to demonstrate compliance with the specified mix and capacity.

11-126 The properties identified on Figure 11-6, below, shall provide for affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan, as follows:

- The minimum number of affordable housing units shall be 25% of all housing units approved by the City on each property.
- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.

11-127 As an alternative to meeting the requirements of Policy 11-126, affordable housing, consistent with policies 5-20 and 5-21 of the Housing Chapter of the Comprehensive Plan and the requirements below, may be implemented within the North Triangle as a whole through an area plan, with prior written consent of affected property owners and guarantees in a form acceptable to the City.

- The minimum number of affordable housing units shall be 77.
- Guarantees, in a form acceptable to the City, shall be in place to ensure that affordable housing units will meet the affordability requirements for not less than 50 years.

Figure 11-6: Properties subject to policy 11-126

11-128 Buffering measures are required between industrial uses and abutting residential within and adjacent to this area.

11-129 The street, path and bikeway network shall provide connectivity throughout this area and connect to existing abutting local roads. Circulation plans for this area shall be coordinated with ODOT.

11-130 Coordination with the Bend Park and Recreation District is required to identify a suitable site for a neighborhood park within this area.

11-131 Coordination with other special districts and utility providers is required within this area.

Section 6 of Ordinance 2271

Exhibit F

Amendments to the text of the Preface and Chapters 1, 2, 3, 4, 8, 9, and 10

of the Bend Comprehensive Plan

Preface

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 1998	Resolution #2247	Plan Update
July 5, 2006	NS-2017	
2016	NS-2271	Format update, minor text changes to outdated text

BACKGROUND

Context

Bend is located at the base of the Cascade Mountains at an elevation of 3,600 feet. Its proximity to the Deschutes National Forest, the high mountain lakes, and to the Great Basin plateau makes it a hub for recreation, sporting, and tourist activities.

Bend is the largest urban area in Oregon east of the Cascade Mountains with an approximate population of 79,985 at the start of the 2008-28 planning period. By the year 2028, the urban area population is expected to reach 110,000 persons, with another 10,000 persons within three miles of the urban area.

Bend is the regional trade and service center for Central Oregon. More than two-thirds of all the jobs in the county are in Bend. The wide range of retail businesses, professional and trade services, and specialty trades draws in customers from a five county area.

Purpose of the Comprehensive Plan

The Bend Comprehensive Plan is a guide for making wise land use decisions regarding future development within the Urban Growth Boundary. Chapter 1, Plan Management and Citizen Involvement, provides additional information on the Urban Growth Boundary.

The Plan's goals and policies provide a framework for decisions that are consistent with the physical characteristics, goals, and resources of the community. The basic aim of the Comprehensive Plan is to organize and coordinate complex inter-relationships between people, land, resources, and facilities to meet the future needs of the citizens and to protect the livability of the community.

The Comprehensive Plan is intended for use by local officials, persons with development interests, neighborhood groups, state and federal agencies, and citizens of the community. The Plan provides interesting and factual information about the community's natural features, housing, economic conditions, and topics.
With the rapid population and economic growth of Bend during the 1990s, the community is significantly different from the quiet lumber and agricultural town of the 1950s and 1960s. Similarly, the future look and feel of the community ten or twenty years into the next century will be different from the 1990s. As Bend continues to become more urban in its character, the impact and influence of change will be with us constantly. The Bend Comprehensive Plan is a tool to prescribe how and where change should happen.

Development of the Plan

The first long range, comprehensive plan for the urban area, officially known as the Bend Comprehensive Plan, was prepared in 1974, and approved by the Oregon Land Conservation and Development Commission in 1981. A state mandated "periodic review" of the Plan was conducted in 1989 to bring it into conformance with new state

laws and rules. Aside from the periodic review additions and a few other changes, most of the Comprehensive Plan remained unchanged until the late 1990s.

In early 1994 the City Council and Board of County Commissioners agreed to undertake a major update of the Comprehensive Plan, and this update was completed in 1998. The need to update the Comprehensive Plan in the 1990s was driven by several factors:

- The rapid population growth the community was experiencing;
- New city water and sewer system master plans;
- Several proposed big private or public projects that needed to be tied into the broader community planning;
- New public uses at the edge of the urban area;
- New planning requirements imposed by the state legislature and state agencies;
- Information in the Plan that needed to be updated or deleted; and
- New, important issues to the community that needed to be addressed in the Plan.

The City Council and Board of County Commissioners appointed a 20 person advisory committee, representing a broad cross-section of the community, to guide the update of the Plan. This committee spent 2 ½ years and more than 1,100 person-hours, updating and revising the Comprehensive Plan. The advisory committee prepared an overall vision statement, repeated below, that guided their review of the Plan.

Comprehensive Plan Vision

Bend is a community valuing its natural features of trees, rocks, river, sounds, views and a diverse citizenry that works together creating a healthy legacy and vision for Bend's future livability. The Bend Comprehensive Plan is designed to preserve and enhance this vision for our community.

The city and county also used a variety of activities to provide opportunities for citizens to learn about, and participate in, the update of the Comprehensive Plan. The major activities were:

- Community wide workshops in 1995, coordinated with the local school district and parks district, to discuss planning ideas and gather comments;
- Four community Open Houses in 1997, again coordinated with the school and parks district, to provide information on proposed changes to the Comprehensive Plan;
- Informational flyers, surveys, newspaper articles and other media events in the summer of 1997 to provide information on the updated Comprehensive Plan;

- A survey of more than 210 households regarding their opinions on the urban area transportation system;
- Workshops on both general and specific transportation issues;
- A series of neighborhood planning workshops hosted by Deschutes County and supported by state grants for two areas that will undergo urban redevelopment;
- Numerous presentations to service groups, organizations, and neighborhoods; and
- Several public hearings on the Comprehensive Plan in 1997 and 1998.

A 20-year Plan

The Comprehensive Plan uses a 20+ year planning period that ends in the year 2020. This time frame was used in order to satisfy state requirements for evaluating the 20-year need for some land uses, and because it is about the outside limit for reasonable planning forecasts.

The Comprehensive Plan is not a "saturation plan" that describes conditions under a full or ultimate development of lands within the urban area. Rather, it forecasts the level of population and economic growth to the year 2020 and plans for this growth along with other community needs and desires during the planning period. The Comprehensive Plan establishes land use categories to meet the forecasted needs and maps where these uses shall occur. The zoning for land within the urban planning area must be consistent with the designated land use categories in the Comprehensive Plan.

However, some lands near the edge of the urban area that are without full urban services may have an interim, less intense zoning classification applied to them until full urban services are available to the area.

Format of the Plan

The Comprehensive Plan is divided into this Preface, eleven chapters and the appendices. Each chapter covers a general topic, and most chapters include historic data and forecasts of conditions during the 20-year planning horizon. Background documents or analysis used in the preparation of a chapter are typically not included in the chapter, but cited as a reference or included in the appendices. Background documents are available for review at the City of Bend Development Services Department.

At the end of each chapter are policies that address issues discussed in the chapter. The policies in the Comprehensive Plan are statements of public policy, and are used to evaluate any proposed changes to the Comprehensive Plan. Often these statements are expressed in mandatory fashion using the word "shall", "will" or "must". These statements of policy shall be interpreted to recognize that the actual implementation of the policies will be accomplished by land use regulations such as the city's zoning ordinance, subdivision ordinance and the like. The realization of these policies is subject to the practical constraints of the city such as availability of funds and compliance of all applicable federal and state laws, rules and regulations, and constitutional limitations.

The Comprehensive Plan policies provide a basis for coordinated action by enabling

various public and private interests to undertake specific projects with a consistent understanding of community expectations. Public facilities such as schools, parks, streets, water and sewer systems, civic areas, libraries, and fire stations can be planned in advance of need. A program for land acquisition and construction also can be prepared in advance of need so that the services will be available when and where they are needed. Similarly, special service districts and private utilities can anticipate future service demands and plan facilities so that development can take place in the most economical and timely manner.

These same community policies serve individual property owners and private interest groups as a means of evaluating their individual decisions in light of community objectives. They are able to determine how their individual interests can best be served in a manner that is consistent with the Bend Comprehensive Plan.

Although set up as chapters, the whole Plan is inter-related to form a comprehensive approach to land use planning. No part of the Plan can be viewed without consideration of the other areas of the Plan. Through the eleven chapters and related maps, the Comprehensive Plan meets all the requirements of the 14 applicable planning goals in the state's land use laws and administrative rules.

Plan Maps

The Plan text and policies describe several land use categories that provide for the various types of development expected to occur within the urban area during the 20-year planning period. These land use categories are graphically portrayed on the **Comprehensive Plan Map**.

The major land use categories - residential, commercial, industrial, and mixed-use have very specific boundaries that are shown on the Comprehensive Plan Map. The city and county apply zoning to property based on the Comprehensive Plan Map categories. Changing these boundaries requires a formal amendment to the Comprehensive Plan.

The **Transportation System** is shown on a series of three maps that illustrate different parts of the urban area's multi-modal transportation system. The *Bend Urban Area Transportation Plan Map* shows the existing and future alignments for the arterial and collector street system. The *Bicycle and Trail System Map* shows the existing and future transportation and recreation designated routes within the urban area. Most of the bicycle routes are on arterial and collector streets, but other off-street trail routes are also shown. For a more detailed discussion of these maps see Chapter 7, *Transportation Systems*. The Transit System Map shows a feasible urban area transit route system. For a more detailed discussion of these maps see Chapter 7, Transportation Systems.

Also included in the Plan are other small maps that help to identify or better explain a topic discussed in the chapter. The Destination Resort map in the *Housing and Residential Lands* chapter, and the public parks map in the *Community Connections* chapter, are examples of these types of maps.

Future Plan Updates

The Comprehensive Plan is a document that changes over time to reflect new information and new directions for the future. Amendments or additions to the Comprehensive Plan text, exhibits, and policies go through a public hearing and review process before being adopted by the governing bodies. Changes and updates can be generated in at least six ways:

- ❑ *Regularly scheduled reviews and updates by the city and county*. Every five years, beginning in the year 2000, the city and county will review the population growth, the housing mix and acreage needs, the industrial lands absorption, and the commercial lands absorption against the long-term forecasts in the Comprehensive Plan. Other issues may also be evaluated during these regular views.

- ❑ *Preparation of more detailed refinement plans for neighborhoods or geographic areas.* As provided for in Oregon land use law, the city or county may prepare more detailed land use and development plans for parts of the urban area that have large vacant or under-utilized parcels. Such refinement plans could address future street patterns and other utility systems, housing density and compatible uses, site and design standards, locations for parks, schools, and open space, and other land use issues.

- ❑ *Evaluation of land use topics required to be reviewed under the Oregon Land Conservation and Development Commissions periodic review of the Comprehensive Plan*. The state requires all local plans to be updated periodically to comply with applicable new state laws, administrative rules, or to incorporate new data available to the state.

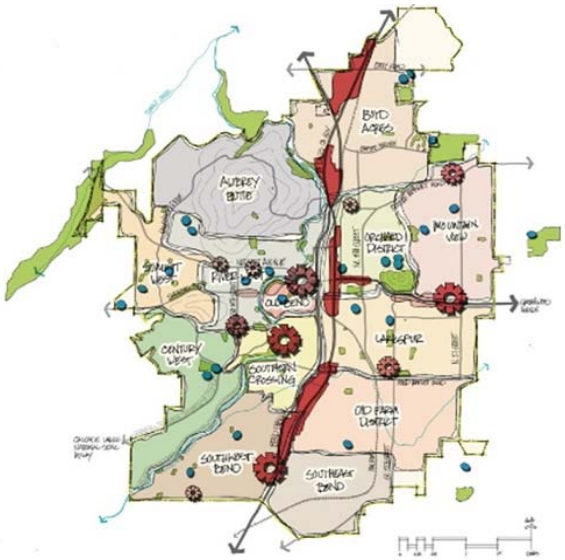
- ❑ *Other state laws or legislative actions that require changes to the Plan outside of the normal periodic review cycle*. The state legislature or the voter referendum/initiative process can require changes to local land use plans within a specific time period.

- ❑ *City or county response to new issues or changes*. Issues that were unforeseen during the development of the plan can arise that have an impact on a particular neighborhood or the whole urban area. The city and county officials can direct staff to amend the Plan to address these issues.

- ❑ *Changes proposed by individuals or other agencies*. A proposal by an individual, corporation, or public agency to change to the Plan text, land use map, other exhibits, or policies shall be considered as determined by the procedures ordinance. A person or agency proposing a change has the burden to demonstrate a public need and benefit for the change.

Chapter 1, *Plan Management and Citizen Involvement*, has more information on managing growth within the urban area, and how citizens can participate in planning for our community.

Chapter 1: Plan Management and Citizen Involvement



Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 1998	Resolution #2247	Comprehensive Plan Update
2016	NS-2271	Format, update, minor text changes to remove outdated text

BACKGROUND

Context

Goals in the Comprehensive Plan express what our residents hope and want Bend to be like in the future. These goals were created through a major update of the Comprehensive Plan in 1995-1998 and further enhanced in 2016 with the UGB expansion. The goals set forth below provide general guidance for improving the character and quality of the Bend area as growth occurs. In addition to these goals, most of the other chapters in the Plan include goals that are specific to the chapter topic.

Community Goals

Create and Preserve 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.

Protect and Enhance Bend's Natural Beauty, Heritage and Natural Environment
As Bend grows, it preserves and enhances natural areas and wildlife habitat. Protect and enhance Bend's natural beauty noting especially the trees, rocks, rivers, view, sounds and historic structures. Wildfire risk management is a key consideration. Bend takes a balanced approach to environmental protection and building a great city.

Plan and Sustain a 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. Opportunities are created for a stable, vital and diverse economy while sustaining Bend's environment/ecological support systems.

Create 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.

Foster a 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. Transportation and land use are integrated to foster livability.

Ensure Quality Design and Attractive Development
Ensure that the "built environment" is as attractive as feasible.

Preserve and Enhance a 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.

Create 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.

Build 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.

Promote Public and Civic Involvement
Encourage involvement by all citizens, corporate and individual, to keep the city vital and the Plan an "evolving vision".

Create Clear and Consistent Implementing Ordinances
Implement the plan through effective, clear and consistent ordinances and language that reflect the intent of the vision.

Managing Growth

Oregon's land use planning program employs land use Goals and administrative rules to guide the efficient planning and development of urban areas. Generally speaking, the major land use needs are planned and allocated within the area, and then urban facilities such as sewer, water, and transportation systems, are designed to support the planned land uses. However, since Bend is a regional economic center and a tourist destination, its street system must support an exceptional number of vehicle trips. This pressure on the transportation system from both internal and external sources requires the city and county to be more thoughtful in tying together land uses and their transportation impacts.

The transportation ⇔ land use connection
Within the Bend urban area there are several physical features that constrict the development of the transportation system, thereby channeling street traffic to a few key routes. Any efforts the city and county can take to reduce or mitigate traffic congestion on the main routes will help Bend remain a place in which people enjoy living and working. The items below provide a brief overview of how the planning of land use and transportation are inter- connected in the Comprehensive Plan. Chapter 7, *Transportation Systems*, provides a more thorough and detailed description of the urban area transportation systems, and their relationship to land uses.

To support a cost effective and balanced land use and transportation system during the 20-year planning horizon the Comprehensive Plan provides for:

- making other types of transportation systems more accessible and more functional through the development of a fixed-route or on-demand or other transit system, completion of the sidewalk system, and adding bike lanes and off-street trails;
- having pedestrian and public transit supportive design standards for commercial developments;
- designating several small commercial centers throughout the community to offer convenient shopping and services within walking distance or short driving distance of neighborhoods;
- adding medium density housing around the new commercial centers to support the centers and offer more opportunities for people to live close to services;
- designing more efficient and creative residential developments that also allow for more compact growth, including the use of neighborhood refinement plans to guide such development;
- supporting residential "in-fill" development, while assuring compatibility with existing residential neighborhoods;
- improving the connection of streets and/or pedestrian corridors within and through neighborhoods to reduce unnecessary out-of-direction trips;
- public policy that encourages the joint siting of new schools and parks for more efficient land use, and also to better link schools with after-school recreation programs; and
- locating new elementary schools and new parks within convenient distance of residential areas served by those facilities.

Urban Growth Boundary

Cities and counties agree on an *Urban Growth Boundary* that separates future urban level development from rural development during the planning period. The Urban Growth Boundary (UGB) is shown on the Comprehensive Plan Map and other maps. A small scale map of the urban area, which shows the UGB, is presented as Figure 1-1 on page 6. In total, the UGB encompasses approximately 33.32 square miles, or about 21,322.2 acres. The UGB expansion will increase the urbanizable area by 2,380 acres.

The amount and type of land within the 1981 state approved UGB was evaluated during the 1994-1998 update process and again during the 2005-2008 UGB Expansion. Based on the analysis for the UGB Expansion, it was determined that there was insufficient buildable land within the boundary to meet the forecast housing and employment needs during the planning period.

The city and county experienced rapid growth between 1998 and 2008. This accelerated growth brought more dramatic changes to the community than have occurred since settlement began approximately 110 years ago. In addition to providing

more land for needed housing and employment, several new schools and public parks will have to be built. Many miles of streets, sewer, water, and electrical lines will have to be installed to support future growth. Much of what is now undeveloped land will become housing, commercial, industrial, or other urban uses. These changes offer both the opportunities for improving the community, and the challenges of maintaining its social and natural character.

The purposes of the Urban Growth Boundary and urbanization policies at the end of this chapter are to promote efficiency in the future growth and development, and to conserve resources by infilling the existing urban area.

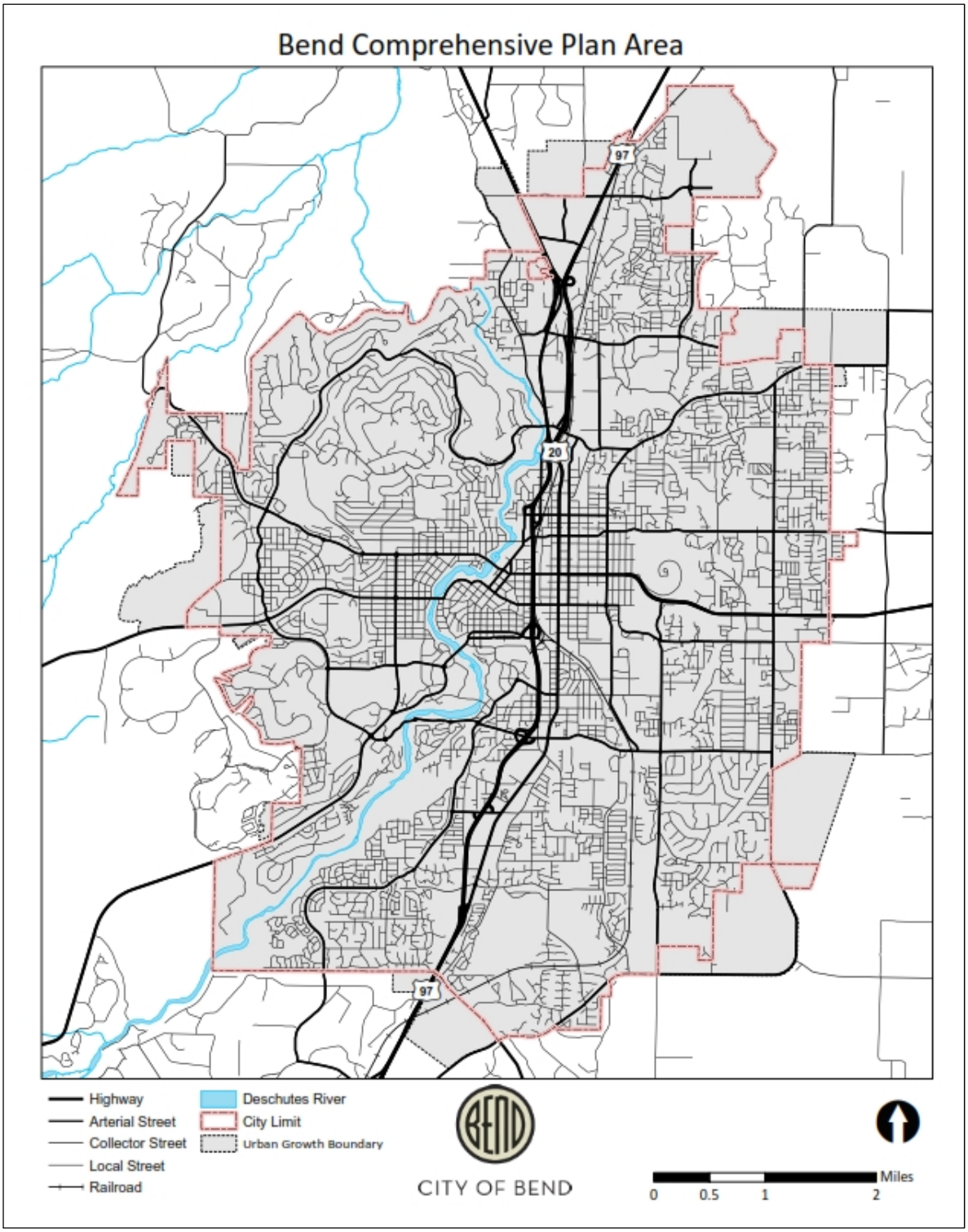


Figure 1-1
Bend Urban Planning Area

Management Agreement
In 1978 the city and county entered into an agreement for the Joint Management of the Bend Urban Area. This agreement sets up formal procedures to implement the Urban Growth Boundary and the Bend Comprehensive Plan consistent with state planning laws. A new management agreement was approved in 1998 that provides for the city to administer all planning and building codes within the Urban Growth Boundary.

This joint management agreement also sets forth responsibilities and procedures for changing the Comprehensive Plan, providing urban services, having consistent development codes and standards, and for reviewing and commenting on land use applications. It is reviewed and amended from time to time to reflect management changes within the urban area. The provisions of the Joint Management Agreement will be revisited with the adoption of the new urban growth boundary. The agreement is on file at the city and county planning offices.

Citizen Involvement

The city and county use a variety of techniques and forums to gather ideas from the citizens of the community, to explain planning concepts in the Comprehensive Plan, and to evaluate public comments. The major citizen involvement activities used during the development of this updated Plan are described in the *Preface* to the Comprehensive Plan.

A permanent and on-going forum for citizen involvement is the Bend Planning Commission. The Bend Planning Commission was established in 1980 by the city and the county. Its role is to carry out a comprehensive planning program, using citizen comments and public hearings when appropriate. The Planning Commission is the official Citizens' Involvement Committee for the urban area, and advises the elected bodies on land use planning programs and policy. In addition to the Planning Commission, there are other citizens' committees that have particular areas of interest that relate to land use and transportation planning:

- Deschutes County Bicycle and Pedestrian Committe
- Bend Traffic Safety Committee

The interest in community and neighborhood involvement is so strong in Bend that several major private developers have used public forums, workshops, and citizens committees to help them design projects that are consistent with the Bend Area Comprehensive Plan.

Policies

General Policy Guidance

1-1 The Goals stated within this Comprehensive Plan are intended to be guiding and aspirational; they are not regulatory policies. The Policies in the Comprehensive Plan are intended to provide standards for the City in adopting land use regulations, and compliance with the implementing

regulations shall be deemed in compliance with the Comprehensive Plan.

1-2 Comprehensive Plan designations may be rearranged on a development site through the Type III Master Plan process in a way that will best meet individual development priorities while maintaining the same overall acreage of each designation and compliance with the Comprehensive Plan policies

Urban Planning Coordination

1-3 Growth in the Bend Area shall be managed through the cooperative efforts of the City of Bend and Deschutes County.

1-4 The City and special districts shall work toward the most efficient and economical method for providing their services within the UGB.

1-5 No new water or sewer service districts shall be created within the UGB without the concurrence of the city.

Development within the Urban Growth Boundary

1-6 New developments shall pay to extend planned sewer, water, and transportation facilities to and through the property if the development occurs prior to the scheduled construction of those facilities shown in the capital improvement plan.

1-7 The City will encourage compact development and the integration of land uses within the Urban Growth Boundary to reduce trips, vehicle miles traveled, and facilitate non-automobile travel.

1-8 The City and county will encourage infill and redevelopment of appropriate areas within Bend Central Core, opportunity Areas and transit corridors (see Figure 11-1).

Refinement Plans (see definition in Glossary and related policies in Chapter 5)

1-9 The City may prepare land use refinement plans for neighborhoods or other discrete geographic areas.

1-10 The area to be included in a refinement plan study shall be approved by the City Council, and the boundary of a study area shall be shown on the zoning map until the study is complete.

1-11 A refinement plan, including detailed maps, policies, and text, when adopted by the city, shall become part of the Zoning Ordinance.

1-12 Refinement plans shall, at a minimum, provide plans for the

development of sanitary sewer, water, and transportation systems and criteria by which to evaluate proposed amendments to an adopted refinement plan.

1-13 Refinement plans may evaluate the need for, and designate the location of, schools and park facilities, public and private open space, future neighborhood commercial or convenience commercial uses, residential, and mixed use areas.

1-14 Refinement plans may include site and building design regulations and alternative street standards.

Citizen Involvement

1-15 The City shall continue to use advisory committees in their planning process, members of which are selected by an open process, and who are widely representative of the community.

1-16 The City will use other mechanisms, such as, but not limited to, meetings with neighborhood groups, planning commission hearings, design workshops, and public forums, to provide an opportunity for all the citizens of the area to participate in the planning process.

Chapter 2: Natural Features and Open Space

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 18, 1998	Resolution #2247	Comprehensive Plan Update
2016	NS-2271	Format update, minor text changes to remove outdated text

BACKGROUND

Context

Open space and natural features are an integral part of the Bend Urban Area plan. A wide range of types and sizes of open space and natural features within the urban area should provide: diverse plant and animal habitat, visual and spatial breaks from urban uses, places for recreation and sports activities, facilities for community events, trails for pedestrian and bicycle transportation and recreation, and many other uses. As defined in the plan, open space and natural features may be in the form of: parks, public school grounds, trails, natural areas and areas of special interest, river and stream corridors, open space easements and right-of-way, and lands excluded from development. The preservation and enhancement of open space and natural features, and their incorporation into the infrastructure of the Bend Urban Area is a function of the plan and related ordinances.

Bend is in the center of some of Central Oregon's most exquisite natural resources. The Deschutes National Forest to the west offers easy access for multiple recreational activities, and provides the backdrop of mountain peaks captured in thousands of photos of Bend. To the east of the urban area, there are thousands of acres of juniper and sagebrush lands. These lands form the edge of the Great Basin, and offer a different type of open space.

The interaction of land, water, plants, and wildlife through the millennia created a place that attracted—and still attracts— people because of its beauty and natural features. Bend is a community that values the area's natural features and has tried to incorporate natural features in the design of the built environment. Volcanic rock has been incorporated into hundreds of retaining walls, foundations, porches, steps, chimneys, and even in the main walls of homes and businesses. Public parks and trails follow the river through town. Mature pine and juniper trees have been preserved in developments, in parks, and in the design of sidewalks and streets.

Maintaining the natural features and open space in an urban area is a difficult task, and one that becomes more complex during periods of rapid population growth. However, providing open space in the urban area for the benefit of existing and future residents is important. To help ensure Bend's livability, the following additional goals should be implemented to provide long-term protection of open space and natural features:

- to preserve interesting and distinct geologic formations and areas of natural vegetation;
- to provide land for recreational uses such as hiking, photography, bicycling, jogging, or fishing;
- to preserve water resources, riparian areas, and wildlife habitats;
- to establish a system of trails, greenways and wildlife corridors that are interconnected;
- to shape the urban development and provide visual relief from developed land;
- to soften the appearance of street corridors with planter and median strips;
- to encourage environmental awareness so that citizens will become stewards of our natural areas; and
- to support the coordinated efforts of public agencies, private organizations and individuals to preserve and enhance the area's natural features and open space.

The Bend Comprehensive Plan and implementing codes support management practices to

preserve, maintain, and create natural features, open space, and Areas of Special Interest. The Preamble, the goal statements, and several Plan policies in this chapter speak to the importance of preserving and managing natural features. The city and county zoning codes also regulate development within the Deschutes River Corridor to protect the riparian areas and river rimrocks. Site plan reviews provide the opportunity to preserve natural areas through building setbacks, conservation easements, and other measures.

Overview

This chapter describes the many types of open space and natural features that add to the quality of life for our residents. Public park land and natural areas, an important component of Bend's quality of life, are mentioned briefly in this chapter as a type of open space. The public parks and recreation programs in the urban area are described in more detail in Chapter 3, *Community Connections*. Other related topics that also contribute to our quality of life are covered in the Chapter 9, *Community Appearance* and Chapter 10, *Natural Forces*.

That the settlement of Bend is here at all is a result of dynamic natural forces that shaped the landscape. The lava flows and volcanic ash, in place before the elk and cougar roamed the area, form the canyon walls and punctuate the urban area with rock outcroppings, ridges, and cinder cones. The Deschutes River, and smaller streams that have long since disappeared, cut through the lava and ash, and brought life to the land. Animal and plant species that adapted to the dry summers and snowy winters of Central Oregon over hundreds of thousands of years still grace the urban area today.

A city is the sum of physical, biological, and historical processes that shape the social values and image of the community. The natural features such as the rock outcroppings, native vegetation, the river, and wildlife frame Bend's special character and sense of place. Which natural features have some intrinsic value, and how much land should be preserved, are questions that Bend area residents wrestle with as they seek to balance the value of growth and the value of preserving natural areas.

As regional and national developers "discover" Bend they seek to bring their national look to the urban area. The city and county will need to be stronger in reflecting the community's desire to incorporate natural features and native materials into commercial and residential development.

Open Space

The irregular terrain and native vegetation in Bend give the area a distinctive visual character and quality. These features limit views within the community, thereby creating a sense of a smaller urban area. Land in all parts of the urban area that has been vacant for decades is being developed. This development is changing the feel of the community from a rural town to an urban city. The expansion of development may reduce or change the open space and natural features that "break-up" the appearance of the man-made environment.

Open space is clearly a broad term that can apply to many types of undeveloped and improved land. Table 2-1 describes six types of "open space" that exist to a greater or lesser degree within the urban area.

Table 2-1 Types of Open Space

Table	Purpose	Examples	How to provide/conserve
Natural areas	• retain or restore natural landscape and vegetation • provide wildlife habitat	▪ undeveloped park or public land ▪ landscape areas left in natural state ▪ PUD common areas ▪ subdivision common areas	o PUD development o flexible subdivision standards o commercial landscape standards o private or public land trust
Large developed	• active or passive recreation • places for gatherings	▪ community and neighborhood parks, ▪ school grounds, ▪ PUD common areas, ▪ golf courses	o property tax revenues o user fees / SDCs o PUD requirements o private investment
Small developed	• areas for quiet enjoyment • relaxation or resting spot • visual break	▪ 'pocket parks', ▪ excess right-of-way, ▪ planter in middle of cul-de-sac bulb, ▪ subdivision entrance, ▪ commercial plaza, ▪ grounds around public utility facilities	o require during development o property owners association o flexible subdivision standards o property tax measures o sensitive design and construction
Corridor or linear	• visual break • community appearance • design rhythm • pedestrian amenity • wildlife corridor	▪ irrigation canals ▪ developed trails ▪ river canyon ▪ pedestrian walkways ▪ street planter strip and median strip	o easements or dedications o setback regulations o transportation corridor designs o property tax revenues
Perimeter	• physical or visual break between uses • passive recreation • wildlife habitat / corridor	▪ forest and BLM lands, ▪ regional park land ▪ subdivision buffer to protect wildlife	o public acquisition or ownership o developer design o conservation easement
Private spaces	• passive or active recreation • relaxation and resting • wildlife habitat	▪ house or multi-family yards ▪ private recreation facilities	o private ownership o association dues o land trust purchase

The list below is from the city's inventory of open space lands held by both public and private parties. This list was recently updated to reflect more current land holdings. The inventory is based on tax parcel ownership, and therefore provides only a rough estimate since some trail corridors, PUD common areas, irrigation District easements, and golf course properties may not have distinct tax parcel numbers.

Public park and recreational facilities	605	acres
City, county and other public properties	1,321	acres
School district holdings	524	acres
Private open space and recreational sites	1,537	acres
Irrigation Districts	178	acres
Total Acres	4,166	acres

Although this number gives a rough estimate of total acreage, it does not describe the size, type, or land use that is currently considered as "open space." The city and county will continue to monitor the creation and conversion of open space in the urban area, and evaluate or modify as necessary the open space designations on the Plan map. The types and amount of open space will be reviewed in future updates of the Plan.

"Areas of Special Interest" and Natural Features

One of the common desires mentioned by residents through more than 20 years of community planning has been to retain and conserve the natural character of Bend as the community grows and changes. Although it is difficult to precisely define what "the natural character" means to people, it can be considered a composite of features typical to Bend: ancient volcanic rock outcroppings, large ponderosa pines and junipers, the Deschutes River, improved public and private open space, and a relative abundance of wildlife and waterfowl.

"Areas of Special Interest" are designated on the Land Use Map because they have features typical of Central Oregon, or represent important wildlife areas. The most significant are the River Corridor Areas of Special Interest along the Deschutes River, which includes the river canyons and rimrocks in the north and south portions of the urban area. At the south edge of the urban area the River Corridor Area of Special Interest includes wildlife habitat areas along the river canyon and a cinder cone. The smaller, scattered Areas of Special Interest on the Plan Map are the more prominent rock outcrops and rock ridges in the urban area. They are not specifically inventoried with respect to size, quality, or importance. These high points break the line of sight so that the area retains a feeling of undeveloped open space. Because these

Areas of Special Interest are small and the scale of the Plan Map is large, the indication on the Map represents the approximate location of the area. More detailed contour maps have been developed and the sites inventoried to determine the specific boundaries of the Areas of Special Interest.

Keeping these features relatively intact will help retain the natural character of Central Oregon as the community grows. The Areas of Special Interest and other natural areas can be retained as either public or private open space. Some sites within the urban area are already protected because they are owned and managed by public agencies.

The city has changed its codes to provide incentives or encourage developers to preserve natural features. Such code changes shall include, but are not limited to, the following:

- A new “cluster housing” subdivision option specifically aimed at preserving natural features;
- Flexible minimum residential density standards on sensitive lands to protect natural features.
- Provide density credit equivalent to the area being preserved;
- Flexible setbacks, lot coverage, and parking standards for site development;
- Opportunities for tax benefit in accordance with the provisions of the Deschutes County Tax Assessor;

Local governments and special districts can also preserve or conserve natural areas through several non-regulatory measures. They can:

- seek donations or gifts of land from private parties;
- request transfer of land from federal agencies or other governmental organizations;
- purchase land using revenue from bonds, system development charges, or other fees;
- obtain conservation easements along the river or other sensitive areas to protect wildlife habitat;
- include natural features and open space in the design of reservoirs, pump stations, and other such utility facilities; and
- locate transportation and utility systems to avoid natural features and Areas of Special Interest.

Natural areas can also be retained in private ownership in a variety of ways without adversely affecting the density or development potential of a site. The city and county encourage the private sector to preserve natural areas within subdivisions and other developments. Many local developers have accommodated the goal of conserving natural features by incorporating rock outcroppings, mature trees and native vegetation and related features into their projects by:

- including them within common areas in Planned Unit Developments or subdivisions;
- including them within the undeveloped street right-of-way;
- adjusting lot lines and street patterns to leave them in the non-buildable setback areas; and
- making them part of the required landscape area in commercial, industrial, and multi-family projects.

Deschutes River Corridor

The Deschutes River is a thread that weaves the fabric of the community together. It runs for eight miles through the middle of the urban area, and flows past industrial, commercial, mixed-use, parks, and all categories of residential lands.

The river has served many needs of the community, and in doing so, has become a common reference for the citizens. The Deschutes River was used to transport and store logs for the two sawmills south of downtown. It is a source of water for agricultural lands and power for homes. It has been the setting for recreation, community festivals, and entertainment for decades. With stretches of both fast-moving and still waters, the Deschutes River provides food and home for wildlife, and a respite for humans from the pressures of work and life.

The importance of the river is underscored by state and local actions. In 1983 Deschutes County and Bend established a moratorium on hydroelectric facilities and created the Deschutes Basin Task Force committee to study the natural resources of the Deschutes River and its tributaries. The reports and other studies produced by this task force are background documents for this Plan, and the work from this committee influenced the development of rules to protect the river resources. Policy recommendations from the Task Force are included in a separate section of policies in this chapter and also included in the Deschutes County Comprehensive Plan.

In 1988 a statewide voters' initiative added several miles of the Deschutes River to the state's scenic waterway program, including about two and one-half miles within the urban area. The area from the south urban growth boundary line to the Central Oregon Irrigation district diversion is classified as the *South Bend River Community Area* in the state's scenic waterway program. At the other end of the urban area, the stretch of river from the south edge of Sawyer Park to the north urban growth boundary is classified as the *North Bend River Community Area*. Both scenic waterway areas are considered significant "Goal 5" resources under Oregon's land use planning program. The Oregon Parks and Recreation Department has the authority to review and approve any development along these scenic waterway segments. In addition to the river segments protected by the State, the City recognizes the significance of the north and south river canyons for their beauty and recreational opportunities. Both the north and south river canyons have been included in the City's inventory as a "goal 5" scenic resource.

In the early 1990s the city and county adopted special Deschutes River Corridor development standards to recognize and respect the unusual natural beauty and

character of the Deschutes River. The city has also adopted a Mixed-use Riverfront zone that allows for the redevelopment of land along the river previously used by sawmills. This zoning district is designed to enhance the natural character of the river and to encourage access to and the enjoyment of the river corridor.

Wetlands and Riparian Areas

Wetlands and riparian areas have a variety of native plant species that are adapted to growing in locations where the soils are wet during all or part of the year. Well established wetlands and riparian areas provide a complex ecosystem that support a diverse combination of plants and animals.

It is important to conserve and improve the wetlands and riparian areas along the Deschutes River and Tumalo Creek in Bend. These areas serve several functions that protect and enhance the quality of both animal and human life within the urban area in many ways. Wetlands and riparian areas:

- Reduce stream velocities that can erode or damage stream banks and property.
- Provide storage for water during peak flows and flooding conditions.
- Trap or filter sediment and runoff water from upland areas and impervious surfaces.
- Provide shade over the river that helps water quality by reducing the warm water temperatures that produce algal blooms.
- Provide shade to help moderate water temperature to support fish and other aquatic animals.
- Provide vegetation and woody debris that serve as habitat and nesting areas for a variety of aquatic animals, birds, and mammals.
- Provide a safe corridor for birds, amphibians, and mammals that live and feed along the river.
- Provide a transition area between aquatic and upland habitat areas during animal migration.

Wetlands within Bend were inventoried and evaluated in the summer of 2000 as part of the preparation of a Local Wetland Inventory, a required Periodic Review update of the Comprehensive Plan. The photo below is an example of the significant and non-significant wetlands mapped during this Local Wetland Inventory process. Table 2-2 lists the significant wetlands. All of the significant wetland sites are along the Deschutes River.
Bend's Local Wetland Inventory replaces the older National Wetlands Inventory map for the urban area.

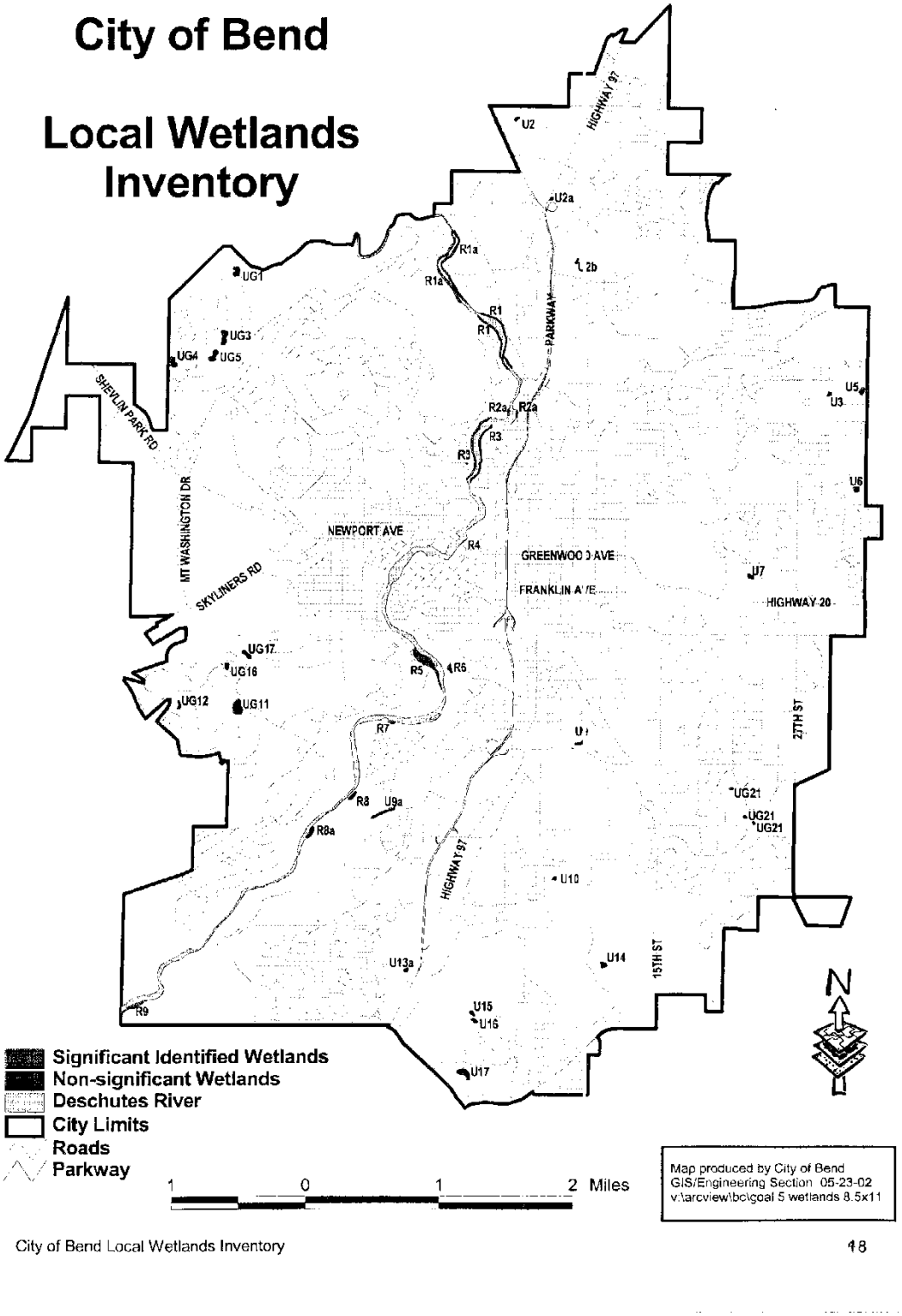
In 2000, the riparian areas within Bend were also inventoried and evaluated. The

riparian area along the Deschutes River and Tumalo Creek are considered significant resources under Statewide Planning Goal 5. Conflicting uses within the riparian corridor are primarily existing and future residential development, new park development, commercial development and other uses such as roads, trails, and docks.

Any development within the bed of the Deschutes River or Tumalo Creek, or within the riparian corridor, including the removal or enhancement of riparian vegetation, must meet standards in the city's land division and zoning codes. In addition to local code requirements, the Oregon Division of State Lands and Oregon Department of Fish and Wildlife have responsibility to review and approve developments within wetlands and the Deschutes River.

Table 2-2 Significant Wetlands in Bend

Inventory Field Code	General Location of Wetland
R9	At south edge of UGB on east side of river. Land area about 2.5 acres
R8a	Upstream from COI hydroelectric plant. Land area about 1.5 acres.
R8	Downstream from COI hydroelectric plant. Land area about 1 acre
R7	Downstream from old log deck footbridge, east side. Land area less than 1 acre.
R5	Upstream from Colorado Ave. bridge on west side. Land area about 6.5 acres.
R4	Downstream below Newport Bridge on east side. Land area about 1 acre.
R3	Both sides of river below 1st Street rapids along the River Run trail and below cliffs. Land area about 5 acres.
R2a	Just upstream from North Unit dam. Land area about 2.5 acres.
R1	Between Riverhouse motel to Sawyer Park. Land area about 5 acres.
R1a	Series of small wetlands from Sawyer Park to RimRock Village footbridge. Land area about 3 acres.



City of Bend Local Wetlands Inventory 48

Fish and Wildlife

There are several key wildlife areas in Bend. The most important, and most diverse, wildlife area is the riparian corridor and canyon walls along the Deschutes River. The combination of still waters, rapids, the many species of shrubs, bushes, and trees, and the rock outcroppings provide a variety of important habitats and food sources. Wildlife species that inhabit the Deschutes River corridor include: deer, elk, cougar, otter, beaver, mink, raccoon, osprey, red-tailed hawk, bald eagle, kingfisher, trout, whitefish, and several species of reptiles, amphibians, and waterfowl. Although there are many species that occupy the river corridor, the Oregon Department of Fish and Wildlife has determined that there are no significant wildlife habitat areas or nesting sites within the urban area that require special land use protection. Even though there are no "significant" wildlife resource areas, because of its value to wildlife and its related benefit to area residents, the river canyon corridors in the south and north parts of the urban area identified as an Area of Special Interest in the Comprehensive Plan and shown on the Plan Land Use Map.

At the west edge of the urban area is Tumalo Creek, a second important riparian and wildlife area. The Bend Metro Park and Recreation District manages about 600 acres along the creek for passive recreation such as hiking and picnicking, and has designated its property as a wildlife refuge.

Most of the area along Tumalo Creek is in a more natural condition than the urban portion of the Deschutes River. Because of that, the Tumalo Creek area is a more diverse and complex habitat than the Deschutes River corridor, and supports larger wildlife such as coyote and cougar. The Oregon Department of Fish and Wildlife has not identified any significant habitat areas or nesting sites within the city portion of Tumalo Creek that warrant special protection measures.

West of the urban area in the Urban Reserve and adjacent forest lands there are areas where deer and elk herds feed during the winter when they move down to lower elevations out of the deep snow.

The winter range is mainly north of the river, but herds may also move across the river into the southwestern portion of the urban area. The Oregon Department of Fish and Wildlife has designated and mapped elk habitat and deer winter range areas, but these designations do not extend into the urban area. Lands within the UGB are not critical to managing the elk herds and maintaining healthy herd populations.

In addition to these two areas, there are many smaller, more separate enclaves of natural features and native vegetation that the community seeks to conserve within developments. Several species of squirrels and chipmunks, lizards, snakes, quail, and many other bird species all find food and shelter in small natural areas and even in patches of natural habitat common to many residential yards.

Besides being beneficial to the wildlife, these habitat areas also provide opportunities for residents and visitors to observe and enjoy the interaction of natural plant, animal,

and aquatic communities within our urban area.

Policies

Natural Features and Open Space

2-1 The city will inventory and maintain a list of natural features and open space lands that are important to the community.

2-2 The city and Bend Metro Park and Recreation District shall share the responsibility to inventory, purchase, and manage public open space, and shall be supported in its efforts by the city and county.

2-3 During January of each "odd numbered" calendar year, individuals may apply to the City for new ASI designations to be added to the Comprehensive Plan and the zoning maps. During the same period of time, the City shall review city owned properties for potential new ASI designations.

2-4 Detailed maps of the Areas of Special Interest shall provide guidance to property owners and staff in interpreting the ASI boundary location.

2-5 The City shall review proposed developments that include Areas of Special Interest and natural features identified on the Plan Map to ensure they follow the policies of this Plan.

2-6 Major rock outcrops, stands of trees, or other prominent natural features identified in the Comprehensive Plan shall be preserved as a means of retaining the visual character and quality of the community.

2-7 Natural tree cover should be retained along streets in new developments to retain the natural character of Central Oregon within the urban area as the community grows.

2-8 All residential development should respect the natural ground cover of the area, and the city shall work with developers to preserve mature trees within the subdivision.

2-9 The City shall develop standards to conserve mature native trees and standards that describe the types of trees for commercial and industrial developments that are compatible with Central Oregon's climate.

2-10 The City shall participate with other governments, special districts, non-profit organizations, land trusts, interested businesses, and citizens in protecting open space.

2-11 The City shall develop flexible subdivision and development standards that make it easier for developers to provide open space within a neighborhood.

2-12 The City shall evaluate and adopt standards for the types of landscape materials and amount of open area buffers around structures that reduce the risk of loss from wildfires at the edge of the urban area.

2-13 The City shall have the primary responsibility for providing opportunities for the creation and management of private open space areas.

2-14 The City will consider how best to protect important native fauna and flora within the Bend urban area, as identified by the open space and natural features inventory.

Deschutes River Corridor

2-15 The City shall seek opportunities to retain the banks and canyon of the Deschutes River as public or private open space throughout its entire length within the planning area.

2-16 Within the Areas of Special Interest designated on the Plan Map, the city and county may allow developments that carry out the intent of the Plan to enhance the variety and livability of the Bend Urban Area, and provided that such developments:

- are not subject to natural hazards;
- would not inflict irreversible harm to the riparian zone;
- would enhance public open space, parks and access;
- are designed to be compatible with natural features; and
- provide access to the river or a trail along the river corridor to the extent allowed by law.

2-17 The City shall prepare development regulations to further reduce visual and ecological impacts of development along Tumalo Creek and the Deschutes River.

2-18 The City shall request that the ODFW develop a list of trees and vegetation appropriate for planting along the Deschutes River. The list shall be used during design review of proposed riverfront development when landscaping or screening issues are considered.

Fish and Wildlife

2-19 The City shall ensure through conditions of approval that development in the Urban Reserve Area adjacent to or within one

mile of lands designated by the County's wildlife overlay zone incorporate setbacks or buffers to protect designated wildlife areas.

2-20 All trout spawning areas shall be considered significant habitat and shall be protected.

2-21 The City shall promote and support educational programs on riparian natural history, river maintenance and courtesies, impacts of habitat alteration, and habitat disturbance by domestic animals and human activities.

2-22 The City shall request that the USFS and ODFW adopt a winter elk management plan for the Benham Falls elk herd. Emphasis should be given to identification of their sensitive habitat in order to minimize potential conflict with development and recreational activities.

2-23 If significant Goal 5 wildlife habitat areas or nesting sites are documented during future Periodic Review inventory work the City will adopt new protection measures if existing codes are not adequate to protect the resource.

Wetlands and Riparian Areas

2-24 The City's Local Wetland Inventory map and list in the Comprehensive Plan replaces the National Wetlands Inventory map for the area within the Urban Growth Boundary.

2-25 Wetland areas that are significant Goal 5 resources to be protected through the city's riparian corridor standards are those areas listed and mapped in the Comprehensive Plan.

Deschutes Basin Study Policies

The following policies were developed by the city, county, and a citizens committee in the late 1980s in response to a number of issues that could impact the Deschutes River. Most of the policies deal with issues of regional or statewide significance, and are therefore beyond the scope of the Bend Area Comprehensive Plan.

1. The City and county shall establish a water conservation committee including, but not limited to, local representatives from the irrigation districts, Department of Water Resources, Department of Fish and Wildlife (ODFW), United States Forest Service (USFS), Deschutes County and the City of Bend Planning Department, and Deschutes County and Bend Planning Commissions to provide an ongoing forum regarding water management on the Deschutes River and its tributaries and to make recommendations to appropriate agencies. The committee should:

    i. Request assistance through Bonneville Power Administration's (BPA) technical assistance program for technical improvements in methods of irrigation and means of conservation of both water

and energy.

ii. Request assistance from the Water Resources Department, Bureau of Reclamation, and Soil and Conservation Districts to initiate an in-depth study of, and to set priorities for, actions that should be taken to improve the irrigation districts' delivery systems.

iii. Assist the county and City in the implementation of the goals and policies of this section.

2. The City and county shall petition the Water Resources Department to amend the appropriate provisions in the Deschutes River Basin Plan to reflect the recommendations of the River Study Task Force.

3. The City and county shall petition the State Legislature to amend state law to designate in- stream use as a beneficial use to ensure that rights designated to in-stream use shall not be subject to downstream appropriation by holders of equal or junior rights, and petition the Water Resources Department to adopt a uniform, easily-accomplished process for the transfer of water rights in the Deschutes River Basin to in-stream use.

4. The City and county shall petition the Bureau of Reclamation to conduct a feasibility study on the Manner Reservoir site, including (a) the non-irrigation flow required for filing, (b) to what extent gravity feed irrigation would be possible, and (c) to what extent low flows below Wickiup Dam could be augmented during the non-irrigation season.

5. The City and county shall petition the Bureau of Reclamation, USFS, United States Geological Survey (USGS), and the Oregon Department of Environmental Quality (DEQ), to establish a bedload of sediment monitoring program and to determine an appropriate maximum discharge from Wickiup Dam, which program addresses the effects of bank erosion on rehabilitation of spawning habitat, riverfront property, recreation and scenic values, and accomplishes the determination of flow regime through interagency cooperation with the affected irrigation districts.

6. The City and county shall petition the Bureau of Reclamation to determine what the consequences would be to irrigation districts, recreation use, and the stabilizing of water releases below Wickiup Dam by maintaining a lower level of water in Crane Prairie Reservoir, and diking off known high loss areas within the reservoir to minimize excess seepage.

7. The City and county shall encourage the Water Resources Department, irrigation districts, and municipalities utilizing diverted waters to enforce the "without waste" provision in appropriated water rights.

8. The City and county shall support efforts by the irrigation districts to provide financial incentives to conserve water. This incentive could be determined for example, by a water use fee on the minimum amount of water required (commensurate with the plant/soil requirements determined by the soil and

water conservation districts) and an excess charge for water used over the base amount.

9. The city and county shall support efforts by the irrigation districts within the upper and middle Deschutes River Basin to allow expansion of irrigated land within a district's boundaries, as part of a means to share conserved water, for those districts that implement water conservation and in-stream flow enhancement programs.

10. The City and county shall encourage examination by irrigation districts and the Water Resources Department of options for providing additional flows below the North Canal Dam during the irrigation season. These additional flows shall not take the place of the current 30 CFS spilled by agreement with Central Oregon Irrigation District (COID), and North Unit Irrigation District (NUID). Options that might be considered include shared conserved water, public participation in irrigation district improvements, public "buy down" of interest rates on improvement loans, and public or private purchase/transfer of water rights for in-stream use.

11. The City and county shall continue to replace the Tumalo water supply pipeline. When this pipeline is complete, gates should be installed at the intake, which would help stabilize withdrawals from Tumalo Creek.

12. The City and county and Tumalo Irrigation District shall explore options to improve in-stream flows and fish habitat in Tumalo Creek. Tumalo Irrigation District should consider apportioning their water draws to maximize the use of the Tumalo Feed Canal rather than the Columbia Southern Canal. This action should increase water flows through Shevlin Park and minimize the excessive water losses that now occur in the Columbia Southern Canal.

13. The City and county shall continue to strongly support and promote the conservation of all forms of energy resources through cooperation with the Northwest Power Planning Council, Bonneville Power Administration programs, recycling, solar ordinances, energy-efficient building standards, and appropriate geothermal resources.

14. Hydroelectric projects that are not physically connected to an existing dam, diversion, or conduit are prohibited.

15. The City and county shall develop a program to assure that hydroelectric projects located within existing man-made transmission systems and using existing flow regimes, or physically connected to an existing dam, diversion, or conduit, but not using existing flow regimes, are subject to the following provisions:

    i. Are consistent with federal and state law.

    ii. Hydroelectric projects shall not increase the maximum surface area of an impoundment behind an existing dam or diversion.

    iii. Hydroelectric projects shall not be located in significant/sensitive

fish or wildlife areas unless it can be demonstrated that the project, if constructed, would restore significant/sensitive fish or wildlife habitat in the reach affected by the project.

iv. Hydroelectric projects shall stabilize stream flows, restore degraded trout habitat, and provide public access to as great an extent as practical.

v. Hydroelectric projects shall avoid adverse impacts if possible. Where not practicable, impacts shall be minimized, while providing for restoration of already adversely impacted areas along the river or stream. Restoration does not necessarily have to be in the immediate project vicinity.

vi. Hydroelectric projects shall have no adverse impact to water-related and water- dependent recreation unless it can be shown that existing water-related and water- dependent recreation of the same type, quality, and quantity as that which may be lost can be restored or enhanced in the project vicinity. Recreational activities include those activities that occur now and which may reasonably be expected to occur in the future.

vii. Hydroelectric projects shall include a river restoration plan documenting both on-site and off-site restoration and enhancement strategies consistent with adopted goals and policies. The plan shall identify costs, time schedules, and coordination actions with all affected parties. The plan shall address, but not be limited to stabilizing water flows, trout habitat restoration, and public access. No hydroelectric project shall be permitted until the plan has been approved through the public review process.

viii. Hydroelectric projects shall post a performance and restoration bond to ensure implementation of the approved restoration plan.

ix. Hydroelectric projects shall be consistent with the provision of the Columbia River Fish and Wildlife Program and the Northwest Power Plan as adopted by the Northwest Power Planning Council.

16. The City and county shall recommend to the State Transportation Commission that the Deschutes River from below Wickiup Dam downstream to the first COI diversion, and from Sawyer Park north to the county line be included in the State and Federal Scenic Waterways Programs.

17. The City and county shall support the designation of appropriate segments of Fall River, Little Deschutes River, and Crooked River as state and/or federal scenic waterways.

18. Support the creation of a nonprofit, private organization that would take a complementary role in the acquisition of property to further the goals of preserving areas for the scenic, recreational, fish and wildlife values.

19. Buildings near the riverfront district should not constitute a physical barrier

between the core and the river.

20. The City and county may require public access for any land use action adjacent to the Deschutes River and Tumalo Creek. Access may be limited to foot traffic only; other non-motorized traffic may be negotiated by the city or county.

21. The City and county shall include in all public access easement provisions addressing safety, security, vandalism, litter and any other maintenance concerns expressed by the landowner. The cooperation of the State Police and County Marine Patrol should be sought in working with these landowners and in maintaining the easement agreement.

22. The City and county may accept by donation, fee title ownership for any riparian land for which public access is being required. If the city or county refuses to accept ownership, any required public access shall be waived.

23. The City or county may grant exceptions to the public access requirement where access would be near the nest sites of protected or sensitive wildlife species. In such cases, the city or county shall instead require a conservation easement to protect the nest sites from harassment and disturbance, using the assistance of the USFS, ODFW, and citizens knowledgeable of the nesting requirements of these species prior to drafting the easement.

24. The City and county shall request the Legislature to allow the County Assessors to recognize these public access easements in their assessment policies.

25. The visual impact of excavations or structures that will be erected or substantially modified along the rimrocks bordering the Deschutes River or Tumalo Creek shall be minimized.

26. Citizens groups, business associations, and private foundations and organizations should be involved in developing and implementing a greenway plan along the Deschutes River and Tumalo Creek.

27. The City and county shall support a riverfront development plan in conjunction with a county- wide greenway project.

Chapter 3: Community Connections

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 18, 1998	Resolution #2247	Comprehensive Plan update
October 4, 2006	NS-2025	Text amendment to remove “Mill A” from inventory of historic sites
July 15, 2009	NS-2123	Text amendment to add Nels and Lillian Andersen House to Table 3-1
June 17, 2015	NS-2243	Text amendment to remove Brooks Scanlon Craneshed building from the inventory of historic sites.
2016	NS-2271	Format update, minor text changes to remove outdated text

BACKGROUND

Context

Within the Bend Urban Area are many public agencies and private organizations that impact the governmental, educational, recreational, social and cultural aspects of our community. These agencies include state, county and city governments, Bend-La Pine School District and Bend Metro Park and Recreation District, social service and cultural agencies, historical preservation and art organizations, and others. The Comprehensive Plan and related ordinances shall consider the interconnection among these agencies and organizations and their missions.

The topics in this chapter deal with history, culture, parks and recreation, and public education. Some of these topics are affected by forces that are outside the bounds of local land use planning. For example, there may be state rules that override local policies, and community cultural programs often change with the citizens' interests and support. For that reason, the goals below provide direction only for those topics that may be affected by land use planning:

- to encourage the preservation of historic and cultural resources within the urban area;
- to foster a sense of historic awareness among the citizens of the community;
- to expand the number and variety of cultural and artistic venues held downtown and elsewhere in the community;
- to provide quality green spaces, natural areas, and recreation sites through public and private park land throughout the community; and
- to coordinate the development of future park and school sites to serve the expanding urban area population.

Overview

Planning for a community is more than measuring the number of dwellings, the variety of jobs, or the miles of roads. The topics in this chapter describe other less tangible, but equally important, conditions that will shape the future of Bend.

Primarily, the topics in this chapter affect the quality of life at a more personal rather than economic level for Bend urban area residents. However, the quality of our schools, parks, and cultural activities bolster the economic well-being of our community. The discussion below, and the policies at the end of this chapter, show how these topics fit into the comprehensive planning for Bend's future.

Historical Features

Bend has a relatively short modern history, but a much longer Native American history, going back thousands of years, as evidenced by the archaeological resources found along the river.

While most archaeological resources have likely been destroyed within the urban area, there are a significant number of sites around the city that have been identified.

United States government scouts, such as John C. Fremont, and government survey teams explored Central Oregon in the 1840s and 1850s, but it was not until the 1870s that the first permanent settlement was established in the area. By 1877 a land claim was filed for the "Farewell Bend" ranch, located at the dramatic 90 degree bend in the Deschutes River just south of what is now downtown. A post office for the Farewell Bend settlement was applied for in 1886, and granted that year under the name of Bend.

In its earliest days, Bend was a small trade center for the agricultural and ranching operations to the east and north. Shortly after the turn of the century, East Coast developers formed the first irrigation companies in the area, and construction was begun on several large canals and dams needed to take water out of the Deschutes River to irrigate the high, dry desert. The main canals are still in operation today, and snake through Bend as they carry water to agricultural lands as far away as Madras, 40 miles to the north.

The City of Bend was incorporated in 1905, with a population of about 500 persons. In the next decade, two events changed the direction of Bend for the next half century. In 1911 the Oregon Trunk Line Railroad coming south from the Columbia River was completed to Bend. The railroad created a new lifeline to move people and products in and out of Central Oregon. Four years later, two large Minnesota lumber companies, the Shevlin-Hixon company and the Brooks-Scanlon company, announced plans to build large sawmills on each side of the Farewell Bend stretch of river.

Figure 3-1. Shevlin-Hixon mill on east side of river as seen from Brooks-Scanlon mill

The railroad and lumber mills created an explosion in Bend's population and increased the number of residents to more than 5,000 persons by 1920. These same forces led to a tremendous growth in commerce and housing that is still evident today in much of downtown and older residential areas west and south of downtown. As a result, many of the historic buildings and structures listed in the city's inventory of historical buildings and places are direct products of the boom period of the first part of the 20th century.

The Bend area history is recorded by the Deschutes County Historical Society. This organization maintains and operates the Des Chutes Historical Center in the old Reid School building at the south end of downtown. The Historical Society assists the city and county in their efforts to assess, record and preserve historic and cultural sites within the urban area. Such efforts are important because:

- public awareness of Bend's historical and cultural background has been and will continue to be an important source of knowledge, pride, education, and enjoyment for visitors and residents;
- rapid growth and development make it imperative that the city's historical and cultural resources be identified and protected; and
- properly restored and utilized historical and cultural resources enhance the economy of the area.

Oregon Administrative Rules describe how local historic resources are to be evaluated, and the rules establish certain standards for historic resources of "statewide significance" and property owner notification. Table 3-1 on the next two pages lists the historic structures and sites that played a part in the growth and development of the Bend urban area.

Table 3-1
Inventory of Historic Sites in the Bend Urban Area

HISTORIC STRUCTURES	LOCATION
H. E. Allen House	875 Brooks Street
Bend Athletic Club Gymnasium✶	520 NW Wall Street
Bend Railroad Depot	1160 NE Division Street
Bend Water & Light Co. Powerhouse/dam	Foot of Vermont Street
Bend Woolen Mill	1854 NE Division Street
Charles Boyd Homestead✶	20410 Bend River Mall Drive
Cozy Hotel	327 NW Greenwood Avenue
Deschutes County Library Building✶	507 NW Wall Street
Delaware Grocery	845 NW Delaware Avenue
Downing Hotel	1033 NW Bond Street
Trinity Episcopal Church✶	469 NW Wall Street
First Presbyterian Church	157 NW Franklin Avenue
A.L. French Home	429 NW Georgia Avenue
Hoover's Universal Garage	124-128 NW Greenwood Avenue
Steidl and Tweet irrigation dam	Division St. near Yale Avenue
Kenwood School	701 NW Newport Avenue
Keyes House	912 NW Riverside Boulevard
Liberty Theatre	849-851 NW Wall Street
Lucas House	42 NW Hawthorne Avenue
Thomas McCann House✶	440 NW Congress Street
Mountain View (Mayne) Hospital	515 NW Kansas Avenue
August Nelson Building	838 NW Bond Street
Niswonger House	44 NW Irving Avenue
O'Donnel Building	921-933 NW Wall Street
Old Clinic	731 NW Franklin Avenue
Old Bend High School Building✶	520 NW Wall Street
O'Kane Building✶	115 NW Oregon Avenue
George Palmer Putnam House	606 NW Congress Street
Pierson Blacksmith Shop	211 NW Greenwood Avenue

Table 3-1
Inventory of Historic Sites in the Bend Urban Area

HISTORIC STRUCTURES	LOCATION
A. J. Tucker Blacksmith Shop	200-202 NW Greenwood Avenue
James E. Reed House	45 NW Greeley Avenue
Reid School✶	129 NW Idaho Avenue
Evan A. Sather Home✶	7 NW Tumalo Avenue
Sawyer House	434 Drake Road
St. Francis Catholic Church	494 NW Lava Road
Shevlin-Hixon Executive House	545 NW Congress Street
N.P. Smith Pioneer Hardware Building✶	935-937 NW Wall Street
Spheir Building	901 NW Bond Street
Stover House✶	1 Rocklyn Road
Old U.S. Post Office✶	777 NW Wall Street
John I. West Building	130 NW Greenwood Avenue
Wright Hotel✶	215 NW Greenwood Avenue
Nels and Lillian Andersen House	63160 Nels Anderson Road
SITES DESIGNATED WITH PLAQUES	**LOCATION**
1813 Rock	129 NW Idaho Street
Bend School Landmark	Drake Park
A.M. Drake Homesite	Drake Park
Foley Landmark	Pilot Butte State Park
Johns Landmark	Drake Park
Oregon Trunk Freight Warehouse Site	Railroad tracks & NW Division
Pilot Butte Inn Site	1133 NW Wall Street
Shevlin-Hixon Mill site	Shevlin Center near dam
Central Oregon Pioneers' Landmark	Pioneer Park
Weist Homesite Landmark	1315 NE Third Street
Brooks Scanlon Craneshed Site	721 SW Industrial Way

✶ Sites on the National Register of Historic Places

The items in Table 3-1 represent the city's official list of historic places compiled by the city and county, and approved by the Oregon Land Conservation and Development Commission. Any land use action or building modification to the historic structures on the approved list must be reviewed and approved by the joint city/county Historical Landmarks Commission, a citizens committee established in 1980.

Additional information and evaluation of historic sites is contained in resource material available at the city and county planning departments, the Des Chutes Historical Center, and in rules adopted by the state Land Conservation and Development Commission.

Cultural Amenities

Central Oregon's abundance of scenic and recreational amenities is complemented by a rich and diverse cultural climate of theater, music, and art in Bend. Performing arts can be seen throughout the year at the *Community Theatre of the Cascades* in downtown Bend. The

Community Theatre has been putting on professional caliber productions since the early 1980s. In addition, the Central Oregon Community College *Magic Circle Theatre* is the venue for both college and community programs. There is also interest in the community to renovate the downtown *Tower Theater* building so that it can be used for lectures, concerts and other community events.

Bend hosts one of the state's leading music festivals in Drake Park along the banks of the Deschutes River. Each summer the Cascade Festival of Music presents ten days of classical, pops, and jazz concerts that draws in performers and visitors from all over the country. The Munch & Music series of evening concerts in the park during the summer is another opportunity for the community to gather together to enjoy free music, fine food, and friends in beautiful surroundings. The community college Central Oregon Symphony, jazz band, and choir perform several times a year for area residents.

The visual arts are represented with public art on street corners, at public buildings, and through exhibits at several public and private galleries in downtown Bend and elsewhere in the community. Several times each year the downtown merchants sponsor "Art Hops" when painters, sculptors, weavers and other artisans demonstrate their craft in the downtown stores. In addition to these amenities, the community supports other cultural events to celebrate cultural and ethnic diversity in Central Oregon.

Just south of the urban area is The High Desert Museum, a nationally renowned, living, participatory museum with a wide variety of indoor and outdoor exhibits on nature, art, science, pioneer life, and Native American life on the high desert plateau. The museum also offers a year-round education program of classes, lecture series, and field excursions.

Park and Recreation Facilities

The City of Bend has a long history of park development, beginning with the creation of Drake Park in 1921. Drake Park, the first of several parks along the Deschutes River, has become part of the identity and heart of the community. For decades Bend's citizens and visitors have enjoyed the many parks for their beauty, for sporting events, for community celebrations, and for casual recreation.

Since 1974 all of the public parks and recreation facilities within the urban area have been developed and managed by the Bend Metro Park and Recreation District, a separate special district that serves the Bend area. The Park and Recreation District's *Comprehensive Management and Development Plan* assesses the district's services and operations, and establishes the framework for park and recreation planning within and adjacent to the Bend urban area.

The Bend Metro Park and Recreation District has almost three dozen park sites in the urban area, and more than 900 acres of park land in the urban area. The older neighborhoods in the west and central part of the urban area are generally well represented with parks that were developed before the 1970s. The parts of the urban area that experienced rapid residential growth in the 1990s have few developed park sites, although the district does have undeveloped park land on the east and north side of the urban area. In addition to the local park and recreation district facilities, Pilot Butte State Park—a volcanic cinder cone in the center of town with a commanding view of the urban area—is a favorite spot for residents and visitors.

Figure 3-2, Providence Neighborhood Park

The Bend Metro Park and Recreation District also provides a large and diverse recreation and fitness program for Central Oregon residents. These programs offer a wide range of year-round activities for youngsters and adults. One set of programs, in cooperation with the local school district, provides after school activities and sports for school students.

There is strong community interest in adding more park and recreation facilities to meet the ever increasing needs created by the expanding urban population. The Bend Metro Park and Recreation District Board has identified the following priorities for future development:

- new sports parks for children's soccer and baseball, and adult softball field;
- acquisition of riverfront park land and/or conservation easements;
- preserving and expanding the public and private trail system along the Deschutes River and Tumalo Creek; and
- development of neighborhood parks.

The Comprehensive Plan recommends the development of a trail system along the river wherever possible in an effort to provide public access to this outstanding natural feature. The park district already manages the 2½ mile River Run trail at the north end of the urban area, and is working with property owners to develop other river trail segments. Several miles of riverfront trails also exist on private property, but are open to the public. In addition to the river trails, the Comprehensive Plan recommends a system of recreation and transportation trails, which would interconnect neighborhoods, parks, and schools. More information on the urban area trails and a map of the trail system are included in Chapter 7, *Transportation System.*

The Bend Comprehensive Plan also supports and recommends a park and recreation system which would place a neighborhood park within walking distance of every residence in the community, as well as take advantage of natural sites within the area. There are many opportunities for new parks to be developed in conjunction with future school sites. The Bend Metro Park and Recreation District, the Bend-La Pine School District, and the city and county work together to coordinate the planning of park and school facilities to serve the growing urban population.

A park facility located adjacent to a school has essentially the same service area as the school, and this approach to park planning has several advantages. The combined school and park make a year- round center for educational and recreational activities and allow each facility to be designed to complement the needs of both the park district and the school district. The coordinated school-park program may also afford an opportunity for cost savings to both districts. Besides eliminating some duplicate facilities, the coordination of siting new schools and

parks could reduce the cost of acquisition, development, and maintenance of each type of facility.

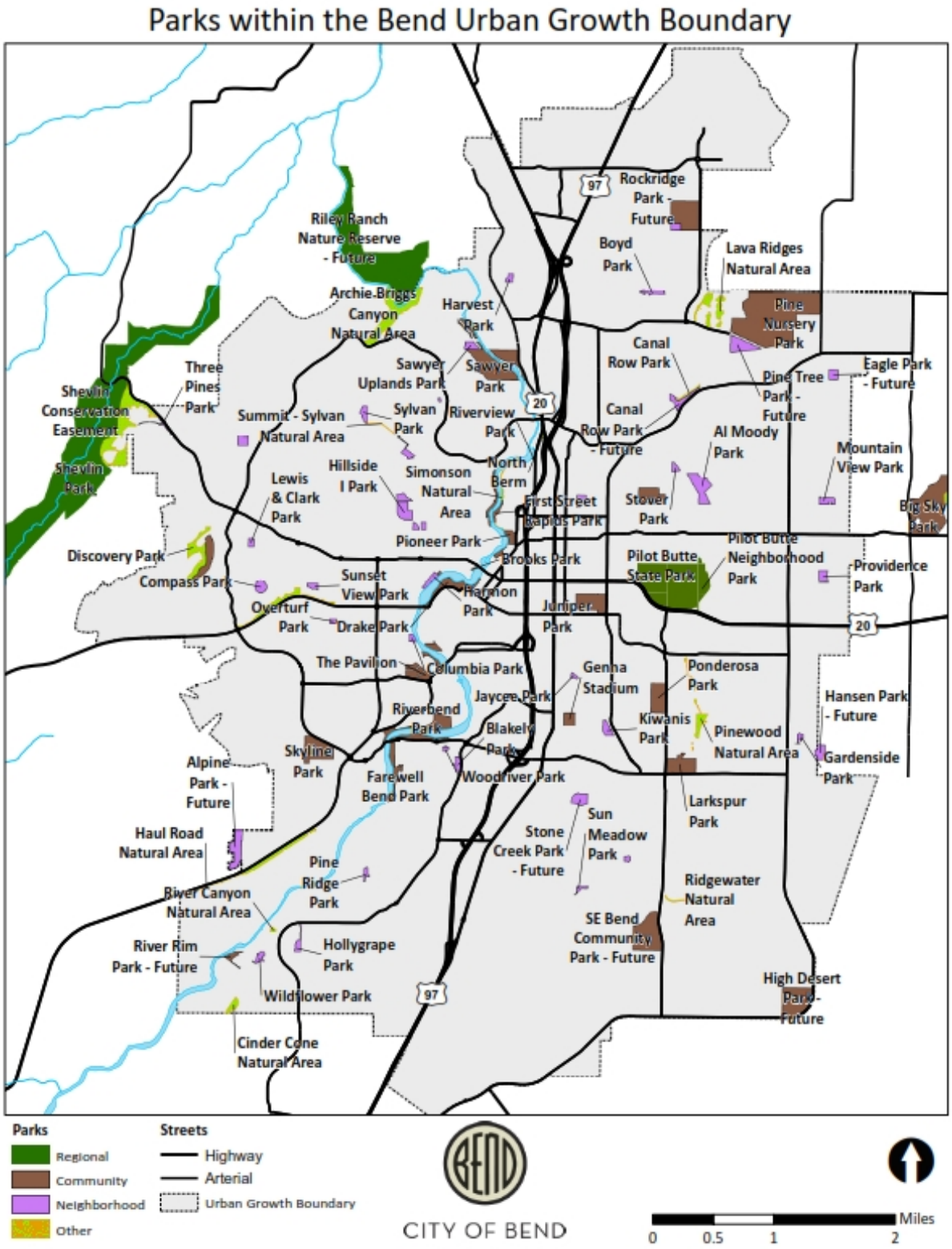
Table 3-2 on the next page provides a summary of the area's existing public park and recreation facilities managed by the park district and Oregon State Parks (as of 1996). The number and type of facilities planned by the Bend Metro Park and Recreation District through 2005 are also listed in the table. Figure 3-4 is a map of park sites in the urban area.

Table 3-2
Public Park and Recreation Facilities in and near the UGB

TYPE OF FACILITY	EXISTING FACILITIES (1996)		PLANNED 1995-2005	
	Quantity	Developed and Natural Acres	Quantity	Total Acres
PARKS AND OPEN SPACES				
A. Neighborhood Parks	11	46.3	11	73.2
B. Community Parks	3	102.9	6	282.4
C. Metro / Regional Parks	2	655.9	(none)	0
D. Riverfront Parks	11	28.0	2	28.5
E. Sports Parks	2	35.0	2	195.0
F. Downtown / Urban Parks	(none)	0	(none)	0
G. Mini-Parks / Pocket Parks	(none)	0	(none)	0
H. Historic Sites	1	16.5	(none)	0
I. Greenway / Natural Areas / Preserves	2	6.8	(none)	0
J. Bikeways / Pathways / Trails	2	14.0	2	80.0
Total Parks and Open Spaces	34	905.4	23	659.1
RECREATIONAL FACILITIES	EXISTING		PLANNED	
	Quantity	Sq. Feet	Quantity	Sq. Feet
A. Aquatic / Fitness Centers	1	22,000	1	40,000
B. Community / Recreation Centers	0	0	3	80,000
Total Recreation and Support Facilities	1	22,000	4	120,000

Source: Bend Metro Park and Recreation District *Comprehensive Management and Development Plan*, City Planning Department parks and open space inventory.

Figure 3-4


Parks within the Bend Urban Growth Boundary
Riley Ranch Nature Reserve - Future
Archie Briggs Canyon Natural Area
Three Pines Park
Shevlin Conservation Easement
Shevlin Park
Summit - Sylvan Natural Area
Sylvan Park
Sawyer Uplands Park
Harvest Park
Sawyer Park
Riverview Park
Hillside I Park
Simonson Natural Area
North Berm
Lewis & Clark Park
First Street Rapids Park
Pioneer Park
Discovery Park
Compass Park
Sunset View Park
Overturf Park
Drake Park
Brooks Park
Harmon Park
Juniper Park
The Pavilion
Columbia Park
Jaycee Park
Riverbend Park
Blakely Park
Skyline Park
Farewell Bend Park
Woodriver Park
Alpine Park - Future
Haul Road Natural Area
River Canyon Natural Area
Pine Ridge Park
River Rim Park - Future
Hollygrape Park
Wildflower Park
Cinder Cone Natural Area
Rockridge Park - Future
Boyd Park
Lava Ridges Natural Area
Pine Nursery Park
Canal Row Park
Canal Row Park - Future
Pine Tree Park - Future
Eagle Park - Future
Al Moody Park
Mountain View Park
Stover Park
Big Sky Park
Pilot Butte State Park
Pilot Butte Neighborhood Park
Providence Park
Genna Stadium
Ponderosa Park
Kiwanis Park
Pinewood Natural Area
Hansen Park - Future
Gardenside Park
Larkspur Park
Sun Meadow Park
Stone Creek Park - Future
Ridgewater Natural Area
SE Bend Community Park - Future
High Desert Park - Future
97
20
Parks
Regional
Community
Neighborhood
Other
Streets
Highway
Arterial
Urban Growth Boundary
CITY OF BEND
Miles
0
0.5
1
2

More detailed descriptions and information on existing and planned park district facilities are in the district's *Comprehensive Management and Development Plan.* In addition to the facilities listed in the table and shown on the map, the Bend Metro Park and Recreation District has title to more than 1,100 acres in six sites outside the urban area.

Existing developed and undeveloped park and recreation sites are shown on the Comprehensive Plan Land Use Map. The Bend Metro Park and Recreation District has described the types and number of new facilities it thinks the community needs to develop during a ten-year period ending in 2005. Because the long-term, 20-year park and recreation needs and corresponding locations have not yet been determined, the Comprehensive Plan Land Use Map displays a symbol that represents the general location for future parks in those neighborhoods where a specific site has not been selected. As the Bend Metro Park and Recreation District updates its *Comprehensive Management and Development Plan* with new information on neighborhood parks or other facilities, the general symbol for future park sites on the Land Use Map will be replaced with specific demarcations.

Until the 1998 update of the Comprehensive Plan, neither the city nor the county had a separate zoning district designed to protect and enhance parks and public open space. The city and county now have a Public Facilities plan designation that is applied to developed park facilities, schools, public owned natural areas, and other types of open space.

In addition to the public recreation facilities provided by the Bend Metro Park and Recreation District, there are six private golf courses within the Urban Growth Boundary, and two more just outside the Urban Reserve Area. Four of the courses within the urban area are currently open to the public. Besides providing recreational opportunities for residents and visitors, these golf courses serve a secondary role of providing some of the "large developed" open space within the urban area.

Public Education

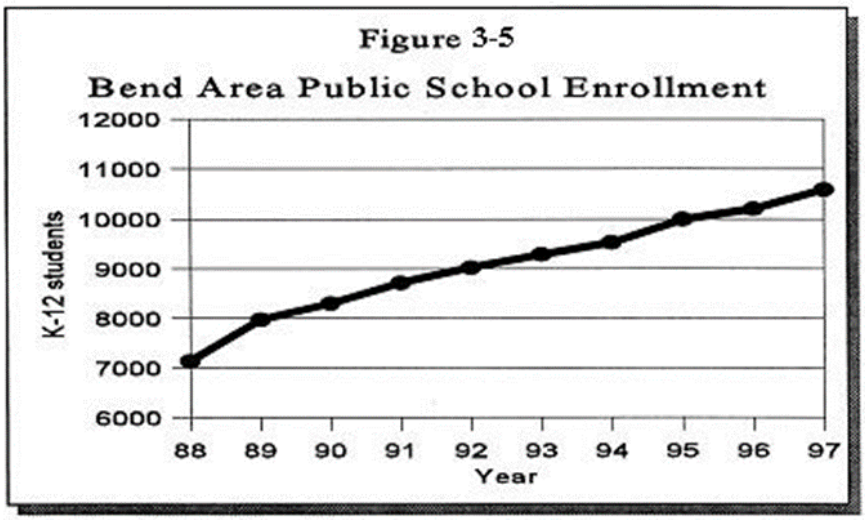
The sections below describe the existing and planned public education facilities in the urban area. In addition to the public school system, there are several private and parochial schools that provide elementary and secondary education.

The Bend-LaPine School District

The Bend-La Pine School District is the only public school district serving the urban area. At the end of the 1990s, the district operated nine elementary schools, three middle schools, two high schools, and several small special "magnet" programs within or adjacent to the Urban Growth Boundary. These schools serve the Bend urban area and several thousand households outside the urban area. Roughly two-thirds of the students in the Bend schools are from within the urban area. In addition to the Bend schools, the district has schools in Sunriver and La Pine that served about 1,650 students in 1997.

During the high growth period of 1988 through 1997, enrollment in the Bend schools increased almost 48 percent. This dramatic increase in students is another indicator that the majority of people moving to Central Oregon are not elderly, but younger families with school age children. Figure 3-5 shows the increase in total enrollment in the Bend schools for the ten year period ending in 1997.

Figure 3-5



Source: Bend-LaPine School District

In the early 1990s the Bend-La Pine School District constructed two elementary schools and one middle school to meet the rapid population growth. These new schools were above or near their maximum enrollment capacity within a year or two after they opened. Table 3-3 below compares the student load in 1997 with the design capacity of each school.

Table 3-3
Bend Urban Area Public School Facilities

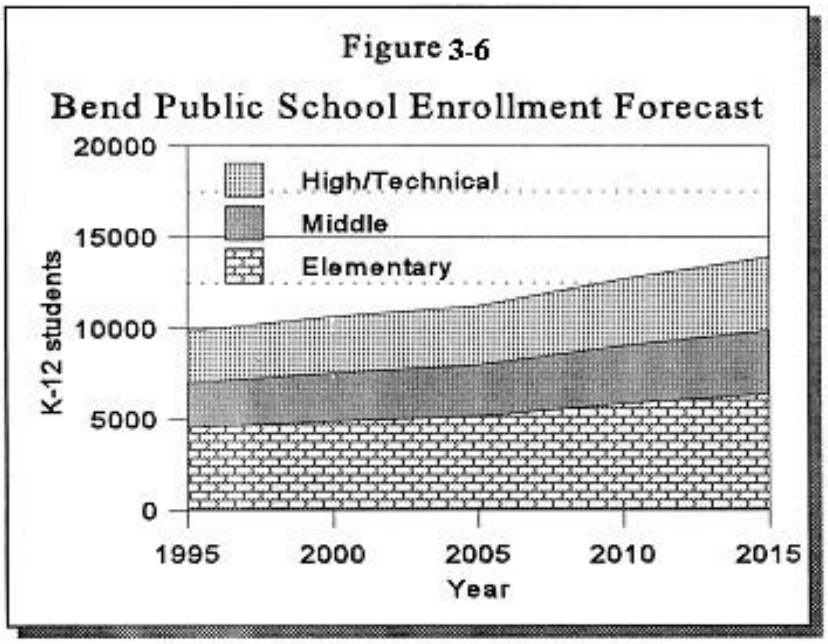
Facility Name	Grades	Site Acres	Number of Classrooms	Maximum Enrollment	Enrollment in 10/97	Percent of Capacity
Bear Creek Elem.	K-5	37.40	25	681	571	84%
Buckingham Elem.	K-5	20.50	24	662	634	96%
Elk Meadow Elem.	K-5	13.00	24	650	702	108%
Jewell Elementary	K-5	16.74	24	675	596	88%
Juniper Elementary	K-5	30.41	24	675	551	82%
Kenwood Elem.	K-5	4.17	17	423	80	90%
Kingston Elementary	K-3	3.00	9	166	192	116%
Lava Ridge Elem.	K-5	40.00	24	650	671	103%
Thompson/Amity Creek Elementary	K-3	1.40	8	156	272	174%

Facility Name	Grades	Site Acres	Number of Classrooms	Maximum Enrollment	Enrollment in 10/97	Percent of Capacity
Cascade Middle	6-8	34.37	38	757	755	100%
High Desert Middle	6-8	85.00	39	800	869	109%
Pilot Butte Middle	6-8	33.13	39	825	963	117%
Bend High	9-12	68.00	72	1432	1528	107%
Mountain View High	9-12	30.00	62	1322	1730	131%

Source: Bend-La Pine School District. Acreage figure may include additional land held by the district. Classroom number includes modular units.

In October 1997, the school board accepted a school siting study prepared for the district in cooperation with the city and county. This study provides information on enrollment, siting needs, and other factors to help the district determine the type, location, and size of school sites needed during the next 20 years.

The school district's estimate of future enrollment levels and school needs is based on the forecast population levels in the urban area and nearby rural lands.



Source: Bend-La Pine School District, 1997

Figure 3-6 shows the 1995 student levels and the forecast enrollment level for the public schools based on the 1997 siting study. It can be seen from the data in this figure that total enrollment in the Bend area public schools is expected to increase about 45 percent by the year 2015.

If the population growth and demographic patterns follow the forecasts in the 1997 study, there will be a need for three to five additional elementary schools, two to three new middle schools, and one or two new senior high schools or technical schools in the planning area by 2015. In 1998 local voters approved a $57 million bond levy to help meet the need for more schools. The bond will pay for construction of a new elementary school, a new middle school, a new high school and remodeling Bend High.

Identifying the location for new public schools is an important function of the Comprehensive Plan. The need for new schools is closely related to residential development and housing densities in the community. It is extremely important that schools be located with reference to the development pattern indicated on the Comprehensive Plan.

Elementary schools in particular can have a significant influence on the location or direction of growth in any given area, and will in themselves attract residential development. They should be centrally located in their service area, and spaced in a way that will permit reasonable locations for future schools as the area continues to grow. The city, county and Bend-La Pine school district will use the most recent studies to evaluate ways to ensure the timely development of new schools in the urban area.

Colleges and Universities

Central Oregon Community College is the state's oldest two-year college, having been created in 1949. Located on the west slope of Awbrey Butte, the 200 acre campus features a 102 student residence hall, a 38,000 volume college/community library, a 300-seat performing arts center, and several lecture halls. The college has a long-standing policy to encourage community use of its buildings and facilities.

The college enrolls about 3,200 full-time and part-time students each term, plus another 3,000 to 4,000 community education students taking non-credit courses. Degrees offered by COCC include the Associate of Arts degree, the Associate of Science degree, and the Associate of Applied Science degree covering several technical and professional fields. The college serves more than just the Bend area, and its instructional programs extend to a 10,000 square mile service area through a network of community centers in Christmas Valley, La Pine, Madras, Prineville, Redmond, Sisters, and Warm Springs.

OSU-Cascades, a branch campus of Oregon State university opened its doors in 2001 on the COCC campus. OSU-Cascades expanded to a four-year university when it welcomed its first freshman class in 2015.

POLICIES

Historic Sites

3-1 The City encourages the preservation, rehabilitation, and reuse of historic structures whenever practical.

3-2 The City will continue to encourage identification and preservation of significant historical and cultural sites.

3-3 The preservation of exterior facades should be the emphasis of the City's encouragement of historic preservation.

3-4 The City encourages public educational institutions to promote the importance of Bend's history and historic landmarks.

Parks and Recreation Facilities

3-5 The City will apply a new "Public Facilities" zone for public parks and recreation facilities within the planning area.

3-6 The City shall support efforts by the Park and Recreation District and Bend-La Pine School District to jointly develop school-park sites to meet neighborhood park and school recreation needs.

3-7 Sites for small neighborhood parks are not shown on the Land Use Plan Map, but the city shall encourage private or public parties to develop small neighborhood parks.

3-8 The City shall refer to the park district, for its review and recommendations, all development proposals that include or are adjacent to existing or proposed parks or trails.

Urban Trails

3-9 The City will continue to work with the county, irrigation districts, state and park district to develop a series of trails along the Deschutes River, Tumalo Creek, and the major canals so that these features can be retained as an asset in the urban growth boundary and urban reserve area.

3-10 The trails designated on the Bicycle and Trail System map shall be the basis for developing a trail system that serves the recreational and transportation needs of the community.

3-11 The City, when practical, shall require connecting links to the urban trail system from all adjacent new developments.

Schools

3-12 The City will plan for safe streets, pedestrian, and bike facilities adjacent to the school sites as new schools are erected.

3-13 The City will coordinate with the Bend La-Pine School District to increase pedestrian and bicycle accessibility to schools.

3-14 When legally allowed, the City may require major new developments to reserve land for school purposes in conjunction with the Bend-La Pine School District's adopted plan for the type and location of future facilities.

Chapter 4: Population and Demographics

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 18, 1998	Resolution #2247	Comprehensive Plan update
2016	NS-2271	Format update, minor text changes to remove outdated text

BACKGROUND

Context

In 2013 the Oregon House of Representatives and the Senate approved legislation assigning the coordinated population forecasting to the Population Research Center (RC) at Portland State University (PSU). This action eliminates the need for an entire chapter of the Comprehensive Plan dedicated to population forecasting and demographics. The contents of this chapter will be retained for historic context until such time the city can begin a public process to update the Comprehensive Plan. New policies on population forecasting will be located in the new Housing Chapter 5.

Goals

A major goal of the land use planning process is to ensure that there is sufficient land within the urban growth boundary for housing, for business and industry, for public services such as parks and schools, and an adequate transportation system to serve those needs. The forecast of growth and change in the urban area population is an important component in determining these land use needs. It is a goal of the city to use and evaluate the best historic information and expert forecasts in preparing this chapter. Regular updates of population and demographic information will be conducted to keep these forecasts current.

Overview

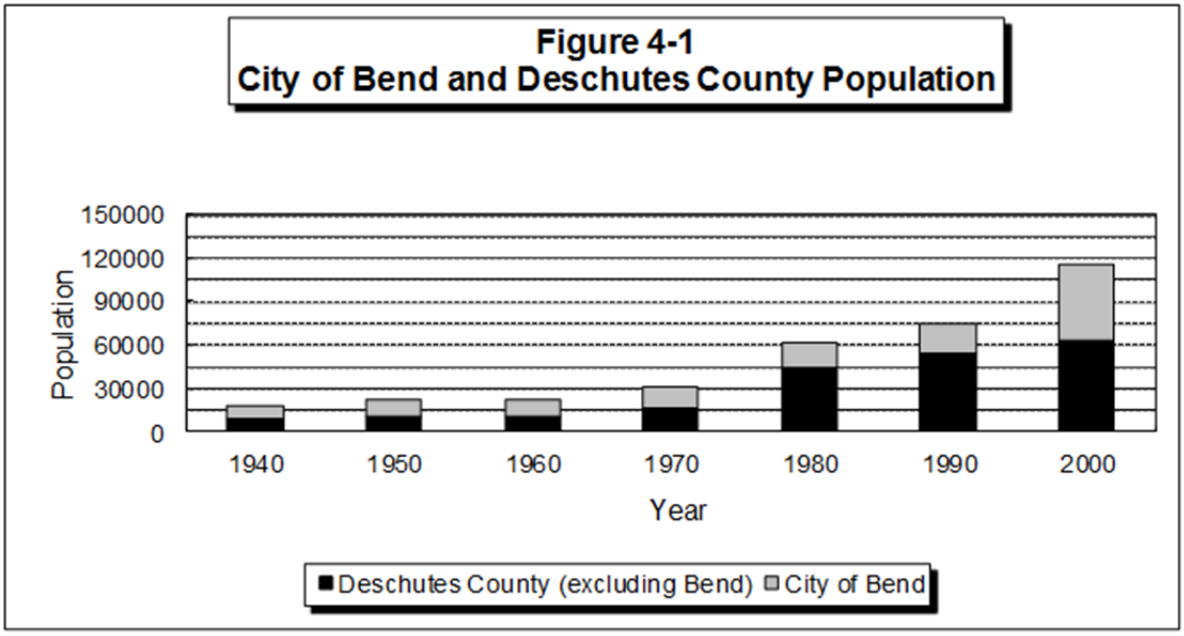
Rapid population growth is nothing new to Bend. Fifteen years after its incorporation as a city of about 500 persons in 1905, the population had exploded to more than 5,400 persons after the building of two large sawmills at the south edge of town. In later decades the Bend area and Deschutes County, like the rest of the state, experienced cycles of population growth tied to economic conditions. Bend is the eighth largest city in Oregon and the largest Oregon city east of the Cascade Mountains.

As the population has grown, it also has become younger and more affluent, conditions that can be traced in part to the expansion of the local outdoor recreation businesses and the in-migration of “baby-boomers” from California and the Northwest.

Population History

Historically, the City of Bend population made up about half of the Deschutes County population. This changed in the 1960s when thousands of rural recreational lots and suburban lots were platted in the county outside of urban areas.

Much of the county population growth in the 1970s and 1980s was driven by persons seeking open space rather than urban lots. Figure 4-1 shows the change in population since the 1940 census.



The late 1980s marked the swing out of a recessionary period in Central Oregon and into better economic times. Bend's expanding role as the regional trade and service center, combined with its attractiveness as a year-round tourism and recreation area, fueled another surge of population and employment growth that continued through the 1990s and has become stronger during the early 2000s.

Growth during the 1990s

The 1990 census counted 20,469 persons within the city limits of Bend. The population within the county portion of the urban areas was estimated to be 12,100 based on census tract data for the "Bend District," for a total of 32,569 persons within the UGB in 1990.

During the 1990s, the rate of population growth in the City of Bend and Deschutes County was among the highest in the state. By the year 2000, the city population was 52,029 persons – up 31,560 persons since the 1990 census – although much of the city's increase during this period was due to annexing all unincorporated areas in the UGB in 1999. The Portland State University Center for Population Research and Census estimated the annexed population to be 13,648 persons. Even accounting for the annexations, the population of Deschutes County excluding the City of Bend increased by 8,849 persons, from 54,489 to 63,338 persons, much of this growth occurring in the Cities of Redmond and Sisters. The total population of the county, including the City of Bend increased from 74,958 to 115,367 persons in the year 2000, which equates to an average annual growth rate of 4.4 percent per year. At the same time, the average annual growth rate for the State of Oregon was 1.9 percent per year.

Excluding the 13,648 persons annexed in to the City of Bend in 1999, and another 3,411 annexed between 1990 and 1998, the city's population increased by 14,501 during the 1990s, which equates to an average annual growth rate of approximately six (6) percent per year.

The annual rate of growth in Bend during the 1990s was more than three times the statewide average. To put this increase in perspective, in the year 2000 one out of three Bend urban area residents did not live in the area in 1990. Table 4-1 below displays the results of the 1990 and 2000 Census counts for Deschutes County and how the population is distributed between the cities and the unincorporated county.

Table 4-1
Distribution of County Population in 1990 and in 2000

Jurisdiction	April 1, 1990 Population	Percent of Total	April 1, 2000 Population	Percent of Total
Deschutes County	74,958	100%	115,367	100%
Bend	20,469	27%	52,029	45%
Redmond	7,163	10%	13,481	12%
Sisters	679	1%	959	1%
Total Pop in Cities	28,311	38%	66,469	58%
Total Unincorporated	46,647	62%	48,898	42%

Source: U.S. Census Bureau Summary Tape File 1 (1990) and Summary File 1 (2000).

The growth pressures in the 1990s affected not only Bend, but all of Central Oregon. Between 1990 and 2000 Deschutes County was the fastest growing county in the state, Jefferson County was third, and Crook County was fourth. Although the total Deschutes County population increased by more than 40,400 persons in ten years, the growth pattern in the 1990s was different than the previous boom in that most of the new residents settled in the urban areas.

One result of this population growth is that Bend was designated by the federal government as a metropolitan statistical area in June of 2003. An MSA is county that has a city with a population of 50,000 or more. The purpose of defining geographic areas like an MSA is to establish nationally consistent area definitions for collecting, tabulating, and publishing federal statistics. The Bend MSA represents Deschutes County.

Age Distribution

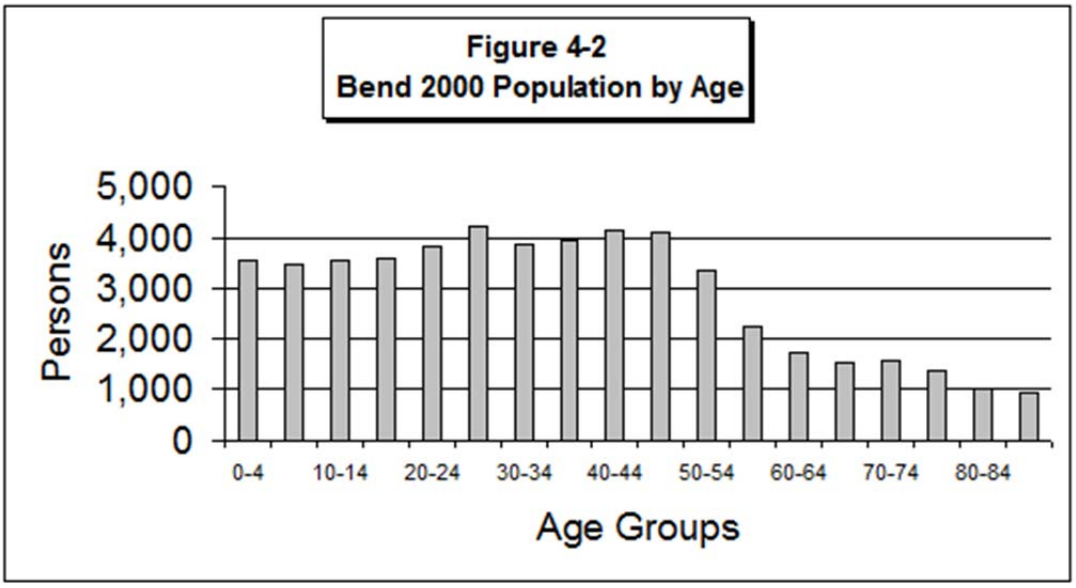
The Census data for Bend include demographic information on the age of residents. Table 4-2 compares the age distribution in four broad groupings for the city population since the 1970 census. The 2000 census data are also compared to the county and state populations, and show that the city population was younger than the overall county and statewide population averages.

Table 4-2
Comparison of Bend Age Groupings Over Time

Age Range	City of Bend				County	Statewide
	1970	*1980*	*1990*	*2000*	*2000*	*2000*
Age 0-24	*43.5%*	*42.7%*	*35.3%*	*34.7%*	*32.6%*	*34.3%*
Age 25-44	*22.6%*	*31.6%*	*36.3%*	*31.1%*	*28.6%*	*29.2%*
Age 45-64	*22.3%*	*15.2%*	*14.9%*	*21.8%*	*25.7%*	*23.7%*
Age 65+	*11.6%*	*10.5%*	*13.5%*	*12.4%*	*13.1%*	*12.8%*

Source: *U.S. Census reports and Portland State University Center for Population Research and Census*

Table 4-2 and Figure 4-2 show that Bend's population in 2000 was not that different from the populations of the County and the State. The greatest difference between these populations is that Bend's population in 2000 included more persons between the ages of 25-44 than the county or the state. In contrast, the Census counted fewer people in the 45-64 range in Bend than in the county or the state.



Source: U.S. Census of Population and Housing, 2000: Summary File 2.

As was indicated above, Deschutes County was the fastest growing county in the state in the 1990s. Between 1990 and 2000, the County's population grew by 40,409 people, an increase of almost 54 percent. A majority of the increase (88 percent) was from "positive net migration" – the number of people moving into the county exceeded the number of people moving out. Similarly, most of the increase in the Bend UGB population since 1990 is attributed to in-migrants. Table 4-3 displays the population change data by natural increase and net migration for Deschutes County between 1980 and 2000. During the 1990 to 2000 period, population increase due to natural increase (births-deaths) decreased while the net migration component of population change (in-migrants – out-migrants) increased. Net migration accounted for 88 percent of the county's population growth during the 1990s. In contrast, net migration accounted for 73 percent of the state's population growth.

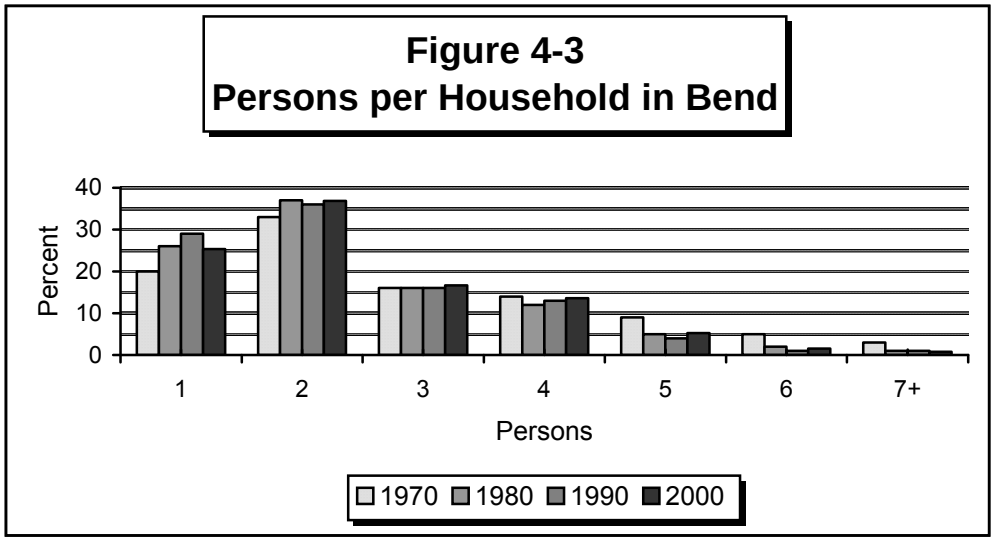
Table 4-3
County Population Change and In-migration

Time Period	Population Change	Natural Increase	Net Migration All Ages
4/1/80 - 4/1/90	+13,458	4,878 (36%)	8,580 (64%)
4/1/90 - 4/1/00	+40,409	4,713 (12%)	35,696 (88%)

Source: Portland State University Center for Population Research and Census

Persons per household

The average number of people living in a dwelling, whether as a family or a household of unrelated persons, is a useful measurement to help forecast how many dwellings will be needed in the future. Figure 4-3 shows the percent of Bend households by number of persons for the past four census periods. Bend was following a trend toward smaller household size. However, the most recent Census data shows the number of households with three or four persons remains constant or represents a larger share of the number of households.



Source: U.S. Census of Population and Housing. For 2000 data, Summary File 1.

Table 4-4 compares the average household size for the city, county, and state since 1950. This comparison of persons per household shows a trend of fewer persons per household continuing for the county and the state. Bend differs in that an average household size of 2.4 persons per household has remained constant between 1990 and 2000.

Table 4-4 Average Persons Per Household						
Area	1950	1960	1970	1980	1990	2000
All of Oregon	3.1	3.1	3.0	2.6	2.6	2.5
Deschutes County	3.2	3.1	3.0	2.7	2.6	2.5
City of Bend	3.0	3.0	2.9	2.5	2.4	2.4

Source: U.S. Census reports for Oregon

Education and Occupation

As reported in the 2000 census, the education levels in Bend were a few percentage points higher than the county and the statewide averages. For those Bend residents aged 25 or older at the time of the 2000 census, 90.2 percent had a high school degree or higher, and 29.4 percent had a bachelor's degree or higher. Many of the new jobs created in the urban area since the 1990s have been skilled or professional jobs in the service sector, finance, research, government, and manufacturing. This fact, combined with evidence from state surveys that a number of persons moving into the area have some college education, suggests that the percentage of education levels in the community will continue to increase. Additional information on education services and programs is contained in Chapter 3, *Community Connections.* The following presents the occupational employment data for Deschutes County from April 2001 through April 2005 to highlight the changes in employment over the last four years.

Table 4-5
Occupations in Deschutes County in April 2001 and April 2005

Occupation	April 2001	April 2005	Change	Percent Change	Percent of Total in 2004
Natural resources, Mining, and Construction	4,430	6,330	1,900	43%	10.3%
Manufacturing	5,400	5,920	520	10%	9.6%
Trade, transportation, and utilities	10,720	12,110	1,390	13%	19.7%
Information	1,430	1,550	120	8%	2.5%
Financial activities	3,390	4,050	660	19%	6.6%
Professional and business services	4,630	6,190	1,560	34%	10.1%
Educational and health services	6,030	7,270	1,240	21%	11.8%
Leisure and hospitality	7,500	8,340	840	11%	13.6%
Other services	1,650	1,800	150	9%	2.9%
Government	7,370	7,880	510	7%	12.8%

Sources: Oregon Labor Market Information System April 2001 and April 2005 data for Bend MSA (Deschutes County)

Income levels

The median (middle) household income in the City of Bend in 1989 (from the 1990 Census) was $25,787. The median household income in Deschutes County was a little higher, at $27,317 during the same period. Table 4-6 displays the 2000 Census data for household and family income for Bend. The 2000 Census showed the median household income was $40,857, and was $45,357 for families. The category of family with 2 workers represents the large share of family households in Bend and those households that had the greatest median income in 1999.

Table 4-6
Income Levels in Bend (1999 dollars)

Household Category	Median for 1999	Percent of Total
Household	$40,857	
Family with no workers	$34,140	12.6%
Family with 1 worker	$32,669	29.1%
Family with 2 workers	$60,907	48.9%
All families	$45,357	100%

Source: U.S. Census of Population and Housing, 2000: Summary File 4

Table 4-7 shows the 1999 income levels of households by the age of the household. This information is particularly useful in planning for housing, especially in determining what forms of housing will be more affordable to certain households. The age groups with the lower income levels, according to this data, are younger individuals and families and older retired (75+) persons.

Table 4-7
Householder Age by Income Levels

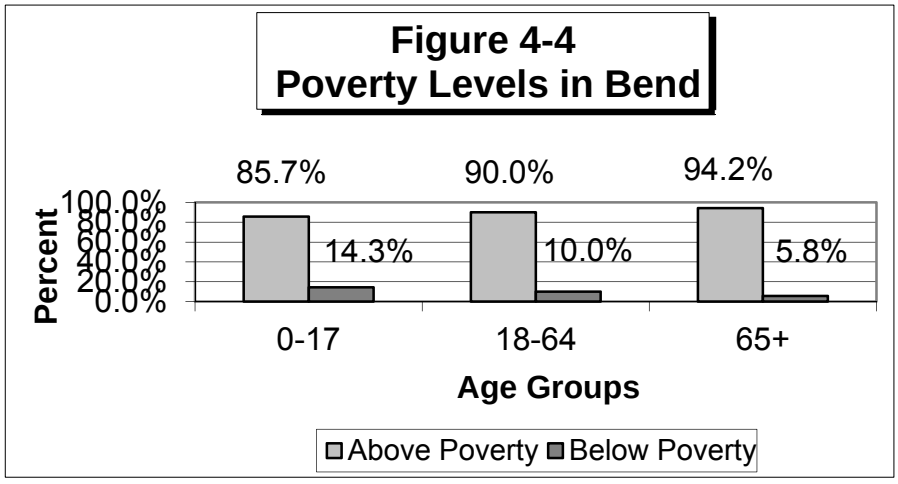
1999 Gross Income	0 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75+
Less than $10,000	9.5%	4.9%	4.1%	5.2%	8.9%	7.7%	14.6%
$10,000 to $14,999	14.6%	5.8%	4.9%	3.8%	3.5%	6.3%	18.0%
$15,000 to $19,999	15.4%	7.1%	3.9%	5.3%	2.4%	10.0%	8.8%
$20,000 to $24,999	10.6%	6.8%	4.4%	5.3%	5.1%	7.5%	10.4%
$25,000 to $29,999	12.2%	7.5%	6.6%	5.6%	7.5%	8.7%	11.9%
$30,000 to $34,999	10.6%	8.5%	8.6%	4.6%	8.4%	12.6%	8.2%
$35,000 to $39,999	7.4%	8.9%	7.2%	4.1%	4.5%	6.4%	5.3%
$40,000 to $44,999	7.2%	5.6%	6.9%	5.8%	4.9%	5.8%	2.3%
$45,000 to $49,999	2.9%	7.2%	7.1%	5.2%	6.1%	4.7%	4.2%
$50,000 to $59,999	4.8%	13.9%	10.6%	11.9%	8.1%	4.9%	3.9%
$60,000 to $74,999	2.2%	13.0%	13.2%	11.9%	12.6%	7.3%	4.6%
$75,000 to $99,999	1.2%	6.1%	13.6%	14.2%	13.4%	8.9%	3.1%
$100,000 to $124,999	0.8%	2.9%	4.0%	7.8%	5.9%	1.9%	3.3%
$125,000 to $149,999	0.6%	0.6%	1.6%	3.4%	2.6%	3.6%	0.9%
$150,000 to $199,999	0.0%	0.6%	1.5%	2.8%	2.0%	3.0%	0.5%
$200,000 or more	0.0%	0.6%	1.8%	3.1%	4.1%	0.7%	0.0%
Columns read down	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: US Census of Population and Housing, 2000: Summary File 3.

A related measure of income levels is the number of persons below the poverty level. Poverty levels reported in the 2000 Census are determined by comparing local incomes to a national standard of 48 income thresholds tied to the number and age of persons in the household. The national standards are not adjusted for state, regional, or local cost of living variations.

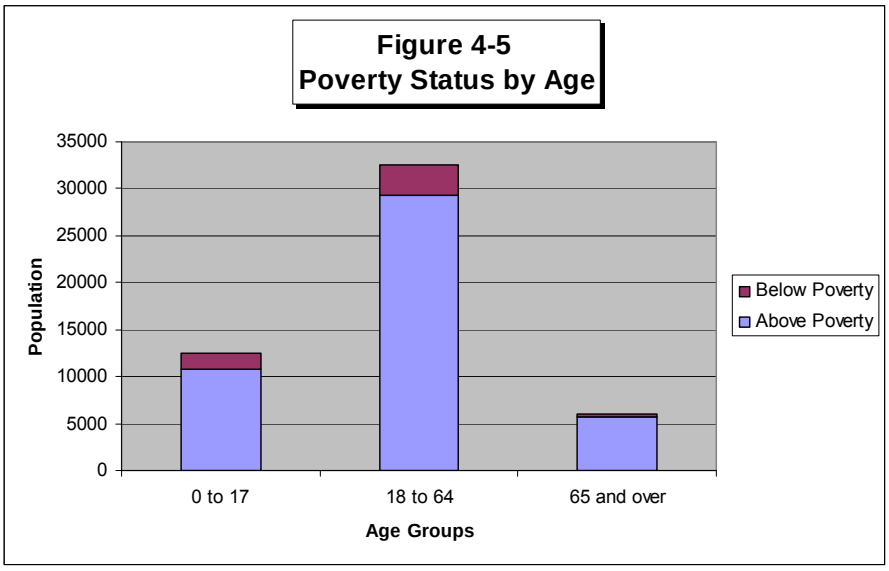
Figure 4-4, using 2000 Census data, shows the relationship of persons in three broad age groups to the national poverty standards. Although the percentage of Bend residents living below the poverty level decreased from 13.2 percent in 1989 to 10.5 percent in 1999, the number of Bend residents living below the poverty level increased from 2,637 people in 1989 to 5,380 people in 1999. The poverty level in Bend is slightly

higher than the county level of 9.2 percent. It is interesting to note that only 12.6 percent of Bend households below the poverty level are receiving public assistance. This may be due, in part, to the number of students and young recreational enthusiasts in Bend that generally have lower incomes.



Source: U.S. Census of Population and Housing, 2000: Summary File 3.

Figure 4-5 provides detail on the number of persons above or below poverty.



While Figures 4-4 and 4-5 show the relationship of Bend residents to the poverty levels, they do not show the magnitude of incomes below or above the poverty levels. Table 4-8 shows the levels at which Bend residents were below or above poverty in 1999.

Table 4-8
Income Level in relation to Poverty Level

Ratio of income to Poverty in 1999	Number of Persons	Percent of Total Population
Less than .50	1,670	3.3%
.50 to .74	1,330	2.6%
.75 to .99	2,380	4.7%
1.00 to 1.24	2,199	4.3%
1.25 to 1.50	2,100	4.1%
1.50 to 1.74	2,165	4.2%
1.75 to 1.84	816	1.6%
1.85 to 1.99	1,369	2.7%
2.00 and over	37,013	72.5%

Source: US Census of Population and Housing, 1990: Summary File 3

Both before and after the 1990 Census was taken, county income levels have shown a steady rise. The average income levels of county families and households increased almost 6 percent a year between 1984 and 1995, a rate faster than the statewide averages. Since Bend is the major employment center in the region it is assumed that income levels within the urban area more or less follow the county-wide patterns. The diverse and expanding economy in Bend provides a wide range of job possibilities, including entry level jobs in the trade and services, which allows young people and additional family workers access to jobs.

The Department of Housing and Urban Development estimated the 2004 median family income in Deschutes County at $57,800— more than four thousand dollars above the average for non-metropolitan areas in the state. Since the last half of the 1980s the per-capita income levels in Deschutes County have steadily increased to match the state average. Even more interestingly, the county income levels have been above the Eugene, Medford, and Salem metropolitan areas since the early 1980s.

The Federal Bureau of Economic Analysis (BEA) reports personal income for counties on a per capita basis. For Deschutes County in 2002, the leading source of personal income was net earnings. Income in this category includes earnings from place of work (e.g. wages and salary) and accounted for 60 percent of total personal income in the county. Income from dividends, interest, and rent accounted for 24.2 percent of personal income. Finally, income from personal current transfer receipts (e.g. retirement benefits, Medicare, income maintenance benefits) accounted for 15.8 percent of total personal income.

Forecasts

In the past, several public and private organizations have prepared population and demographic forecasts for the county or region as a whole, but no independent forecasts have been prepared for the Bend urban area:

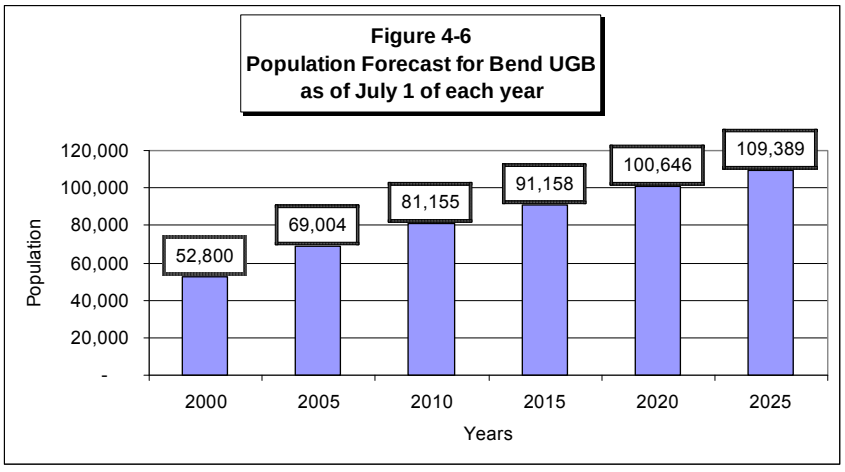
- the Oregon Department of Transportation (1993) — county population and employment forecasts through 2012;
- the Portland State University Center for Population Research and Census (1993) — county population and age forecasts through 2010; and
- the Oregon Office of Economic Analysis (OEA) — county population and employment forecasts through 2040 (1997) and county population forecasts from 2000 to 2040 (2004).

These forecasts were used by the city and county as guides in the coordination of county-wide population forecasts, and the preparation of the urban area population forecast in the plan adopted in 1998. The city coordinated with the planning and legal staff of the cities of Redmond and Sisters and Deschutes County through 2002 and 2004 to develop a final coordinated population forecast for the county and the cities from 2000 to 2025.

Population

All of these forecasts predict continued higher than average growth rates for Deschutes County until early into the 21st century, followed by slower growth rates. The most recent forecasts by OEA (2004) and the coordinated forecast (2004) show the recent trend of steady growth continuing through 2010 and then slowing through 2025. The Bend UGB population forecast for the year 2025 is 109,389. Figure 4-6 shows this forecast in five-year increments.

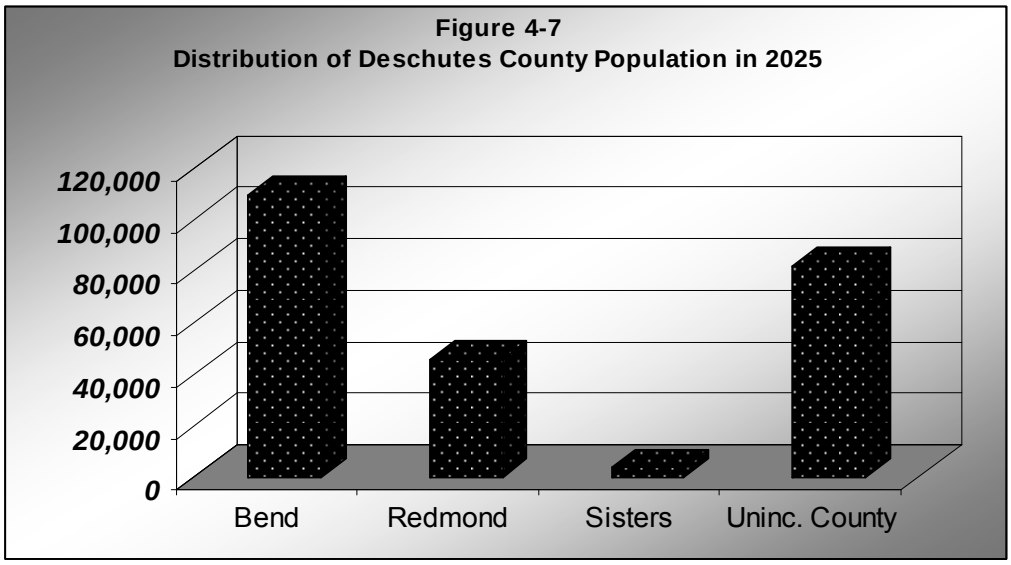
Figure 4-6
Population Forecast for Bend UGB as of July 1 of each year



Source: 2000-2025 Deschutes County Coordinated Population Forecast (August, 2004)

The county and three cities have worked together to coordinate population forecasts for all three urban areas and the non-urban portion of the county. The Bend population forecast is based on a combination of past rates of population growth continuing in the near term and the use of annual growth rates developed by OEA through the long term. Although additional development will occur in rural subdivisions and rural service

centers, the majority of the new residents will settle in the three urban areas. The forecast distribution of the population in the year 2025 is shown in Figure 4-7.



Source: 2000-2025 Deschutes County Coordinated Population Forecast (August, 2004)

As in the past, it is expected that most of the population increase will come from persons moving into the area. The OEA forecast for Deschutes County from 2000 to 2040 shows that most of the future growth in the county's population will be net migration. During the forecast period, net migration accounts for 88 percent to 100 percent of the county's growth in population. By 2025, the percent of the county's growth in population due to net migration will be 94 percent.

Demographics

In the early 1990s about 70 percent of the Bend population was less than 50 years old. The World War II baby-boomers made up the biggest bulge in the population pyramid (about 29 percent in 1990) followed by a plateau of baby-boomer children and grandchildren. In the year 2000 the baby-boomers were in their early 40s to mid-50s age range, and by 2020 they will be in their 60s to mid-70s.

The 2000 Census showed the largest proportion of the city's population was between 25 and 54 years of age representing 45 percent of the city's population. About 27 percent of the population was 19 years or less in age. About 12 percent of the population was 65 years and over in age. The OEA 2000 to 2040 population forecast for Deschutes County included forecasts by age groups. The following table shows the breakdown of age groups for the county in 2000 and in 2025 based on the OEA Deschutes County population forecast for 2000 to 2040.

Table 4-9
Age of Deschutes County Population in 2000 and in 2025

Age Groups	In 2000		In 2025	
	Deschutes County	Percent of Total	Deschutes County	Percent of Total
Total	116,600		214,479	
0-4	7,179	6%	10,647	5%
5-19	24,595	21%	34,460	16%
20-44	39,482	34%	62,654	29%
45-64	30,131	26%	58,738	27%
65-84	13,510	12%	43,303	20%
85+	1,703	1%	4,677	2%

Source: OEA 2000-2040 County Population Forecast

The high percent of growth due to in-migrants affects the population age distribution. Even though the baby-boomer generation will make up part of the growth, an even larger portion of the new residents will be the baby-boomer children and grandchildren. This population growth due to younger people moving into the area will create a population age distribution that is contrary to the historic pattern of the baby-boomer peak followed by a plateau.

Policies

4-1 The city shall review and update the urban area population forecast every five years.

4-2 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.

Chapter 8: Public Facilities and Services

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 1998	Resolution #2247	Comprehensive Plan Update
January 5, 2009	NS-2112	
April 3, 2013	NS-2194	Add Water PFP
December 17, 2014	NS-2230	Add Sewer PFP
2016	NS-2771	Format update, minor text changes to remove outdated text

BACKGROUND

Context

Consideration of the public and private facilities and services within the Bend Urban Growth Boundary is an important focus of the Plan. Several of these services — water, sanitary sewers, energy supplies, and communications — are the backbone needed to support and encourage urban level development. Other urban services such as refuse disposal, emergency services, and storm water disposal are also necessary parts of the mix of urban services. Although most of these facilities and services have a planning horizon greater than 20-years, they are still driven by the population and land use needs forecast in the Plan.

Goals

Adequate public facilities are the key to efficient and stable urban development. The goals below provide general guidance for maintaining and improving the level and quality of urban services as growth occurs in Bend. The citizens and elected officials strive:

- To have public and private utility systems provide adequate levels of service to the public at reasonable cost;
- For the city, county, and special districts to coordinate the provision of adequate urban services in an efficient and timely manner to support urban development;
- For new development to pay its fair share of the cost of major facilities needed to support development;
- To ensure that public services will not negatively impacts on the environment or the community; and
- To locate and operate public buildings and other public facilities to best serve the needs of the residents.

Overview

The Public Facilities and Services chapter describes existing facilities and utilities in Bend and also describes what city facilities are needed to meet projected growth. The listing of city water and sewer projects planned for and expected over the next twenty years provides a framework for decisions on when, where, and how public facilities will be provided to support the projected growth. The city will use the listing of projects as a basis for its annual capital improvement budget.

Sewer Collection Systems Facilities

The City adopted a public facility plan for sewer collection by Ordinance No. 2111 in 2009. The plan was based on the city's 2007 Collection System Master Plan and identifies future improvements to the sewerage collection facilities required to serve

long range growth in Bend. However, the city's 2009 Public Facility Plan adopted by the City Council was never acknowledged by the state.

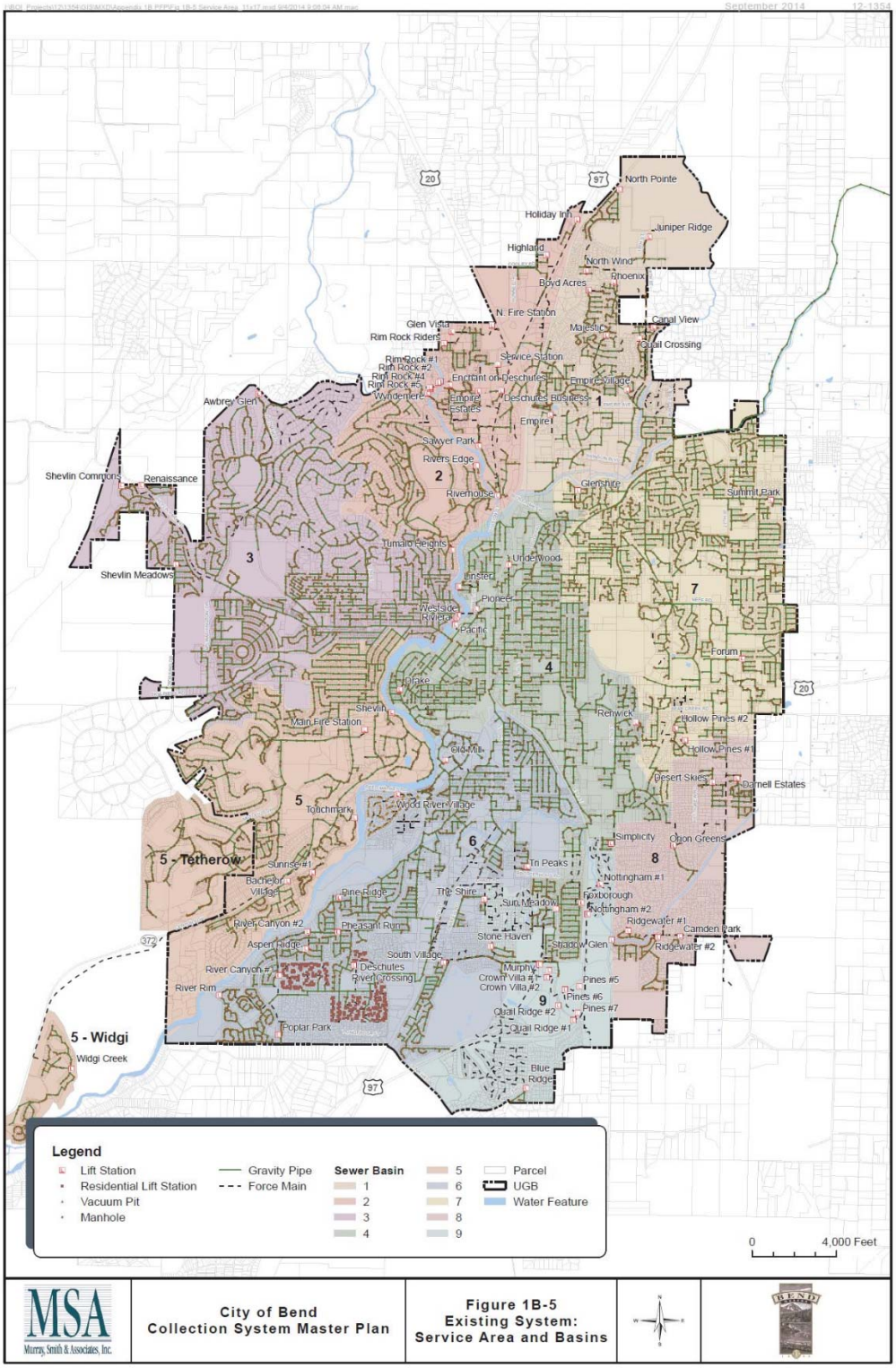
In response to the 2008 UGB Expansion Remand, the City began a comprehensive planning process to update the previous Collection System Master Plan developed in 2007. This planning effort has built on information from the previous master plan, leveraged improvement concepts and utilized system information collected and analyzed in that report. The adopted 2014 Collection System Public Facility Plan replaces the 2009 Public Facility Plan and provides guidance and sound stewardship of the City's sewer collection system for the 2013 – 2033 planning period.

Service Area

The collection system service area includes all areas within the city limits of Bend and the Urban Growth Boundary that are either currently served by the City's wastewater collection system or will be served by the system within the 20-year planning period. To determine the future development projections within the UGB, the City relied upon and applied the adopted Comprehensive Plan designations.

The City's Collection System Public Facility Plan separates the primary collection system into nine major sewer basins covering the approximate 35 square miles of the UGB. These nine major sewer basins are further sub-divided into several smaller sewer sub- basins for the purpose of determining flow capacity. The wastewater analysis and future forecasts consider existing customers, future customers and the conversion of septic to sewer connections within the UGB. There are currently 3,103 residential units and 158 non-residential acres that are served by a County permitted septic system within the UGB. Within the 20-year planning period it is assumed that these residential units and non- residential acres will redevelop and/or connect to the city's collection system.

Figure 8-1 – Municipal System



The City's primary wastewater collection system is generally comprised of manholes, gravity pipelines, City-owned lift stations and force mains that convey sewage to the wasterwater reclamation facility through 249 miles of gravity pipe and 69 miles of force main and pressure sewer pipeline. Most of the gravity collection system was constructed in the late 1970's, when the City received federal funding to construct a centralized wastewater treatment plant. The City completed its sewerage collection system and treatment plant in 1983. Since that time a number of upgrades have occurred in both the plant and collection system. The wastewater treatment plant has capacity for an average flow of approximately seven million gallons a day. Table 8-1 charts the average daily flows at the wastewater treatment plant and shows a gradual increase of the average daily flow. The flow data includes seasonal wet weather events.

Table 8-1
Annual Average Flow from Historical Records at the WRF

Year Average Daily Flow	Year Average Daily Flow
2007	5.41
2008	7.22
2009	5.6
2010	5.5
2011	5.3
2012	5.4
2013	5.91

1) 2007 and 2013 average calculated from flow meter data (2-month period).
2) Suspected error in inflow data at the WWTP. Inflow meter was recalibrated after 7/20/2009.

The master plan for the wastewater reclamation facility (WRF) was completed in 2008 by Carollo Engineering. The plan for the WRF was submitted to the Department of Land Conservation and Development in 2009. The Land Conservation and Development Commission (LCDC) acknowledged the 2008 plan for the WRF through Order 001795 in November 2010. The WRF Master Plan identifies short term and long term capacity improvements that will enable the City of Bend to minimize expansion costs by fully utilizing the existing facilities. The 2014 Collection System Public Facilities Plan proposes improvements to increase the capacity of the collection system to 11.9 MGD within the 20- year planning period. The design of the WRF was completed in 2012, with construction beginning in the summer 2013. The City expects the WRF expansion to be completed by 2016.

Optimization

The City utilized an optimization process to determine the combination of system improvements that would satisfy hydraulic performance criteria and minimize overall life- cycle costs. The optimization model enables an exhaustive and objective evaluation of feasible collection system improvement alternatives. The optimization software, Optimizer WCSTM, is a decision-support software program that integrates improvement alternatives, comprehensive life-cycle costs, design criteria and the calibrated hydraulic model of the collection system. In a single optimization analysis, the software evaluates over 100,000 possible solution configurations and assesses life-cycle cost and hydraulic performance simultaneously while sizing system improvements. Over the course of this

project, over one hundred individual optimization runs were completed, representing a total analysis of more than 10 million trial solutions.

The optimization process identified short-term and long-term capacity upgrade projects to be phased over the 20-year planning period.

Capital Improvement Program
The Capital Improvement Program (CIP) describes proposed improvements that are required in both the short-term (1-5 year) and long-term (6 to 10 years and 11 to 20 years) to provide reliable sewer collection throughout the City's current UGB.

In response to existing and future hydraulic deficiencies, condition deficiencies and other operational issues identified by O&M staff, there are several major projects that the City should undertake in the short-term (1 to 5 years). Below is the list of short-term projects and estimated project cost in 2013 dollars.

1. Southeast Interceptor (SEI) Phase 1 - $19,681,000.
2. Colorado Lift Station - $4,208,000.
3. North Area Improvements - $1,370,000.
4. Plant Interceptor Rehabilitation - $5,400,000.
5. Valhalla Sewer Relocation and Odor Control - $1,616,000.
6. Condition-Related Lift Station Improvements - $5,667,000.

There are also a number of recommended long-term (year 6 through build-out) improvement projects required to support anticipated increases in collection system flow within the existing UGB, provide service to unsewered areas, and to plan for ongoing system repair and replacement. Below are the primary long-term projects and the estimated project costs in 2013 dollars.

Southeast Interceptor, Phase 2 - $8,379,000.
Northeast Interceptor - $15,086,000.
Decommissioning of Lift Stations - $700,000.
Long-Term Repair and Replacement Program $27,070,000.
Local Area Improvements – $5,000,000.
Ongoing Sewer Flow Monitoring, Modeling, and Planning Projects - $1,500,000.

The actual project costs will likely vary from the estimates presented. In addition, the project estimates will change over time due to fluctuations in actual labor and material costs, competitive market conditions, site conditions, final project scope, implementation schedule, continuity of personnel, and other unforeseeable factors. Because of these factors, project feasibility, benefit-to-cost ratios, risks and funding must be carefully reviewed prior to making specific financial decisions or establishing project specific budgets.

Sewer Collection System Financial Strategy
The City's financial strategy for the collection system considers the current and future financial obligations of the utility, operation and maintenance needs, fiscal policy achievement and the ability to support the completion of the capital projects identified in this CSMP update.

The overall goal of the financial plan is to have the annual water reclamation utility total resources (rates and fees) set at a sufficient level to meet annual uses (operations, maintenance, debt service, capital costs and fiscal policy achievement) to ensure a self-supported utility. The primary source of funding for the utility is derived from ongoing monthly charges for service, with additional revenue coming from miscellaneous fees/charges, interest income and system development charges (SDCs). The City Council controls and approves the level of user charges as needed to meet financial objectives. The financial plan considers the total system costs of providing water reclamation services, both operating and capital. The following elements were completed as part of the financial plan:

Capital Funding Plan. Identifies the total Capital Improvement Plan (CIP) funding obligations of the planning period. The plan defines a strategy for funding the CIP including an analysis of available resources from rate revenues, existing reserves, system development charges, debt financing, and any special resources that may be readily available (e.g., grants, developer contributions, etc.). The capital funding plan impacts the financial plan through the use of debt financing (resulting in annual debt service) and the assumed rate revenue available for capital funding.

Operating Forecast. Identifies future annual non-capital costs associated with the operating, maintenance, and administration of the water reclamation system. Included in the financial plan is a reserve analysis that forecasts cash flow and fund balance activity along with testing for satisfaction of actual or recommended minimum fund balance policies. The financial plan ultimately evaluates the sufficiency of utility revenues in meeting all obligations, including cash uses such as operating expenses, debt service, capital outlays, and reserve contributions, as well as any coverage requirements associated with long-term debt. The plan also identifies the future adjustments required to fully fund all utility obligations in the projection period.

The City Council approved a nine percent rate increase effective on October 1, 2014. All monthly rates (monthly rate and volume rate) will increase uniformly by nine percent. Residential customers inside the city will pay a monthly rate of $48.36 per dwelling unit, and residential customers outside the city will pay a monthly rate of $49.82 per dwelling unit. The financial plan indicates that an additional 3.1 percent per year increase will be needed to meet the water reclamation utility rate revenue requirement within the 10-year financial planning horizon.

System Development Charges

SDCs are one-time fees imposed on new and increased development to recover the cost of system facilities needed to serve that growth. An SDC can include two major components:

- A reimbursement fee that reflects the cost of existing infrastructure with capacity that is available to serve growth
- An improvement fee that reflects the portion of the cost of future projects that is attributable to providing capacity for growth.

The financial plan above assumes that the city's sewer SDC remains at its current level of

$2,986 per equivalent dwelling unit. The City has recently initiated an SDC study, which will have a separate public process. That process is expected to begin late 2014 and be complete by June of 2015 and will incorporate all new information contained in this plan to determine the appropriate SDC and its implementation.

Water Facilities and Systems

The quality of water in the Bend urban area is a matter of major importance. Not only is water necessary for the needs of residential, commercial, and industrial users, but it supports many of the recreational and scenic opportunities that make the Bend area a desirable place to live.

In 2006, the city engaged in an update to the water system master plan to serve the existing urban growth boundary, the urban reserve area identified in this plan, and potential areas for future expansion of the UGB. This 2006 master plan followed the development and approval of a water management and conservation plan (WMCP) in 2004. The City relied on these documents, water planning documents from the Avion Water Company and Roats Water Company, and reports from the City Engineer updating information from the 2007 Water Master Plan to develop an updated Goal 11 water public facility plan (PFP) for the existing Bend UGB. This 2013 Water PFP is incorporated as the Goal 11 public facility plan for water and identifies the capital improvements needed to serve the existing and future development within Bend's UGB.

Municipal System

The City of Bend is one of three water suppliers within the UGB. The city's water system in 2006 included about 22,000 service connections. Since 1926, the City of Bend's main source of water has been from Bridge Creek in the Tumalo Creek watershed. Tumalo Creek originates on the eastern slopes of Ball Butte and Broken Top Mountain about 20 miles west of Bend in a protected watershed area, which lies within the Deschutes National Forest. Figure 8-2 shows the annual water use from 1998-2005 in acre feet. Figure 8-3 shows the annual water use pattern, using daily use data from 2005.

The Deschutes Watershed has excellent water quality, considering both chemical and bacteriological quality with only chlorination treatment. The water is a consistent 48°F winter and summer, and is clear with the exception of slight turbidity during period of high runoff from the watershed. These periods occur only occasionally, and last only a few days. The 1986 Safe Drinking Water Act required that all surface water systems in the nation provide filtration unless stringent watershed control, raw water quality and disinfection systems were met. In 1992 the city demonstrated sufficient evidence to meet the criteria, and obtained an exemption from the Surface Water Treatment Rules contained in the 1986 Act. The Bridge Creek source can deliver up to 13.5 million gallons per day. The City supplements the Bridge Creek source with deep groundwater wells. In 2006 the city had 21 wells on line to supplement the Bridge Creek source. These wells increase the delivery capacity of the city system to approximately 36 million gallons per day. In addition, the city has 28.0 million gallons of reservoir storage. The city's 475 miles of water distribution system is primarily composed of ductile iron pipe.

The city water system historically provided metered service for industrial, commercial, and multifamily developments. However, the city was one of the last major water systems in the state to use flat rate (non-metered) billing for residential service

connections. As of December 2004, the City has become fully metered for all customers. This included conversion to automated meter reading technology, as well as installation of premise isolation cross connection protection at every service connection as part of our Safe Drinking Water Program. In 2004, the City updated its required Water Management and Conservation Plan which outlines various conservation related benchmarks, in order to meet conditions by the Oregon Water Resources Department as part of obtaining new water rights to meet the needs of growth.

The city's 2007 Water System Master Plan Update identifies water supply, transmission, and storage needs throughout the city's service territory within the UGB. Additional wells, reservoirs, main transmission lines, and smaller distribution lines will be needed to meet the projected urban area growth.

Figure 8-2

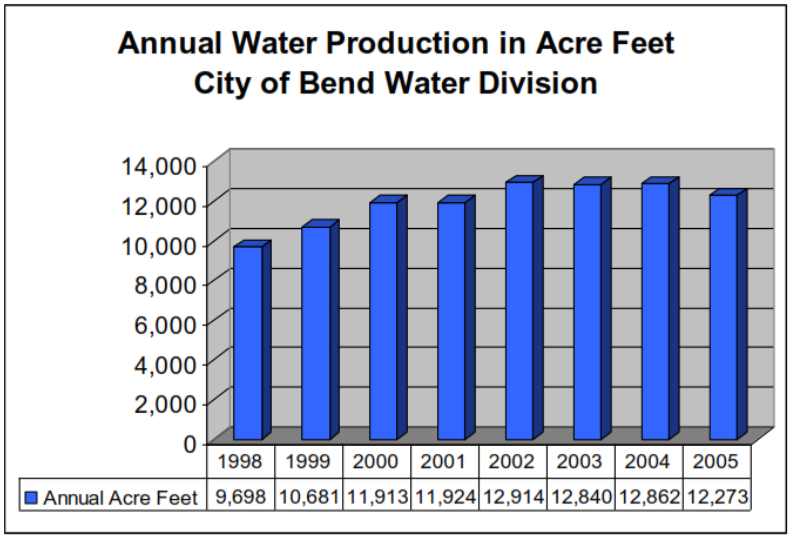


Figure 8-3

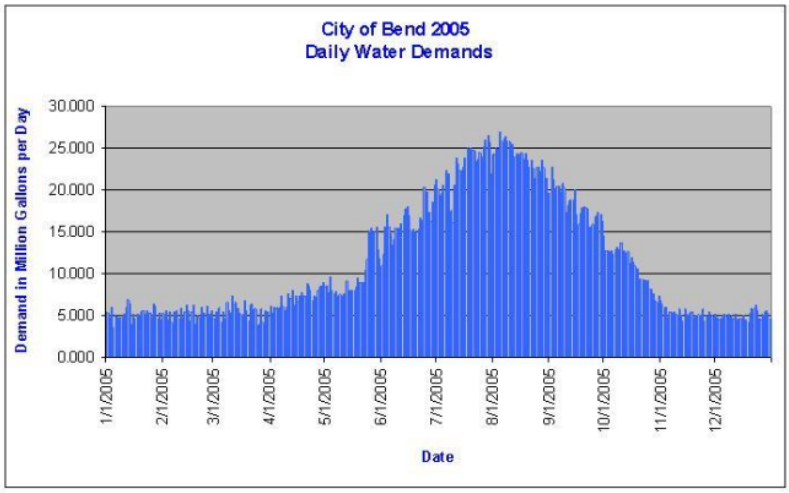
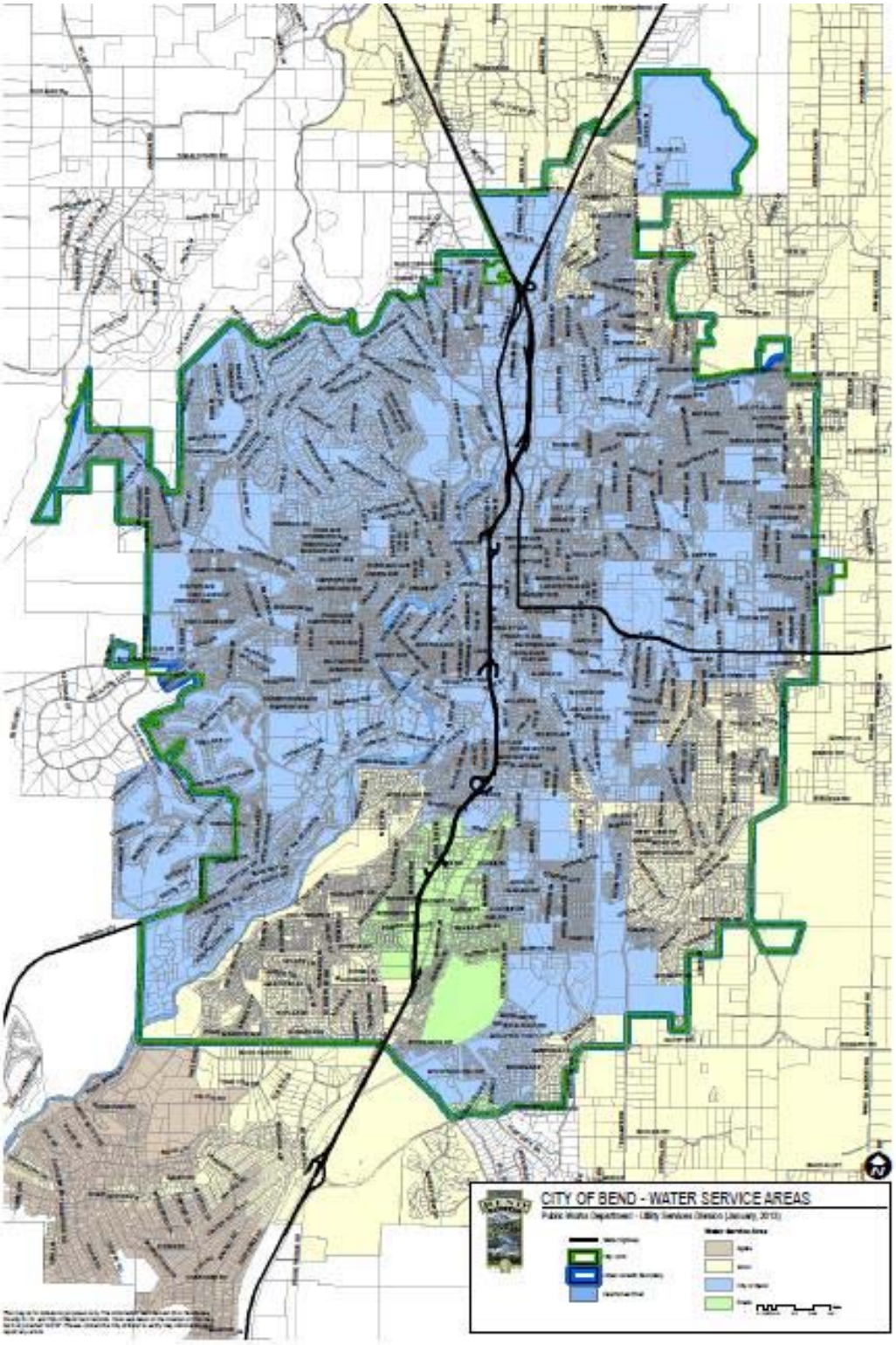


Figure 8-4
Water Utilities in the Bend Urban Growth Boundary



Private Providers
Currently, the City of Bend serves water to approximately 70% of the customers within the UGB. There are two private utilities supplying domestic water to the majority of the remaining customers. Approximately 9,200 service connections within the UGB are furnished domestic water through private water systems. Figure 8-4 shows the extent of both the city's service area (blue) and the private providers; Avion (light yellow or tan) and Roats (green). The City has entered into franchise agreements with Avian Water (See Ordinance NS-1514, as amended) and Roats Water Company (See Ordinance NS-1747) through which the City has agreed to Avion Water Company and Roats Water Company providing water to its customers in the city's boundary. Both franchise agreements have been incorporated into the City Code under Chapter 11, Franchises. In addition, the City's water system has inter-ties with both Avion and Roats, which also have inter-ties between their respective systems.

Water System Financing
Table 8-2 lists the various water improvement projects the city plans to construct through the year 2028 to support the projected growth and land uses in the Bend urban area. The description, location, timing and estimated cost of listed facilities may change as a result of subsequent design studies, capital improvement programs, environmental studies, and changes in funding sources. City facilities may be constructed earlier than planned by an owner/developer choosing to develop an area prior to the scheduled extension or expansion of facilities by the city.

The city has adopted System Development Charges (SDCs), as allowed under state law, to help pay for new facilities. SDCs are levied against all new uses at the time of development. These fees are earmarked for major system improvements identified in the city's 2007 Water System Master Plan Update such as reservoirs, wells, transmission lines, and treatment facilities. As of fiscal year 2006-07, the water System Development Charge is 100 percent of the allowable maximum charge. The City Council determined that this rate reflects the proportionate share of system improvement costs that can be attributed to new growth. The remaining share of system improvement costs benefit the whole community and are collected as a part of the monthly user fees. For more information about short and long term projects for the City's water system please see the 2013 Water Public Facilities Plan.

Storm Drainage Facilities and Systems

For many years, the City of Bend's drainage system has depended primarily on underground injection (dry wells and drill holes) to discharge stormwater into the fractured volcanic rock that underlies much of the City. Dry wells do not work well in areas underlain by layers of impermeable material unless those layers are penetrated. Drill holes are an alternative to dry wells, intended to penetrate impermeable layers to reach more permeable material beneath them.

Bend does not have a city-wide system of pipes collecting and transporting stormwater for treatment. The lack of defined drainage ways, the expense of digging in rock, and the difficult topography have limited the installation of piping. The existing piped system to the Deschutes River is limited to about 14 miles of pipe and 28 river outfalls. There are approximately 4,600 dry wells and 1,000 drill holes on public property in the City

and an unknown number on private property. Including interconnections between inlets and UICs, there are 47 miles of pipe total throughout the City.

Water Quality and Stormwater Management
A large part of Bend's drinking water comes from a deep, very high-quality and abundant aquifer beneath the City that is fed by snow melt high in the Cascade Mountains. The City and its residents are committed to protecting this valuable resource along with protecting surface water quality. Protection of all groundwater including perched water and seasonal high groundwater is required by the State of Oregon. To comply with the regulations for both stormwater and groundwater, the City prepared an Integrated Stormwater Management Plan (ISWMP). The ISWMP is a living document that is updated as necessary to meet requirements of the permits and the needs of the City.

The ISWMP outlines a comprehensive program to protect the quality of the Deschutes River and the City's groundwater. The ISWMP identifies a number of BMPs for preventing pollutants from entering stormwater or removing them before the water is discharged to the river or underground. The following BMPs are required elements of the Phase II (surface water) program:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Management Activities
- Post-Construction Stormwater Management in New Development and Redeveloped Areas
- Pollution Prevention/Good Housekeeping for Municipal Operations

Bend's ISWMP also addresses monitoring and protecting drinking water sources provisions to meet UIC requirements.

In August 2014 the City adopted its first Stormwater Master Plan (SMP). The City relied on these documents and prior planning documents to develop a Goal 11 stormwater public facility plan (PFP) for the existing Bend UGB. This 2014 Stormwater PFP is incorporated as the Goal 11 public facility plan for stormwater and provides a stormwater management strategy and identifies the capital improvements needed to serve the existing and future development within Bend's UGB.

Stormwater Funding Strategy
In 2007 the City Council established a Stormwater Utility Fee for the sole purpose of funding Stormwater infrastructure projects and programs. The SMP provides a cost strategy. The proposed stormwater public improvements have a 20-year capital cost of $25.2 Million. Utility operating revenue needs were modeled to range from $2.5 Million/year at present to $5.4-$5.6 Million/year by FY2032-33 depending on the rate assessment approach taken. Monthly stormwater utility rate increases were estimated in two ways: a gradual rate increase and an accelerated rate increase. The immediate calculated monthly stormwater utility rates were modeled to be between $4.36 and $5.80 per ERU and the FY 2032-33 monthly stormwater utility rates would be anticipated between $6.53 and $6.80 per ERU depending on the rate adjustment approach taken. Below is the City's 2013-2014 Stormwater Budget.

Table 8.2
Stormwater Management Budget for Fiscal Year 2013-2014

Stormwater Management Budget (Fiscal Year 2013-2014):	
Operation and Maintenance	$1,240,000
Engineering and Project Management	$580,700
Capital Improvement Projects	$2,750,000(1)
Water Quality Management	$378,000
Utility Administration & Public Response	$576,000
Total	**$5,524,700**

Note:
(1) Current Capital Improvement Budget is $2,750,000, based on carryover from previous years and an annual budget currently averaging $300,000

Solid Waste Disposal

Solid waste disposal for the urban area occurs at one county facility, the Knott Pit Sanitary Landfill, just outside of the Urban Growth Boundary on the east side of 27th Street. Deschutes County studies estimate that Knott Landfill will reach capacity by the year 2025. However, the recent trend of 10 to 18 percent annual increases in municipal solid waste flows may shorten that life span.

A second landfill just for construction debris and demolition material located adjacent to Simpson Avenue wihin the Urban Growth Boundary was in operation prior to 1997. This demolition landfill site is about 80 acres, and abuts residential lands on the north, and west, and commercial development along its east and south sides.

Collection of solid waste is done by private providers under city and county franchise. In 2005 it was estimated that only about 92 percent of the households in the Bend Urban Growth Boundary had signed up for a weekly collection service. The two garbage haulers in the Bend urban area, Bend Garbage and Cascade Disposal, provide weekly curb-side pickup of municipal solid waste and recyclable materials. Recyclables picked up at curb-side include aluminum, corrugated cardboard, paper bags, magazines and catalogs, and used motor oil.

The Department of Environmental Quality's 2005 Waste Diversion Report indicated that 160,707 tons of waste were deposited in Knott Landfill and 62,523 tons of waste were "diverted" (recycled by households and businesses either through curb-side service, or dropped off at the county's yard debris mulch program, as well as recycling occurring out of the solid waste system such as bottle bill returns and the scrap metal industry). When backyard composting and efforts in waste prevention and reuse are considered, the percentage of solid waste material being recycled increases from approximately 28 percent to approximately 34 percent.

Other Urban Utilities

Electricity within the urban area is provided by Pacific Power and Central Electric Cooperative. Cascade Natural Gas Company provides natural gas service to most parts of the urban area. Adequate electric natural gas resources exist to serve the Bend urban area through the planning period.

Local (land-line) telecommunication services are provided by Qwest. Many private companies compete to provide long distance and cellular phone service. Cable television service within the urban area is provided by Bendbroadband, which also provides phone and high-speed internet service. Private utility providers within the city limits operate under non-exclusive franchise agreements with the city.

Public Buildings and Facilities

Downtown Facilities

The Bend City Hall at the south end of downtown was built in 1989 and expanded in 1992. City Hall comprises an area of approximately 26,000 square feet. Also located at the south end of downtown are the Bend-La Pine School District Administrative offices, the Deschutes County historical museum, the Bend Public library, and other public buildings.

The County courthouse and various County offices are located in several buildings at the north end of the downtown area. A new 80,000 square foot administration building was constructed in 2004. Half of this facility is leased to the State Department of Human Services and Department of Justice.
The Bend Metro Parks and Recreation District offices are located between the Old Mill District and the Deschutes River.

Fire Department Facilities

The Bend Fire Department serves the city, the urban area, and some areas beyond the Urban Growth Boundary through the Rural Fire District service contract. The Bend Fire Department covers approximately 164 square miles for fire protection and 1,450 square miles for ambulance operations. The “Main Station” (Old Station 301) was built in 1920 and was located downtown at 5 NW Minnesota Avenue. After serving the Bend Fire Department as the main station and the administrative office for 80 years, the department moved out of the station in 2000 to its new location at 1212 SW Simpson Avenue in order to provide better, faster coverage for the community. Old Station 301 was remodeled and became a mixed-use facility including dining, retail, office and residential spaces. The Fire Administration Building at 1212 SW Simpson Avenue was constructed in 2000. It houses the department administrative, prevention and support staff. The “West Station” (Station 301) is also located at 1212 SW Simpson Avenue, on the west side of Bend near Century
Drive. The station is 12,000 square feet in size and was built for a cost of $1.6 million in 2000. The “Tumalo Station” (Station 302) is located at 19850 4th Street in the unincorporated community of Tumalo, between Bend and Sisters. The station was built in the early 1970s. The “South Station” (Station 303) at 61080 County Club Drive was also built in 2000. The “East Station” (Station 304) at 62420 Hamby Road was built in 2003 and is the newest station. The “North Station” (Station 305) at 63377 Jamison Street was built in 2000 and is located on a seven-acre parcel next to the Deschutes

County Sheriff's Office. Located behind Station 305, the department Training Center includes a five-story tower with attached garage, numerous training props, and a driver training area. The Training Center also features a classroom and training office building located near the tower. The Fire Department is planning on building a "Central Station" on the Pilot Butte City Campus within the next ten years in order to better serve the rapidly growing central- east section of Bend.

Law Enforcement Facilities

Law Enforcement services in the urban area are provided by the City of Bend Police Department and the Deschutes County Sheriff's Department. The Oregon State Police regional headquarters is also located in Bend. The City of Bend Police Department was located in City Hall until 2002, when a new 27,000 square foot building was constructed at the intersection of 15th Street and US Highway 20 to better accommodate and headquarter all police business. As with all other departments at the City, faster than anticipated growth has created a need for additional staff to serve the community and this has, in turn, created the need for additional space. As a result, the Police Building was expanded to include another 19,000 square feet, and now also houses the Bend Municipal Court.

In 1997, Deschutes County constructed a new public safety complex off of Highway 20. Within this complex there is a 228-bed adult jail, the Sheriff's Office, the Adult Parole and Probation offices and transitional housing. The County also constructed the Health and Human Services building off 27th Street on the east side of Bend. This building provides space for the County's Mental Health and Health Departments.

Public Works Facilities

The City's Public Works Facilities are located in three primary areas: The Pilot Butte Campus Site, which is located west of 15th Street between Highway 20 and Bear Creek Road, the Boyd Acres offices, and the Water Reclamation site, which is located northwest of the Bend Airport on McGrath Road. Numerous additional satellite facilities that house vehicles, utility equipment or materials are located throughout the service area.

The Pilot Butte City Campus site houses Public Works administration and all departmental divisions except Water Reclamation. City Council authorized a substantial master planning effort for this site in 2006 in order to determine space needs for the next twenty years for the Public Works, Police, Community Development and Fire Departments, all of whom will have facilities on the site.

The existing main Public Works building houses Public Works administration and provides crew spaces for the Street and Water Divisions. This 41,000 square foot building will likely undergo significant, phased-in changes in the next seven years in order to bring the building into Code and ADA compliance as well as provide for the anticipated 20 year needs of the department.

A new facility to house Public Transportation operations was recently constructed, at the southwest corner of the Pilot Butte Campus site. The construction was largely funded through a $4 million *ConnectOregon* grant, and includes a 5,500 square foot transit operations office, five vehicle maintenance bays and space for transit vehicle parking. The City's public transit program is operated by Cascade East Transit through

Central Oregon Intergovernmental Council. The transfer of this program to COIC began in 2010 and was completed in 2011.

The Water Reclamation facility is located outside of the UGB on 1,600 acres northeast of Bend and includes eight main structures. A new Headworks building was constructed in 2008. This facility will be heated by hot water that is heated by methane gas captured from the waste products entering the facility. New facilities completed within the last five years include a new training building, a Level IV filtration facility and a new digester. The new facilities plan for the plant was completed in 2008, and acknowledged by the Land Conservation and Development in 2010. This plan provides for an expansion and upgrade plan for water reclamation to serve the City up to the year 2030.

The Bend Airport

The Bend Municipal Airport is located on 415 acres situated five miles east of the city limits of Bend. Owned by the City of Bend, the airport is located in Deschutes County and is currently outside the Bend Urban Growth Boundary. Airport facilities consist of a single instrument capable runway, 5005 feet in length, a full parallel taxiway, more than 60 hangar and industrial buildings, and parking facilities for aircraft and vehicles. The Bend Municipal Airport is identified by the Oregon Department of Aviation as a Category 2, High Activity Business/General Aviation airport, with approximately 200 based aircraft and an estimated 42,000 operations in 2005.

Over the past few years, demand at the Bend Airport has increased significantly. Continued business expansion by the existing tenants, the addition of Epic Aircraft in 2005, and continued growth and demand has wrought a dramatic increase in activity at the Airport. The corresponding demand for new services and facilities provides challenges to current funding levels.

Current improvements to the Airport infrastructure include the relocation of the single runway at the Airport to meet federal design standards and provide an adequate surface for the existing aircraft fleet mix. This project, beginning in 2007, is scheduled for completion in 2008. Following the runway relocation project, development of an eastside parallel taxiway will be planned for construction in 2009, with completion scheduled for the same year. At this time, it is anticipated that a new Airport Master Plan to clarify the future direction of the Airport and to meet future user needs will be initiated.

Policies

Sewer Collection Facilities

8-1 All new development within the City Limits should be connected to City sewer.

8-2 The city is the primary provider of sewage collection and treatment services for the City's service area under Statewide Planning Goal 11.

8-3 To reduce the reliance on individual sewage disposal systems within the Urban Growth Boundary the city will work with

unsewered neighborhoods to find solutions for sewer service.

8-4 The city should collect a sufficient amount of revenue to allow the creation of capital project reserves and to replace aging infrastructure in addition to operational needs of the utility.

8-5 Staff should report to Council on an annual basis regarding the status of the Collection System Master Plan, Capital Improvement Projects and capacity issues within the collection system.

8-6 The City will annually update its financial model as part of the review of sewer rates and report to Council on any changes in the 20-year financial outlook and subsequent rate impacts.

8-7 The master plan shall be updated at least every 5 years with official review and adoption by Council.

8-8 The preference of the City is to serve development through gravity conveyance and use of the Water Reclamation Facility.

8-9 If lift stations are required to serve new development, regional pump stations shall be relied upon to the extent practicable versus individual or smaller lift stations.

8-10 These policies will be implemented through the City of Bend Public Improvement Construction Procedure Standards & Specifications.

8-11 The City should look for reasonable opportunities to decommission energy- and maintenance-intensive lift stations as part of new development or other City infrastructure projects.

8-12 The City will consider the conservation and water reuse measures in the Water Management and Conservation Plan in infrastructure planning to reduce overall impacts to the sewer collection and treatment system.

Water Facilities and Systems

8-13 The City of Bend is the provider of water service for the City's service area under Statewide Planning Goal 11

8-14 Avion Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Avion adopted under Ordinance NS 1514, as amended.

8-15 Roats Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Roats adopted under Ordinance NS 1747.

8-16 Within the urban planning area, public and private water systems shall be consistent with City Standards and Specifications for construction and service capabilities.

8-17 The City shall continue to coordinate with private providers and irrigation districts in matters of water concerns within the Urban Growth Boundary.

8-18 The City shall continue to implement a water conservation program that emphasizes education, enforcement, metering, and other methods to use water efficiently.

8-19 The City may allow water service outside the UGB at rural levels consistent with Goal 11.

Storm Drainage Facilities and Systems

8-20 The City of Bend is the stormwater utility for the city limits and urban growth boundary. As the utility, the City shall review its Stormwater Master Plan and Integrated Stormwater Management Plan as needed for compliance with changes in state or federal requirements and at least every five years.

8-21 The City will initiate funding options (e.g., SDCs, grants, low-income loans) for stormwater capital projects in accordance with applicable laws.

8-22 Due to the lack of a defined drainage pattern for most of the urban area, development shall, to the extent practicable, contain and treat storm drainage on- site. In instances where containing storm drainage on-site would not be safe or practicable, the developer shall enter into a formal and recorded arrangement with the City or a private party to adequately address the storm drainage off site such as a regional control.

8-23 The use of stormwater disposal systems shall be coordinated with the Oregon Department of Environmental Quality and Water Resources Department to protect ground water and surface water.

8-24 The City shall work to minimize the discharge of untreated stormwater run-off from streets directly into the Deschutes River and Tumalo Creek.

8-25 All public and private stormwater facilities shall be designed and operated in accordance with the City's Stormwater Master Plan and shall meet appropriate drainage quantity and quality requirements, including, but not limited to, the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Stormwater

Permit, Integrated Stormwater Management Plan, WPCF UIC Permit and any applicable Total Maximum Daily Load requirements (TDML) requirements. Underground injection and surface discharges to the Deschutes River or Tumalo Creek shall only be approved when other alternatives, such as retention basins or bioinfiltration swales, are not reasonably available. Low impact site designs shall be a required part of all new development and redevelopment projects.

8-26 The ability to provide stormwater facilities for developments proposed for annexation into the City shall be a consideration for annexation approval.

8-27 The City shall reduce the quantity of runoff and discharge of pollutants to the maximum extent practicable by integrating stormwater runoff controls into new development and redevelopment land use decisions. Controls may be required to minimize illicit discharges or pollutants of concern.

8-28 The City shall implement and enforce requirements for an erosion and sediment control program for public and private construction and post-construction activities.

8-29 All developments shall evaluate the potential of a land parcel to detain excess stormwater runoff and require incorporation of appropriate controls, for example through the use of detention facilities to address quantity, flow, and quality concerns.

8-30. The City shall seek efficiencies and consistency by working with other municipalities and stakeholders within Central Oregon on land use issues to address flood control, watershed health and stormwater pollution prevention.

8-31 Hazard and resource areas with the following characteristics shall be considered unsuitable for urban development:

- flood zones;
- water supply watersheds; and
- riparian corridors and natural drainageways.

8-32 Development on slopes in excess of 10 percent shall require special consideration to prevent construction-related and post-construction erosion.

8-33 The City shall regulate development near water courses to reduce erosion and pollution and to provide open, natural areas.

8-34 Land uses that pose a major threat to water quality, including commercial and industrial uses such as automobile dismantlers,

waste transfer disposal facilities, light industries, and other uses that have a significant potential for pollution, shall not be located within the vicinity of stream, percolation facilities, reservoirs, drill holes or where pollutants could easily come in contact with flood waters, high groundwater, flowing rivers, or reservoirs. Such uses shall be required to reduce any threat of pollution to an insignificant level as a condition of approval.

8-35 As part of site approval, or as a condition on tentative maps, as necessary, the City shall require permanent stormwater pollution control site design or treatment measures or systems and an ongoing method of maintenance over the life of the project.

8-36 The City shall minimize particulate matter pollution through controls over new and redevelopment (including erosion and sediment controls on grading, quarrying, vegetation removal, construction, and demolition), industrial processes, parking lots and other activities that pose a threat to water quality.

8-37 The City shall require the following stormwater protection measures for all new development and redevelopment proposals during the planning, project review, and permitting processes:

- Submit geotechnical site assessments when dry wells or other infiltration or injection systems are proposed.
- Avoid conversion of areas particularly susceptible to erosion and sediment loss (e.g., steep slopes) or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- Retain natural drainage channels in their natural state to prevent undue erosion of banks or beds, and preserve or restore areas that provide water
- quality or quantity benefits and/or are necessary to maintain riparian and aquatic biota.
- Promote site development that limits impacts on, and protects the natural integrity of topography, drainage systems, and water bodies.
- Promote integration of stormwater quality protection into construction and post-construction activities at all development and redevelopment sites.

8-38 The City shall work to reduce transportation-related sources of water pollution, particularly in stormwater pollution. Any means and actions that result in a reduction in vehicle-miles-traveled would benefit congestion and reduce both air and water pollution.

8-39 The City shall recognize and publicize the relationship between air pollution and water pollution in the deposition of airborne contaminants, including metals and fine particulate matter onto streets and other surfaces.

8-40 To minimize illicit discharge to stormwater and groundwater from septic systems, the City shall require lots with onsite sewage disposal to connect to the city sanitary sewer whenever state rules governing connection are met.

Solid Waste Disposal

8-41 The city and county shall encourage recycling beyond the level required by state law as an alternative to landfill disposal.

8-42 The county shall reduce dust and blowing refuse at the landfills in order to ensure as few adverse impacts as possible from these facilities.

8-43 The city shall explore methods, including mandatory garbage service, to gain 100 percent disposal of waste at designated landfill sites and discourage the dumping of wastes on public and private lands.

8-44 The City shall coordinate with Deschutes County on the creation of a new solid waste management plan.

Public Buildings and Facilities

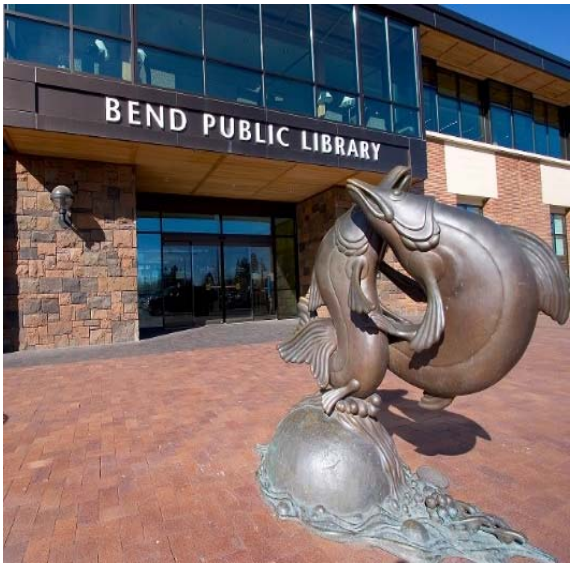
8-45 Public buildings and facilities shall be located so as to provide convenient public use and to provide maximum service for the greatest economy. Governmental offices should locate downtown when practicable. Other governmental facilities, reservoirs, landfills and correctional facilities should be located in areas with good public access to principal streets.

8-46 The County Public Works facility shall be planned and zoned with a Public Facilities designation. The uses allowed at the site from among those uses listed in a Public Facility zone shall be limited to public works and transportation facilities and yards and public service uses in existing facilities as such facilities may be expanded and accessory uses thereto. Commercial or manufacturing uses shall not be allowed at this site.

General Policies

8-47 The City may consider funding mechanisms and agreements to address on-site and off-site improvements, modernization of existing infrastructure to City's standards and specifications, and impacts to infrastructure inside the current City limits.

Chapter 9: Community Appearance



Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 18, 1998	Resolution #2247	Comprehensive Plan Update
2016	NS-2271	Format update, minor text changes to remove outdated text

BACKGROUND

Context

One of the hallmarks of the nation's best communities is the thought, planning and community involvement put into creating and delineating an attractively built environment that relates to and incorporates the area's natural environment. A basic objective of this Plan is to retain and, where required, re-establish a sense of community in Bend as growth occurs.

An important step in achieving this objective involves paying more attention to the overall appearance of the community and promoting better designs for all types of development. This step benefits the residents by creating a more visually attractive community, and can in some areas, such as along the main highways and transportation corridors, create the image of Bend for visitors and other Central Oregon residents.

Goals

The purpose of including a community appearance section and policies in the *Comprehensive Plan* is to provide direction to significantly improve the appearance of the entire community, and especially in those high visibility areas along the commercial corridors. The community appearance section of this Plan has therefore been prepared in conformance with the following general goals:

- To make a concerted effort to improve the appearance of the community, particularly in the commercial, industrial and multifamily areas;
- To initiate community action programs for the purposes of developing an awareness in the community's citizens of appearance-related issues, evaluating community appearance and developing specific improvement programs;
- To identify those characteristics that give the community its individual identity and to preserve and expand those characteristics as growth occurs; and
- To significantly improve the appearance along the state highways and other transportation corridors as one means of recapturing the individual and distinct identity of the Bend area.

Overview

Since the early 1970s Bend has had growth rates well in excess of the state average, and this trend is expected to continue into the first decade of the 21st century. The rapid growth has had an enormous impact on the physical character of the community, and has frequently resulted in a significant loss of the physical qualities that make Bend a unique and attractive place to live.

Simultaneous with this growth, a deliberate and continuous effort is necessary to see that the thousands of individual decisions made in the process of development collectively constitute tangible progress towards retaining and re-establishing the livability and appearance of our community.

The appearance of a community is a complex planning issue that involves both general concerns relating to categories of developments, and specific concerns about areas with high visibility and public use. These concerns are described under several categories in the remainder of this chapter.

Residential Areas

The residential areas of Bend are generally among the most attractive and pleasant sections in the city. The city and county are developing new subdivision and other land development standards to ensure that future residential developments continue the tradition of quality that currently exists. Care should be taken to make certain that older residential neighborhoods retain their charm and vitality and do not enter into decline.

One of the major challenges facing the community is to ensure that new housing developing at the edge of the community or as "in-fill" projects within neighborhoods is well planned and integrated within the larger context of the community. Future subdivisions will have a more thoughtful design that works with the land and with the surrounding neighborhoods. Natural topography, foliage and rock outcroppings should be preserved and used to create character within developments rather than eliminated, and grading should be kept to a minimum. Naturally occurring open space, parks and greenbelts provide visual relief for residents and can link a developing residential area to an established one.

Commercial Areas

Outside of downtown, the commercial sections of the community generally show a lack of order and relationship between buildings and their sites. Although commercial areas make up only about three percent of the urban land area, they are often along the most frequently traveled routes and have a strong influence on the "look" of Bend. The development of automobile oriented businesses along the highways, coupled with the increase in national food, gasoline, and retail chains, have done more to set the current image of Bend than any other single factor.

If the overall community appearance is to improve, it is important that the businesses within the commercial districts and local governments work together to improve the site design, building design, landscaping, signs and interconnections between properties. Several design considerations, examples of which are presented below, can improve the appearance of a development and keep it more competitive as Bend's commercial sector becomes more sophisticated:

- distributing parking around buildings so the building, not the parking lot, is the main focus of the site;
- using building designs that reflect the regional setting and native materials such as rock and wood in the exterior;
- designing large structures so they blend in better with a more human scale and charm of Bend's older commercial areas;
- incorporating natural features of the site into the landscape plans, and maintaining the landscape areas; and

- integrating signs into the overall design of a site rather than relying solely on large signs to attract attention.

Other structures that have an impact on the appearance of the commercial corridors are the electric power transmission and distribution lines. Most of the corridors have wooden poles, but larger and taller rust-colored metal poles for high voltage lines have been erected along Highway 97 South and the parts of the Parkway. In addition to the visual impact of the poles themselves, other utility lines for local power, telephones, and cable are also hung on these poles below the electric transmission lines thereby creating a ladder effect of lines and visual clutter. Eliminating or relocating the system of above ground utility poles and cables along the commercial corridors will improve the appearance of the commercial areas.

Industrial Areas

Bend is known for both the high quality of its work force and the goods that are produced in the area. With the exception of Shevlin Center, most industrial areas do not have a consistent development standard so there is much variation from site to site.

Although a few industrial operations do not lend themselves to significant building or site design changes, improvements to the appearance of most industrial operations would be beneficial to the community. First, since these are places where workers spend about half of their waking hours, improving the buildings and grounds would make them more pleasant places in which to work and take breaks. Second, given that the "clean" high-tech industries the city is trying to attract usually locate in pleasant, well landscaped campuses, the city and county need to develop new standards to ensure that new industrial areas meet the expectations of new businesses. Third, improving the appearance of industrial areas will create a more pleasing visual environment for community residents and visitors.

Deschutes River Corridor

The Deschutes River has long been an important element of the appearance and quality of life in Bend. The city and county have adopted regulations to protect this priceless resource and promote good design as the community grows. A Design Review overlay zone applies to all development within 100 feet of the river, and the Mixed-use Riverfront zone guides the redevelopment of land along the historic "Farewell Bend" portion of the river.

Transportation Corridors

Improving the appearance of the community also requires better, more thoughtful designs of the transportation corridors that serve the community. Streets in the community that are commonly recognized for their good design — and also function well for all transportation modes — are those that are designed with planter strips between the sidewalk and roadway and with a planted median strip. The Bend Parkway incorporates a planted median strip in its design, and city engineers have developed standards for including planted medians in the major arterial and collector streets.

The addition of landscaped medians along the major transportation corridors will help control traffic and prevent accidents, and will also help create a more attractive

community by softening the appearance of areas that are currently completely dominated by man-made surfaces. Traffic signs, street lighting and street signs should be integrated into one structure to help eliminate confusing and hazardous visual clutter at intersections. The city and county will continue to work with the state highway department to find alternatives to the old style traffic signals that hang from wires and dangle over state highways.

Site Planning and Design

Thoughtfully planning the location of structures, parking, service areas, walkways and amenities has a marked impact on the overall appearance of an area. Well-planned sites that are carefully integrated with neighboring areas have a powerful impact upon the function and attractiveness of their entire neighborhood.

To recapture some of the human-scale, small town ambiance that for many years was Bend, much of the recent pattern and trends in site planning will need to be reversed. The pattern of buildings surrounded by acres of parking and set back away from the public street should be modified so that additional buildings on development "pads" or buildings on new sites are placed closer to the front property line and have a main entrance oriented to the street and sidewalk.

Interrelated to building siting, pedestrian walkways from both sidewalks and parking lots should be provided for safety and to help reestablish the desirability of pedestrian travel. These walkways should be pleasant to use and incorporate landscaping, drop-off bays, bicycle facilities and other non-automobile related amenities. They should be designed in such a manner that they are logical extensions of walkways on adjoining sites, and complement established urban and bicycle trails.

Community amenities such as patio/seating areas, water features, artwork or sculpture, clock towers, pedestrian-oriented plazas with park benches or other features should be located adjacent to the primary entrances of buildings to help facilitate pedestrian meeting spaces and to provide places of
refuge from parking areas. These amenities should be scaled to the size of their development and should be required for larger developments. The inclusion of community amenities helps to create attractive public spaces and reinforces the importance of a human-scaled environment.

Site grading should be held to a minimum, and new developments should work within the parameters of existing topography in order to create a natural looking setting. Natural features and areas of special interest must be protected during construction and incorporated into the overall project design.

Landscaping

Attractive, well maintained landscaping can make an enormous difference in improving the appearance of an area. Landscaping should be integrated into the overall design of the site and structure and should reflect an understanding of how plant selection and placement can moderate and enhance a site. Large parking lots should be divided into areas, with each area surrounded by landscaped beds. Pedestrian walkways should be integrated into the landscaped areas, and trees should be required in parking areas to create a canopy over the majority of the paved areas.

Bend's short growing season and rocky ground make it difficult for trees and shrubs to acclimate or grow quickly. Because of that, the use of large trees and shrubs that are native to Central Oregon is encouraged. These plantings also tend to be disease resistant and low maintenance, which make them especially suitable for commercial and industrial developments. This type of landscaping, combined with existing natural features on a site, can produce an especially pleasant environment that fits into the natural setting.

Architecture

During the first 60 years of Bend's existence, the structures that were built here reflected the scale of the town and were largely composed of the natural resources available within the region. Although a variety of styles were used, the resulting mix never detracted from the small town feel. The area has grown threefold since the 1970s, and most of the featureless building designs that could be from "anywhere USA" have occurred during the last 30 years of the century. This trend was emphasized in the 1990s as large, national retail chains moved to Bend.

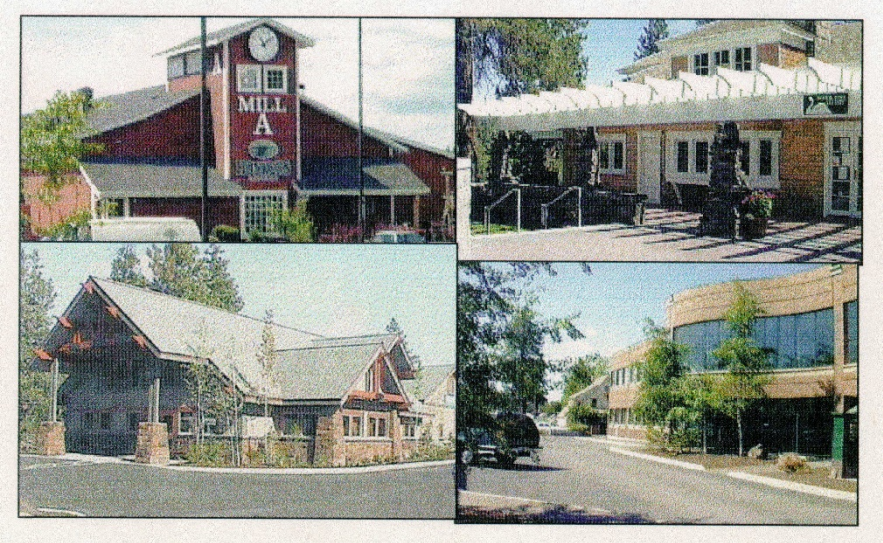


Figure 9-1 Examples of Commercial Buildings

Yet in spite of this, people remain attracted to Bend largely because of its original character, and have expressed a strong desire for new development in the town to be respectful of and, to some degree, express its original small town roots in the design of new structures. In order to accomplish this, structures need to be evaluated in terms of several components, including exterior design, wall articulation, building materials and roof design.

Bend does not have a history that allows it to claim a particular architectural style as indigenous; however all existing styles here were designed to what is termed "human scale." Structures were small to moderate in scale and incorporated architectural details and elements for interest. Although it is unrealistic to ever expect a complete return to the designs of the past, large structures should be designed so that their impact is more consistent with the scale of commercial buildings in Bend. Specifically:

- walls on large buildings should be broken into smaller scale elements and articulated with architectural features appropriate to the chosen design;
- landscaping should also be incorporated along large walls to further break up the impact of large structural planes;

- main entrances should be clearly defined and highly visible, again using architectural features to enhance their design;
- roofs should be designed to be integral with and appropriate to the overall architectural style of a structure. On large buildings, they should be designed to reduce the apparent exterior mass of the building. Variations within one architectural style are desirable, as are overhangs and other shadow-producing elements;
- the predominant building materials used on building exteriors should be materials that are characteristic of Central Oregon. These include brick, wood, native stone, textured concrete masonry units, and traditional glass products. Other materials should only be used as accents and be architecturally appropriate to a specific design. Building colors should be subtle, neutral or earth tone colors that reflect their natural setting; and
- exterior lighting should be shielded, directed down onto the site and confined to the site. Light poles, light fixtures, flag poles and similar structures should be limited in height.

Business and Directional Signs

If Bend is to retain the character and quality that originally made it one of the most attractive communities in Oregon, a major effort must be made to improve the appearance of business signs and public signs along its roadways.

Figure 9-2. Examples of Bend wall mounted and ground signs

Apart from the national chains, the type, size and location of business identification signs are seldom considered in the overall design of a site. The most attractive and typically the most effective signs are those that are designed to fit in with the building and site. These signs are memorable and effective because they carry through with the building theme and are not just another pole sign placed at the edge of the site just above or below the adjacent business sign.

The large number of businesses along the main transportation corridors, combined with the ever-increasing competition to catch a driver's attention, has created a forest of pole signs. Currently, principal business signs are accompanied by many lesser message signs relating to credit cards, prices, specials, hours of operation and so forth.

A second category of signs are directional and information signs. These signs, most of which are public signs in the street right-of-way, guide visitors and the motoring public to parks, the mountains, the college, and numerous other sites. Sign clutter so completely dominates the landscape of the major commercial arterials that the individual effectiveness of each sign is minimized, thereby defeating the purpose of signs.

Billboards and other "off-premise" signs are a third category of signs. These signs are most often used to advertise a product, business, or high-end housing development, or used as a directory sign, but also may provide community service information. Because they are targeted at the motoring public, they are most prominent along the state highways and main arterial streets in town. Billboards frequently compete with the on-site business signs and add to the sign clutter, which is contrary to the goal of improving the appearance of the commercial corridors. The city and county should review the local billboard regulations as part of their overall review and upgrading of the city and county sign codes.

As community concerns increase about the appearance of the transportation corridors and the neighborhoods, new, more thoughtful sign regulations must be developed. Sign regulations should be adopted that would not only control new signs, but establish a reasonable amortization period for the removal of existing non-complying signs.

Conclusion

If the appearance of the community is to be reestablished and improved, local citizens must be involved in programs that effectively evaluate community appearance and develop programs for its improvement. Additionally, the city and county must act upon the citizens' wishes by enacting regulations that will effectively direct future development and redevelopment in a manner that is consistent with the historic patterns and aesthetic values of the community. Continued efforts by local government and its citizens can preserve and enhance the natural beauty and livability of the area and, in time, create a city that is truly worthy of its spectacular setting.

Policies

9-1 The city, county, and special districts shall publicly advocate and coordinate activities relating to beautification and landscaping throughout the community. Unless otherwise agreed, each agency shall be responsible for improving the appearance of its own properties.

9-2 Community appearance shall continue to be a major concern and the subject of a major effort in the area. Major natural features, such as rock outcrops or stands of trees, should be preserved as a community asset as the area develops.

9-3 The city will use advisory committees, public workshops, and other measures, to identify those characteristics that give the community its individual identity and preserve and expand those characteristics as growth occurs.

9-4 Sign regulations should limit the size, location, and number of signs in residential, mixed-use, commercial, institutional and industrial areas and have amortization provisions to remove non-conforming signs within a reasonable period of time.

9-5 Special design and landscaping requirements shall be established along streets that include, but not be limited to Highway 20 West; Highway 97 and 3rd Street; Greenwood Avenue and Highway 20 East; Franklin Avenue; Riverside Avenue opposite Drake Park; Newport Avenue; Galveston Avenue from the river to 14th Street; Century Drive to the Deschutes National Forest boundary; Reed Market Road; NE 27th Street from Reed Market Road to Butler Market Road; and Mt. Washington Drive.

9-6 The city shall develop designs for arterial and collector streets that include landscaped planter strips and medians. Such designs shall include trees in the planter and median strips when practical and safe.

9-7 Special design consideration shall be given to development on hillside areas visible from developed areas, and from Highway 20 and the Parkway within the Bend area.

9-8 The city values design review for all development in the community with the exception of single-family houses, duplexes and tri-plexes.

9-9 The city shall seek opportunities to relocate existing overhead utility lines underground in all parts of the community, and especially along the commercial corridors.

9-10 The city shall develop an Urban Forestry Plan which shall include:

- annual tree planting plans for existing areas of the community;
- a city approved street tree list;
- steps to re-capture and maintain a “tree-city USA” designation; and
- the adoption of a formal Bend City Tree Ordinance which includes regulating the removal of trees on commercial and industrial land and during residential subdivision development.

Chapter 10: Natural Forces

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 1998	Resolution #2247	Comprehensive Plan Update
2016	NS-2271	Format update, minor text changes to remove outdated text

BACKGROUND

Context

The natural forces that have formed the physical environment of the Bend Urban Area continue to provide the area with many benefits: a moderate climate, clean air and water, plentiful stream flows and ground water, and natural energy resources from the sun, water, and geothermal energy. The Plan and related ordinances shall reflect the interest of the community to retain and enhance the quality and availability of these resources.

Goals

Natural forces such as the quality of the air, the energy of the sun, and the power smoldering deep under the lava flows are characteristic of Central Oregon. The local governments and community residents must work together to ensure these natural forces are not diminished. In support of this effort the Plan has the following goals:

- to maintain or improve the air quality for a healthful and desirable urban environment;
- to encourage energy conservation and the development of energy producing facilities that use renewable resources; and
- to work with state and federal agencies to develop new, more accurate mapping data on flood plains, faults, and other local natural hazards within the urban areas.

Overview

This final chapter in the Bend Comprehensive Plan provides discussion and data on natural forces — air quality, energy sources and conservation, and potential hazards such as flooding and land faults. Land use planning can have some influence on how future development impacts these natural forces. However, the effect of these forces on the growth and livability of the urban area is equally likely to be driven by factors that are beyond the physical and political control of the city or county.

Air Quality

Maintaining and improving the air quality in the area is an important part of keeping Bend a desirable place to live. Bend is fortunate that local governments, citizens' groups, and the Oregon Department of Environmental Quality are working together to ensure that Central Oregon's sky remains blue and clear, and our citizens remain healthy without concerns of air pollution. Policies at the end of this chapter provide direction for local actions to reduce air pollution.

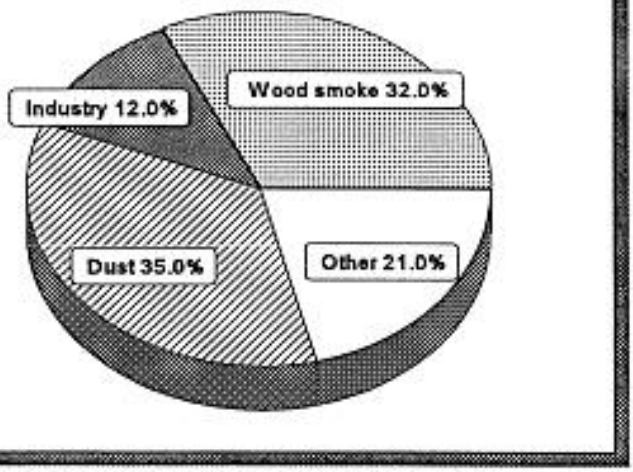
Both the federal and state government establish air quality standards for various pollutants, and may impose strict and costly control measures for communities that

exceed the standards. In Bend, the two air pollutants that are of concern and monitored on a regular basis are carbon monoxide (CO) and very small particulate matter (PM10). Automobile exhaust and other incomplete combustion are typical sources of CO production. Bend has exceeded the CO standards twice since 1987, and both occurrences were in 1987.

A variety of materials such as wind-blown dust, field and slash burning, wood stove smoke, and road cinders used for winter sanding can produce fine particles that fall into the PM10 air pollution category. Figure 10-1 shows PM10 emission sources measured during the winter of 1994-5. The PM10 air quality standard has been exceeded twice since 1987, most recently in the winter of 1996. A new particular matter standard is being established by the Federal Environmental Protection Agency. The impact of this new standard on Bend is unknown at this time.

Figure 10-1

PM-10 Emission Sources in Bend



Source: Oregon Department of Environmental Quality

Although the few occurrences of exceeding these two air quality standards have *not* been of sufficient frequency to have Bend designated as an air quality "non-attainment area," the forecast of significant population and economic growth for Bend and Deschutes County increases concerns about Bend's ability to maintain compliance with the air quality standards.

In 1989, a group of citizens sharing a concern for Bend's air quality started a true "grass-roots" effort to ensure that Bend's air would remain clean and healthy. This group, known as the Bend Clean Air Committee, consists of individuals that represent local, state, and federal government agencies, the scientific community, the medical community, industry, environmental groups, and concerned citizens. Since its beginning, the Bend Clean Air Committee has been very proactive and its efforts have included:

- conducting several surveys to gauge public awareness of air quality issues;
- sponsoring city ordinances restricting open burning and requiring replacement of non-certified wood stoves upon sale of homes;
- conducting educational campaigns;
- maintaining a wood stove burning advisory program during the winter using billboards, banners, public service announcements, and telephone hotlines; and

- giving an annual clean air award recognizing individuals and groups whose actions contribute to preserving and improving air quality.

The existence of the Bend Clean Air Committee was a factor in the federal government's $100,000 grant in 1994 to the Oregon Department of Environmental Quality, the City of Bend, and the Bend Clean Air Committee. The grant paid for monitoring carbon monoxide and particulate pollutant levels in Bend and for developing strategies to maintain compliance with the national air quality standards. Additional information on meteorological conditions in Bend and air quality standards is in two Comprehensive Plan resource documents titled Goal 6: Air, Water, and Land Resources Quality and the Bend Air Quality Project Phase II Work Plan.

Noise Related Issues

Noise emissions come from many different sources. Many noises are inherent within different areas of a community. However, excessive noise can be detrimental to the health, safety and welfare of Bend's citizens. Excessive noise can also cause deterioration of the quality of life within a given area of a community.

The State sets forth rules and policy for regulating noise. These rules quantify acceptable types and thresholds of noise. However, the State no longer enforces these rules and relies on the local governments for enforcement. Section 5.385 of the Bend Code; was adopted by the City of Bend pursuant to the provisions of State statute ORS 467.100. This code specifically identifies and defines different noises that are considered to be loud and raucous. These noises are prohibited within the City. For other noise emissions not identified by the Bend Code, the City coordinates with the local DEQ staff and the ORS as a resource. The City Police Services Department assists in the actual enforcement of noise complaints.

Energy Conservation

The efficient use of energy saves the consumer money, and reduces the need for developing new (and often more expensive) sources of energy. This element addresses energy conservation through a variety of land use planning and construction practices.

While no known sites that have a potential for oil, gas or geothermal resource development exist in the area, there are two hydroelectric sites within Bend. As early as 1910, a small hydroelectric dam was constructed on the Deschutes near downtown to generate power for the growing community. This facility is still in use today. In 1985 the Central Oregon Irrigation District built a hydroelectric facility using water from its irrigation flume along the river to power a small generating plant that is tucked into the hillside opposite Mt. Bachelor Village. In addition, there is still potential for heating and power from locally generated wood wastes, such as slash and mill trimmings. As noted earlier in the Air Quality section, Bend has an active program to upgrade wood stoves for more efficient use of the resource and to maintain air quality in the area.

The large number of sunny days makes this area particularly suitable for solar power, both passive and active systems. During the summer, 300-350 British Thermal Units

(BTUs) of sunlight energy are delivered to each square foot of land in the area, but this level declines to 175-200 BTUs during the winter. Bend was one of the first cities in the state to adopt "solar access" ordinances to provide good solar access during the winter solar heating hours so that homeowners can incorporate passive or active solar systems into their homes.

The Bend area is fortunate to have some potential energy sources. However, the expanding population will continue to test the ability of energy suppliers to meet increasing demand. All available resources will have to be evaluated, used, and made compatible with the economic, social, and environmental goals of the local and regional population. No single answer exists, but a reasonable combination will have to be found. In the meantime, local planning efforts must be aimed at promoting greater efficiency in the use of existing energy resources, and in protecting and developing those resources we will need in the future.

Natural Hazards

Official flood hazard maps for the Bend area and Deschutes County are published by the Federal Emergency Management Agency (FEMA). The flood hazard area within Bend is within or adjacent to the banks of the Deschutes River. During the winter of 1996-97 the high water level in some parts of the urban area exceeded the 100-year flood boundary as mapped by FEMA. The city has requested that FEMA re-evaluate the 100-year flood plain within the urban area and adjust their maps as necessary.

The Oregon Department of Geology and Mineral Industries has mapped some faults within the urban area. More information is needed on the type and extent of these faults.

Steep Slopes

Development on hillsides demands special considerations for site preparation, access, and utility placement. In planning and engineering, slopes are typically described as a percentage figure, which is a measurement of the change in elevation divided by distance. For example, if a lot has a 15 foot change in elevation over a 100-foot distance, the slope would be 15 percent (15/100). As a comparison, the maximum slope or grade on interstate freeways is 6 percent.

Several factors such as rainfall levels, vegetation cover, soil depth and base material affect the stability of slopes. However, it is generally true that as slopes increase in steepness, there is a corresponding increase in the impacts on the natural conditions on the slopes and in the difficulty of construction. A typical or general range describing slopes and the corresponding level of concern are:

Percent Slope	Level of Impact on Environment/Design and Construction Concern
0 - 10%	Slight
11% - 25%	Moderate
26% - 35%	Severe
35% and above	Extreme

Although the Bend urban area is generally on a plateau at the base of the Cascade Mountains, there are a few areas that have moderate to steep slopes. Awbrey Butte, Pilot Butte, Overturf Butte, areas along fault scarps, and some areas along the river canyon in the south and north part of the urban area have slopes of 15 percent and more.

There are several possible impacts associated with construction and road building on slopes:

- **Disruption of natural landform and drainage patterns**. Even when a road follows the contour around a hill there is a need to cut into the hill on the high side and fill on the down slope side to create a level surface. As the slope percent increases, more cutting of the hill on the high side and more filling on the low side is needed to create a level travel way or building site.

  Most high desert soils are loose and powdery, and only a few inches thick. A major side effect of the cut and fill activity needed for road and building construction is the increased possibility of soil erosion. The impacts here are twofold. First, when native grasses, shrubs, trees and other vegetation that hold the soils on steep slopes are removed, there is greater exposure of soil and rock that is subject to wind and water erosion. In addition to erosion, slopes without vegetation are more likely to suffer slumping and sliding. Second, the amount of cut and fill areas, and the modifications to drainage patterns created by streets, driveways, sidewalks, and utility routes, can all create erosion problems and/or the degradation of the exposed rock through winter freeze and thaw cycles.

- **Public safety**. If a road, sidewalk, or other transportation route goes up the hill across the contours, then the steepness of the route can make it difficult for emergency vehicle access any time, and especially hazardous for any type of vehicle or pedestrian movement during winter conditions. Also, the increased impact on drainage and soil movement concerns with steeper slopes can create slumps, breaks or other problems with streets, sidewalks, trails, water and sewer lines, and other utilities.

- **Visual impact**. Because the buttes and other sites with steep slopes can be seen from many parts of the urban area, there is interest in designing developments that minimize the amount disruption to the natural conditions. The Awbrey Butte Master Plan, which covers several hundred acres of steep

slopes on the most prominent butte in town, includes street and site development standards to reduce the visual impact of development. There are several construction and subdivision design measures that can be applied to steep slopes to reduce the potential adverse impacts from development. Such measures include, but are not limited to:

- larger lots to reduce the number of building sites and corresponding disruption of the natural contour and vegetation;
- using narrower right-of-way, pavement widths, and "hammer-head" street ends rather than cul-de-sac bulbs to reduce road cut and fills;
- taking access off alleys on the uphill side of a street to reduce driveway cuts into the hillside;
- placing sidewalks at the curb, or having only one sidewalk along the street to reduce the cross-slope cut and fills;
- adjusting the building setback from property lines to minimize building site cuts and fills;
- regulating the amount of vegetation cleared off a hillside lot;
- requiring temporary use of hay bales, diversion dams, or other physical changes to control storm runoff during road and site construction; and
- setting maximum grade or slopes on public streets and pedestrian corridors.

Additional information, measures, and policies on street construction on steep slopes are included in Chapter 7, *Transportation Systems*.

Wildfire

Wildfire *risk* (the likelihood of a fire occurring based on historical fire occurrence and ignition sources) is identified by the Greater Bend Community Wildfire Protection Plan (2012), as high to extreme in the Bend area. Vegetation management, such as thinning and brush removal, may reduce the *hazard* (resistance to control, once a fire starts, based on weather, topography, and vegetation type) in some areas, but further mitigation measures are needed to protect new and existing development in the Wildland Urban Interface (WUI). Additional mitigation measures fall into two categories: development patterns and construction techniques.

Construction techniques are typically enforced through the use of building codes. For example, the building codes found in the 2012 International Wildland-Urban Interface Code (IWUIC) would provide a logical extension of the International Fire Code presently used by the City of Bend to protect commercial buildings. The IWUIC is directed toward the protection of residential development in the wildland-urban interface. The City will involve key stakeholders to determine the appropriate building code language necessary to reduce wildfire hazard to residential structures located in the WUI.

The IWUIC may require some modification to meet Bend's development pattern needs in the UGB expansion areas. The IWUIC depends on widely spaced buildings to provide defensible space against wildfire; however, this may not be an appropriate land use pattern in areas that are expected to expand in the future. Therefore, in expansion areas where greater land use efficiency (i.e., smaller lots and more closely spaced buildings) is appropriate, the City may consider allowing buffers of aggregated

defensible space commensurate with wildfire hazard instead of widely spaced individual buildings.

Policies

Air Quality

10-1 The city will continue to work towards improving circulation and traffic flow through the city in order to reduce carbon monoxide levels.

10-2 The city will regulate open burning, wood stove installations, and consider other measures to improve air quality within the urban area.

10-3 The city will cooperate with DEQ in continuing to monitor industrial emissions.

10-4 The city shall review land-use development in the Bend Urban Area as to its potential air quality impact on Class I areas within a 20-mile radius.

10-5 The city shall develop a plan and program to mitigate any air quality problems, before the city gets out of compliance with air quality standards.

10-6 The city shall support local citizen organizations in their efforts to improve the air quality in Bend.

10-7 The city and county shall develop a plan to mitigate the adverse air impacts of sanding roadways during winter weather.

10-8 The City, in cooperation with State and local agencies and volunteer special interest groups, shall consider a long range strategy for improving air quality to address issues such as the reduction of air toxins, haze, and air particulate. At a minimum, the strategy shall include:

- Provide prior notice to DEQ of pending land use development that might be a new source of air pollution.
- Require that all new development comply with any applicable state or federal air quality standards as part of the land use application process.

Noise Control

10-9 The city shall coordinate with the DEQ as a resource regarding noise related issues and will require any applicable state or federal noise standards to be met as part of individual land use applications

Energy Conservation

10-10 The use of alternative energy sources should be encouraged.

10-11 Any energy producing projects shall be consistent with the community's wildlife, recreation, open space, and scenic resource values.

Natural Hazards

10-12 The city shall continue to apply their Flood Plain zoning regulations along the Deschutes River and Tumalo Creek based on the best available data.

10-13 The city shall encourage the Oregon Department of Geology and Mineral Industries to complete an assessment of faults in the Bend area.

10-14 The city shall review the construction plans for buildings that are proposed to be built across or along identified fault lines.

Steep Slopes

10-15 The city shall require development on slopes in excess of 10 percent to employ measures to minimize the hillside cuts and fills for streets and driveways.

10-16 The location and design of streets, structures and other development features on slopes in excess of 10 percent shall give full consideration to the natural contours, drainage patterns, and vegetative features of the site to protect against temporary and long-term erosion.

10-17 In areas where the natural slope exceeds 20 percent, the city may reduce the minimum residential density (allow larger lots) or alternatively, may require cluster development through the PUD process to preserve the natural topography and vegetation, and improve fire protection.

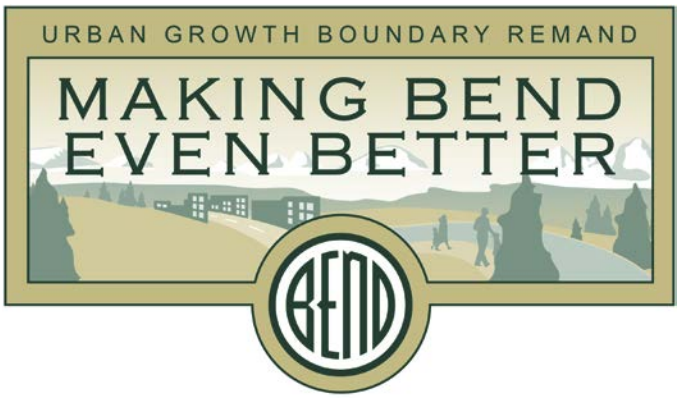
Wildfire

10-18 The City will adopt strategies to reduce wildfire hazard to lands inside the City and included in the Urban Growth Boundary. These strategies may, among others, include the application of the International Wildland-Urban Interface Code with modifications to allow buffers of aggregated defensible space or similar tools, as appropriate, to the land included in the UGB and annexed to the City of Bend.

Section 7 of Ordinance 2271

Exhibit G

New Buildable Lands Inventory, Appendix J of the Bend Comprehensive Plan



Bend Buildable Lands Inventory

Bend's Land Base and Growth to 2028

July 18, 2016

ACKNOWLEDGEMENTS

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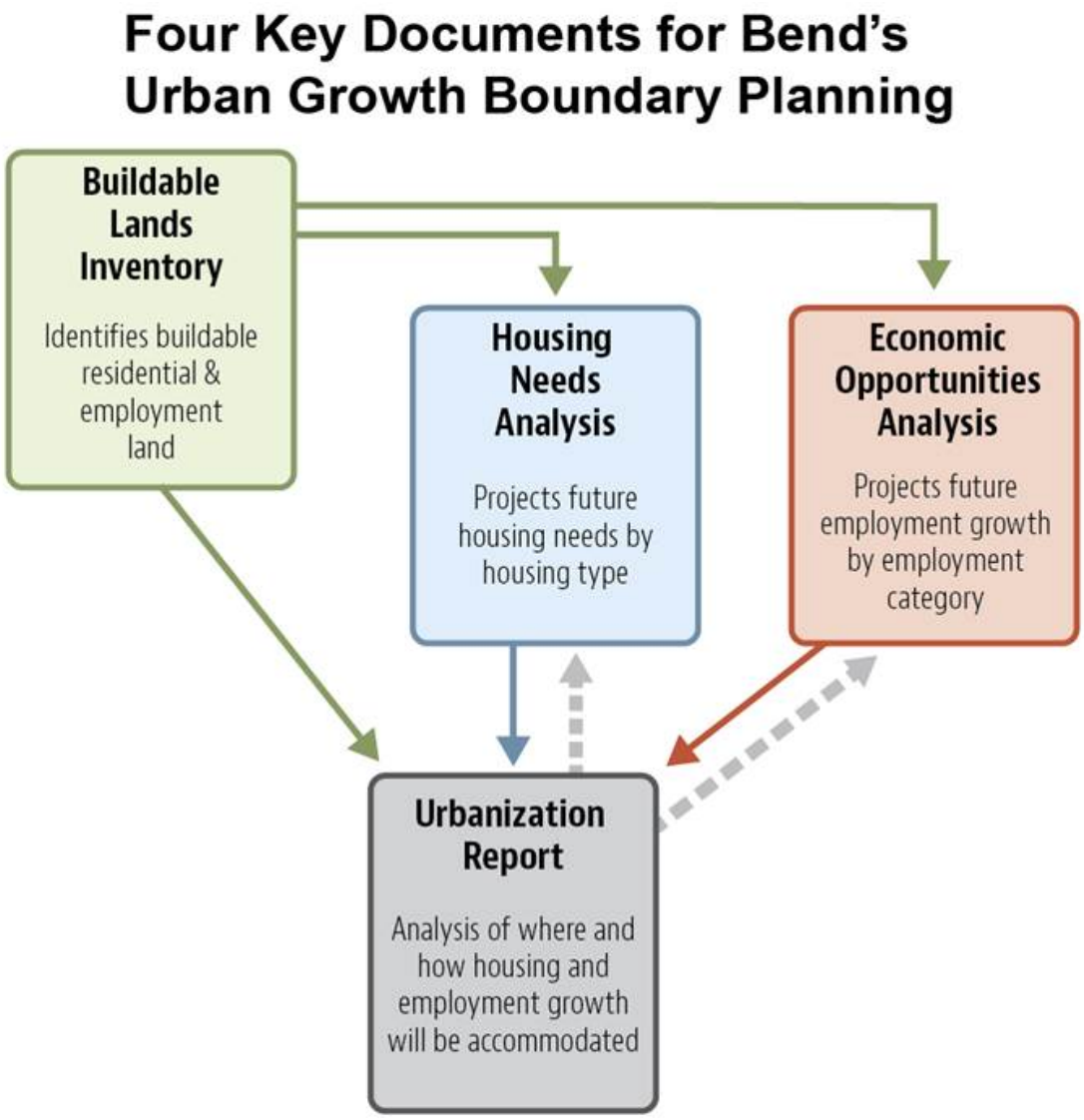
TABLE OF CONTENTS

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

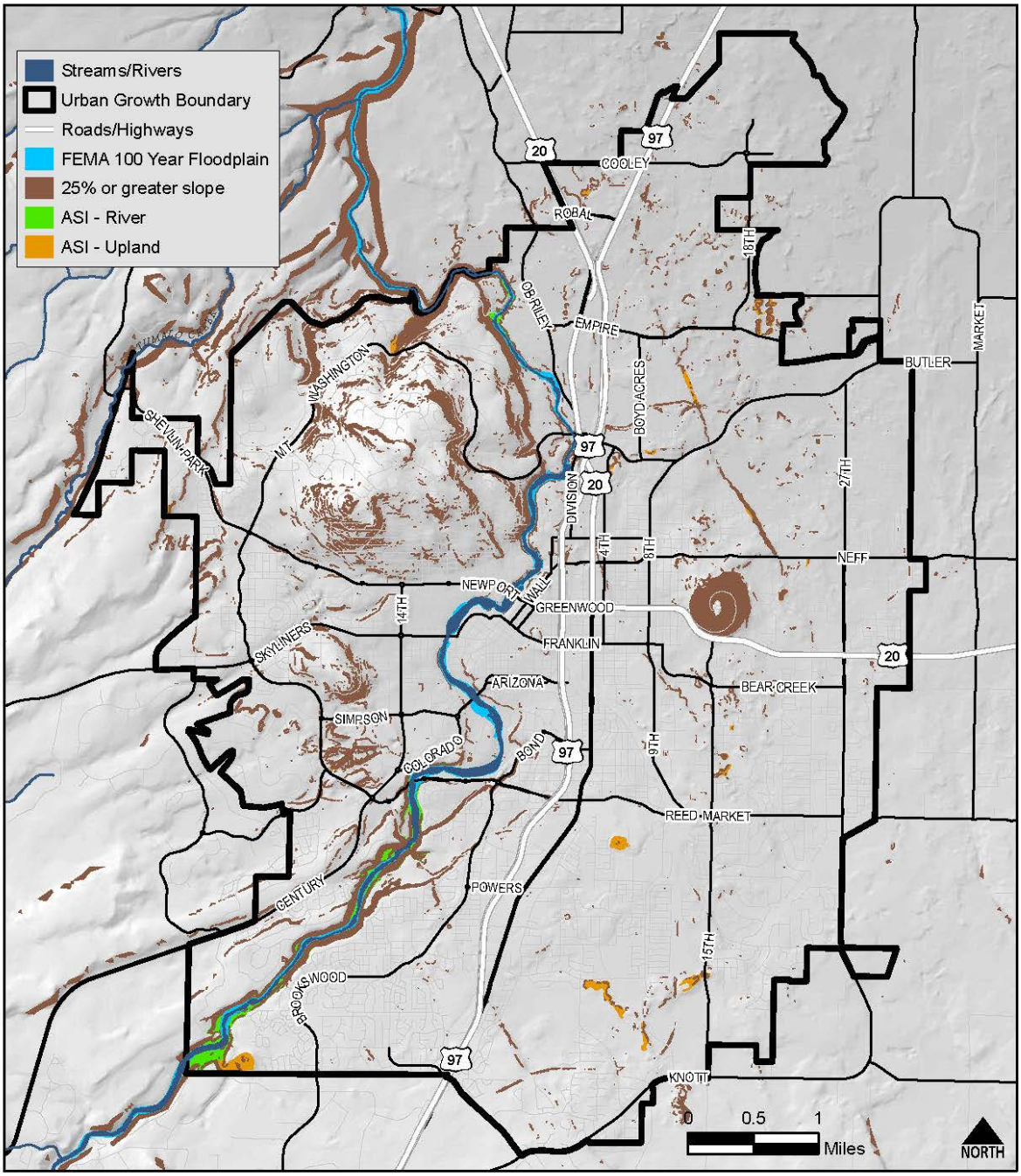
Land that is physically constrained is not assumed to be "buildable".[1] Land was identified as constrained if it: has 25% or greater slopes; is within the Federal Emergency Management Agency (FEMA) 100-year floodplain; is within a river or upland Area of Special Interest (ASI);[2] or is within the Waterway Overlay Zone (WOZ) and within 100 feet of the Deschutes River, where building setbacks may apply[3]. The total area affected by one or more of the constraints was calculated for each tax lot in Bend. There are roughly 1,420 acres of physically constrained land within the UGB, of which roughly 1,170 are within tax lots.

[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.

[2] Bend's ASI's are not acknowledged Goal 5 resources. However, the city's regulations largely preclude development within these areas. Density transfers are allowed; however, there is no history of developers utilizing this option.

[3] Bend's WOZ combines four different sub-areas: the Deschutes River Corridor Design Review overlay; the Floodplain Combining Zone; Goal 5 Riparian Corridor protection; and River Corridor ASIs. Each sub-area has its own set of standards and setbacks for protection. Setbacks vary from 30 to 100 feet depending on the stretch of river and the sub-zone; some are measured from ordinary high water, while others are measured from the canyon rim. Because the setbacks are not mapped in detail, the generalized assumption was made that development restrictions are likely within 100 feet of the mapped edge of the river throughout its length. Detailed information about the WOZ is included in Appendix B.

Figure EX-1. Physical Constraints



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.[4]

* See Appendix A – Glossary.

[4] 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). A subset of developed employment land was identified as having a likelihood of redevelopment.

Figure EX-2 depicts the locations of residential and employment lands within the City.[5] Table EX-2 and Table EX-3 show the BLI designation of residential and employment land within the City of Bend.

[5] Some properties have a zoning designation that is different from their comprehensive plan designation. Generally, in these cases, if either the plan designation or the zone is residential, the property is categorized as residential land. However, there are exceptions, such as school and park land, land in the Medical District Overlay Zone, and land planned or zoned for surface mining. Additionally, since 2014 some parcels have been transferred to public ownership and are not reflected in the BLI dataset – most notably the park site on SE 15th. These changes have been accounted for in subsequent modeling.

Figure EX-2. Bend Residential and Employment Land

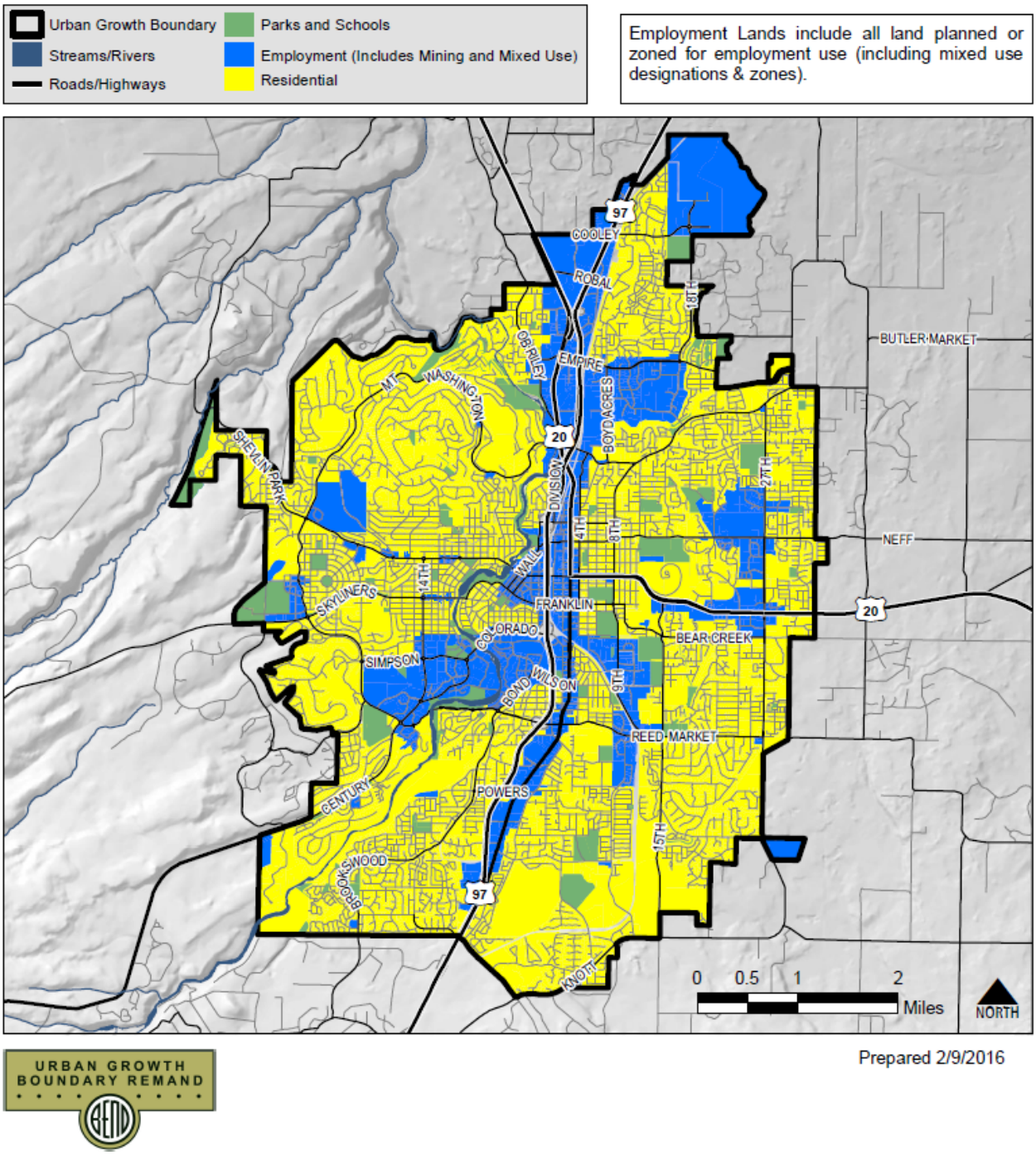


Table EX-2. BLI Designation of Residential Tax Lots (Excludes Parks & Schools)

BLI Designation of Residential Tax Lots	Number of Tax Lots	Total Acres
Developed	25,849	7,737
Lots Large Enough to Divide Under Current Zoning *("Developed with Infill Potential")*	4,573	2,554
Lots Large Enough for Additional Units under Current Zoning *("Partially Vacant")*	827	93
Publicly Owned (excludes schools and parks)[6]	179	544
Vacant	2,854	1,718
TOTAL	**34,282**	**12,646**

Table EX-3. BLI Designation of Employment Tax Lots (Excludes Parks & Schools)

Employment BLI Status	Number of Tax Lots	Total Acres
Developed	3,451	2,762
Vacant	247	1,056
TOTAL	**3,698**	**3,818**

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.

[6] Lands identified as being in public ownership, except for land owned by the Bend-La Pine School District and the Bend Park and Recreation District (whether or not currently developed with schools/parks).

Table EX-4. Vacant and Developed Acres by Plan Designation[7]

Plan Designation	Vacant Acres	Developed Acres
CB	0	38
CC	12	66
CG	117	613
CL	84	282
IG	8	178
IL	638	596
MDOZ*	73	177
ME	92	200
MR	33	127
PF	218	191
PO	6	0
PO/RM/RS	0	6
RH	24	111
RL	168	1,389
RM	292	847
RS	1,905	6,410
SM	20	0
URA	0	52
Grand Total	**3,690**	**11,284**

**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 as employment land separately within the BLI where possible. This approach was approved by LCDC in the 2009 Remand Order through the City's EOA.*

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.

[7] Excludes public and private right of way, and land under Park District or School District ownership.

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[8], and other relevant law[9]. 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[10]. 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 Table 1.

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

[9] See "Framework for a Buildable Lands Inventory on page 3.

[10] 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[11]	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

[11] 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."[12]

State statute identifies the following categories of buildable lands:[13]

> *(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:"[14]

> *(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:[15]

> *(2) "Buildable Land" means residentially designated land within the urban growth boundary, including both vacant and developed land likely to be redeveloped, that is suitable, available and necessary for residential uses. Publicly owned land is generally not considered available for residential uses. Land is generally considered "suitable and available" unless it:*
>
> > *(a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;*
> >
> > *(b) Is subject to natural resource protection measures determined under Statewide Planning Goals 5, 6, 15, 16, 17 or 18;*

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

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

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

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

(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:[16]

(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). In addition to updating the 2008 data to reflect changes through 2014, 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.[17] Where definitions were not provided in rule or statute, the Department provided one consistent with the terms outlined in ORS 197.296(4)(a).

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

[17] 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.

- **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."[18] Note the planning period in this UGB 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.[19]

This update of the BLI complies with these requirements. The City has included vacant lots and parcels under 0.5 acres and excluded only the portion of a lot that has physical constraints on it, leaving the remainder. The City has also conducted research on CC&Rs in effect on subdivisions within the UGB to determine whether and to what extent they restrict further development and infill. Restrictive CC&Rs have been addressed specifically in the BLI and

[18] OAR 660-008

[19] LCDC Remand Order, page 26.

Envision Tomorrow model.[20] A description of how CC&Rs have been addressed can be found in Step 2 – Defining Residential Land, and more detail is included in Appendix C.

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 assessor's office).

Physical Constraints. Detailed slope data from the City of Bend was used to identify areas with 25% or greater slopes. FEMA mapping was used to identify the 100-year floodplain. City data was used to identify River and Upland Areas of Special Interest (ASI's), as well as the Waterway Overlay Zone (WOZ).

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.

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.

[20] 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.

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 the current plan designation based on lot area and maximum density for the applicable 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

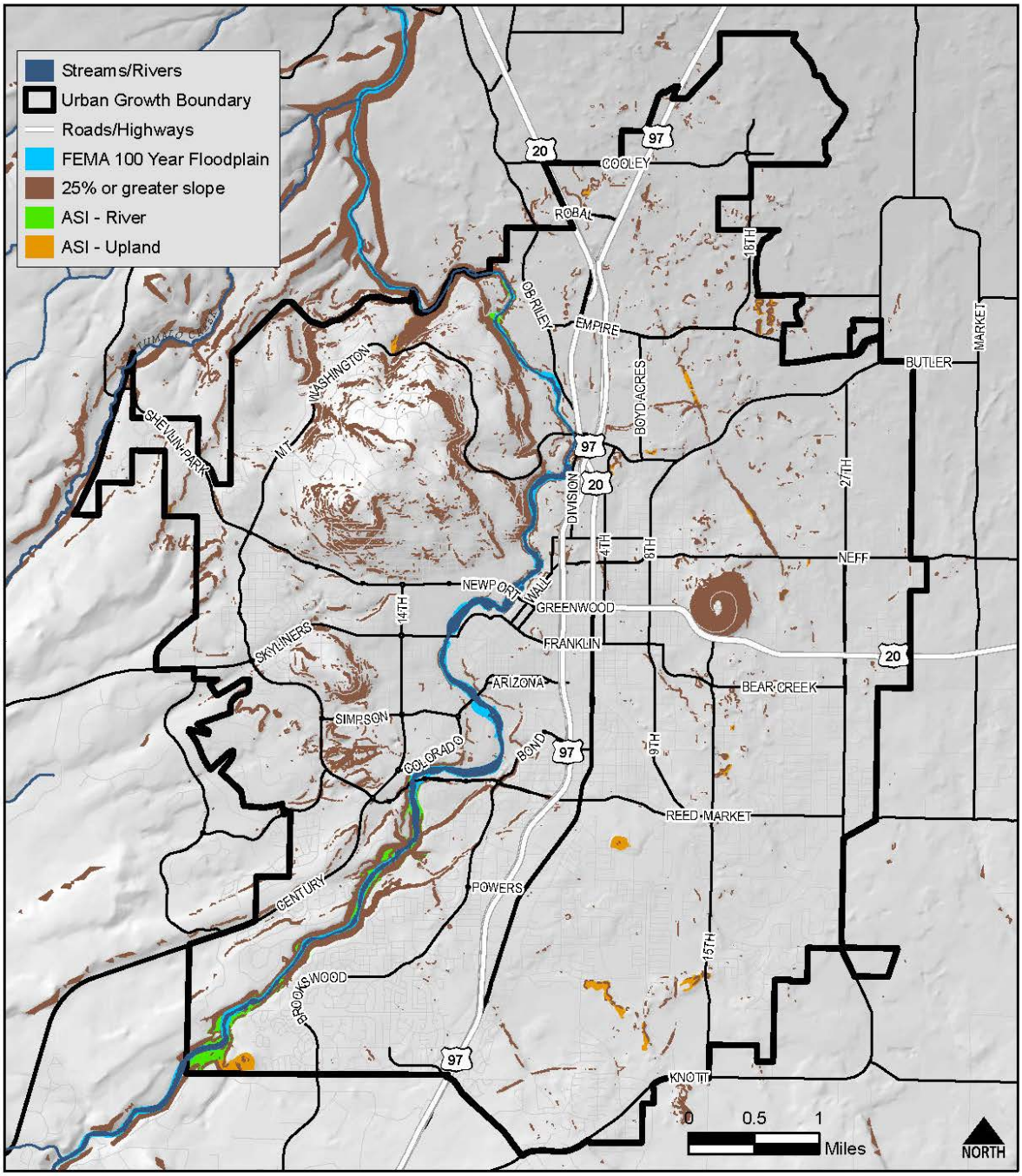
Step 1 – Calculate Physical Constraints

Land that is physically constrained per state requirements and definitions is assumed to be not "buildable" for the purposes of this inventory. Land was identified as constrained if it: has 25% or greater slopes; is within the Federal Emergency Management Agency (FEMA) 100-year floodplain; is within a river or upland Area of Special Interest (ASI);[21] or is within the Waterway Overlay Zone (WOZ) and within 100 feet of the Deschutes River, where building setbacks may apply[22]. The total area affected by one or more of the constraints was calculated for each tax lot in Bend. There are roughly 1,420 acres of physically constrained land within the UGB, of which roughly 1,170 are within tax lots.

[21] Bend's ASI's are not acknowledged Goal 5 resources. However, the city's regulations largely preclude development within these areas. Density transfers are allowed; however, there is no history of developers utilizing this option.

[22] Bend's WOZ combines four different sub-areas: the Deschutes River Corridor Design Review overlay; the Floodplain Combining Zone; Goal 5 Riparian Corridor protection; and River Corridor ASIs. Each sub-area has its own set of standards and setbacks for protection. Setbacks vary from 30 to 100 feet depending on the stretch of river and the sub-zone; some are measured from ordinary high water, while others are measured from the canyon rim. Because the setbacks are not mapped in detail, the generalized assumption was made that development restrictions are likely within 100 feet of the mapped edge of the river throughout its length. Detailed information about the WOZ is included in Appendix B.

Figure 1.**Physical Constraints**



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. 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."

- **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. 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. The 2008 EOA considered these as predominantely employment land based on ownership patterns and building permit activity. This was not a subject in the Remand Order.
- **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. There are roughly 51 acres on two tax lots designated ME but zoned UAR.
- One tax lot **planned for surface mining (SM) and zoned RS** covering roughly 30 acres northeast of the intersection of Mount Washington Drive and Chandler Road was identified as Employment land. This site is now owned by Oregon State University and planned as an expansion of their proposed Cascades campus (see additional discussion of this site on page 18.)
- One tax lot **zoned for surface mining (SM) with an RS plan designation** located along Shevlin Park Road at Skyline Ranch Road was treated as residential land. This taxlot is part of an existing mining operation that extends outside of the UGB, but landowners have proposed a residential use.

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. 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 residential 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

Generally: Land planned or zoned for residential use that has $0 in improvement value.

Exceptions:

- 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. 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.
- Publicly owned land is also excluded. 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.

Developed

Generally: Land planned or zoned for residential use that is currently developed with the maximum number of dwelling units allowed in the plan designation/zone. The zone that implements the current general plan designation for each parcel was used to identify maximum development potential, except for parcels with a non-residential plan designation and a residential zone. This is because the code does not allow development that is inconsistent with the plan designation, and each plan designation is implemented by a single zone.

Exceptions:

- 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 plan designation/zoning. 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 Appendix C and the Urbanization Report for additional detail.

Lots Large Enough for an Additional Unit under Current Zoning ("Partially Vacant")

Land planned or zoned for residential use that has an improvement value greater than $0, but contains fewer dwelling units than permitted in the plan designation. Based solely on lot size (not considering limiting factors such as setback and frontage requirements, lot coverage, or location of existing structures), additional units could be built on the site, but the lot is not large enough to further divide.

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 under the existing plan designation 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.)

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 plan designation/zone, 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.**Error! Bookmark not defined.**

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."[23] Redevelopment potential is addressed in the Urbanization Report.

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

Figure 2.**BLI Status of Residential Lands Map (2014)**

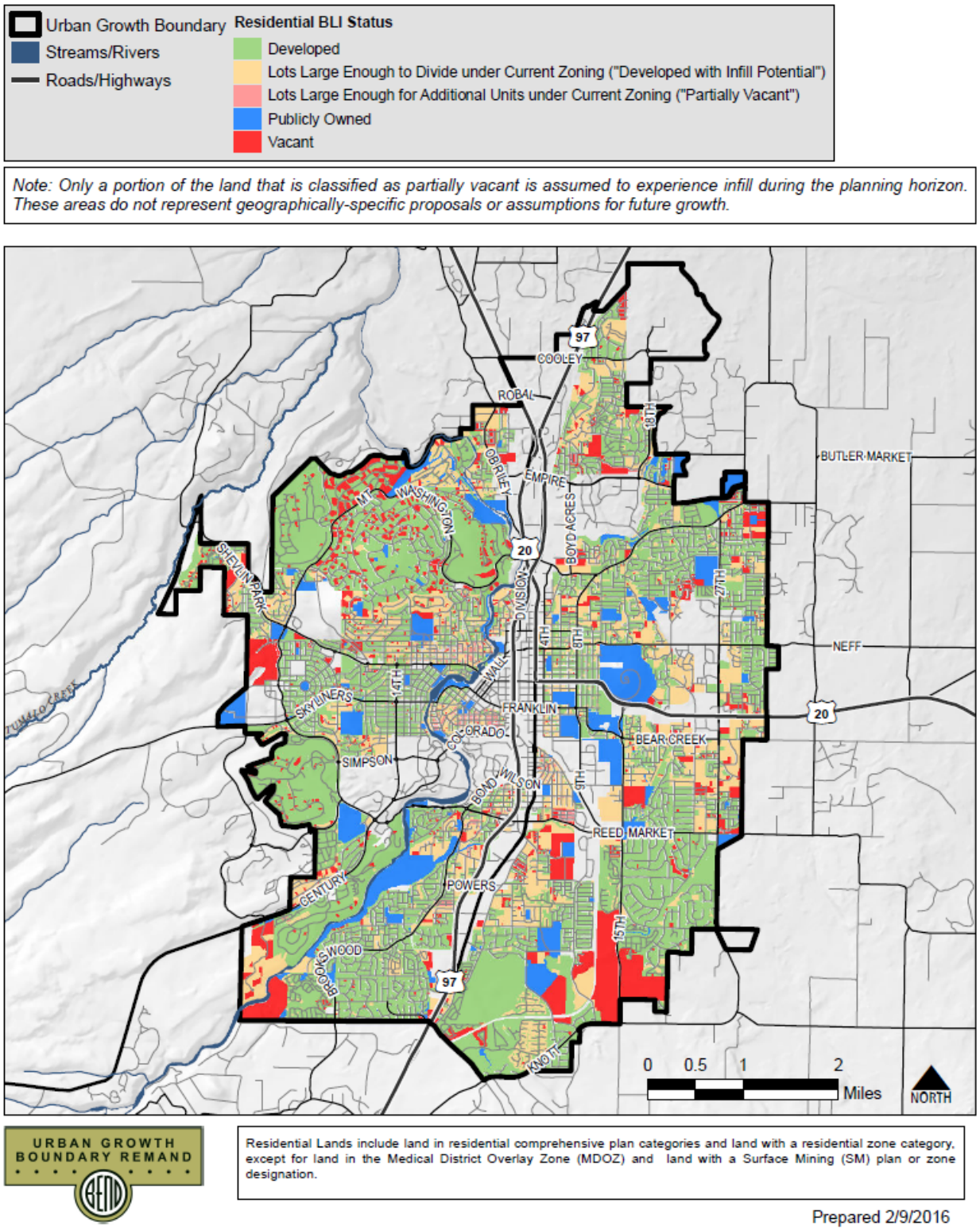
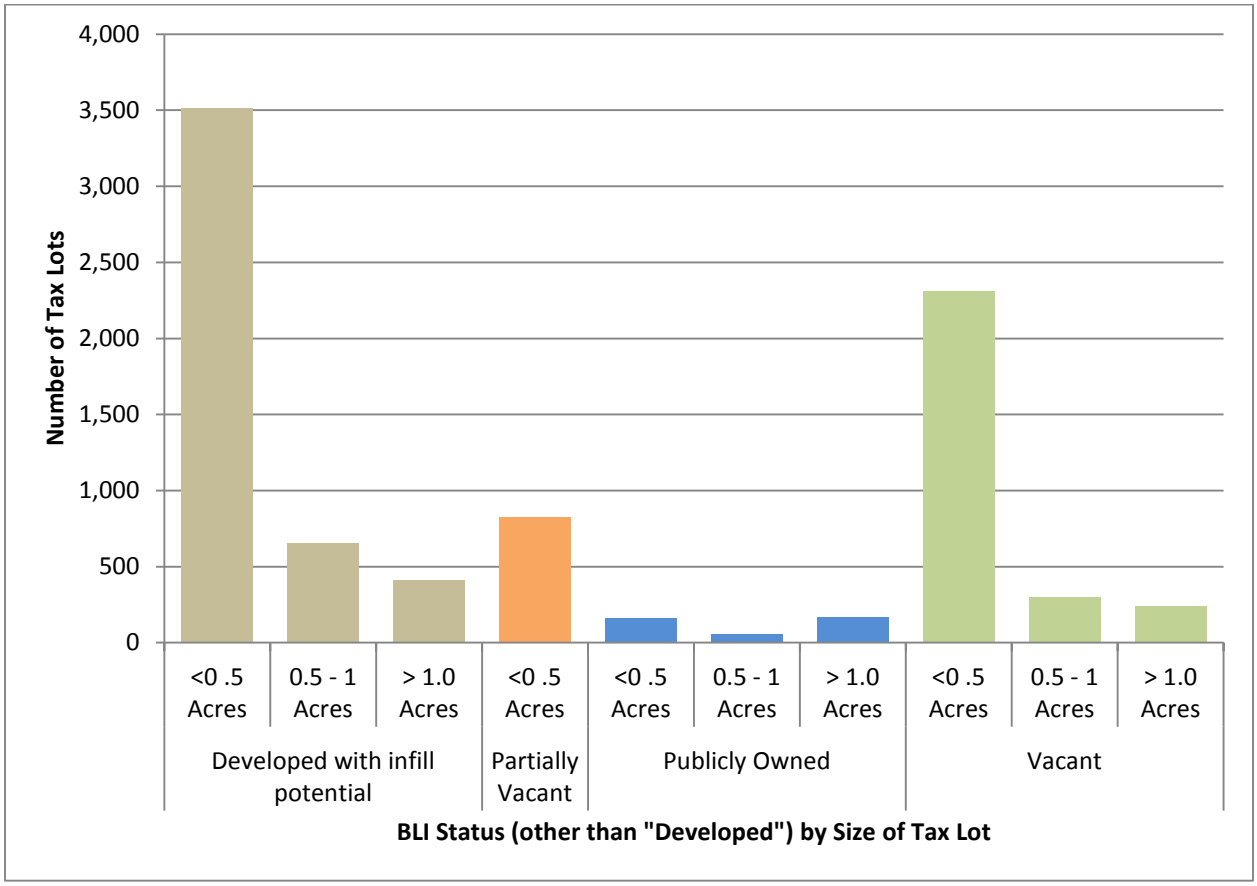


Table 1. BLI Designation of Residential Tax Lots

BLI Designation of Residential Tax Lots	Number of Tax Lots	Total Acres
Developed	25,849	7,737
Lots Large Enough to Divide Under Current Zoning *("Developed with Infill Potential")*	4,573	2,554
Lots Large Enough for Additional Units under Current Zoning *("Partially Vacant")*	827	93
Publicly Owned (excludes schools and parks)[24]	179	544
Vacant	2,854	1,718
TOTAL	**34,282**	**12,646**

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



[24] Lands identified as being in public ownership, except for land owned by the Bend-La Pine School District and the Bend Park and Recreation District (whether or not currently developed with schools/parks).

Table 2. BLI Status for Residential Land by Comprehensive Plan Category[25]

Comprehensive Plan Designation	Number of Taxlots	Total Acres
RH	**526**	**136.9**
Developed	200	45.6
Developed with infill potential	165	46.5
Partially Vacant	63	6.0
Vacant	88	19.5
Publicly Owned	10	19.3
RL	**3,019**	**1,613.0**
Developed	2,836	1367.1
Developed with infill potential	98	184.9
Partially Vacant	1	0.5
Vacant	69	53.7
Publicly Owned	15	6.9
RM	**4,891**	**1,225.7**
Developed	1,977	336.8
Developed with infill potential	1,615	198.6
Partially Vacant	750	85.1
Vacant	517	182.5
Publicly Owned	32	22.5
RS	**25,615**	**9,181.4**
Developed	20,705	5,912.8
Developed with infill potential	2,963	1,723.2
Partially Vacant	13	1.6
Vacant	2,111	1,439.3
Publicly Owned	93	104.5
URA	**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

[25] Excludes land owned by the Bend-La Pine School District and the Bend Park and Recreation District, and land within the MDOZ.

Comprehensive Plan Designation	Number of Taxlots	Total Acres
Commercial / Industrial Designation[26]	**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[27]	67	22.6
Publicly Owned[28]	27	357.1
Grand Total	**34,282**	**12,645.9**

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.[29]

- 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).

[26] 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.

[27] 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, and one large parcel (roughly 14 acres in southeast Bend) under common ownership with adjacent vacant RS-designated land.

[28] This category includes the Central Oregon Irrigation District (COID) property that has a PF designation and residential zoning. However, the site is encumbered by a view easement and is not considered developable through the year 2035. See Appendix D for details.

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

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

Table 3. Tax Lots and Acres by Employment BLI Status (Excludes School and Park Land)

Employment BLI Status	Number of Tax Lots	Total Acres
Developed	3,451	2,762
Vacant	247	1,056
Grand Total	**3,698**	**3,818**

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

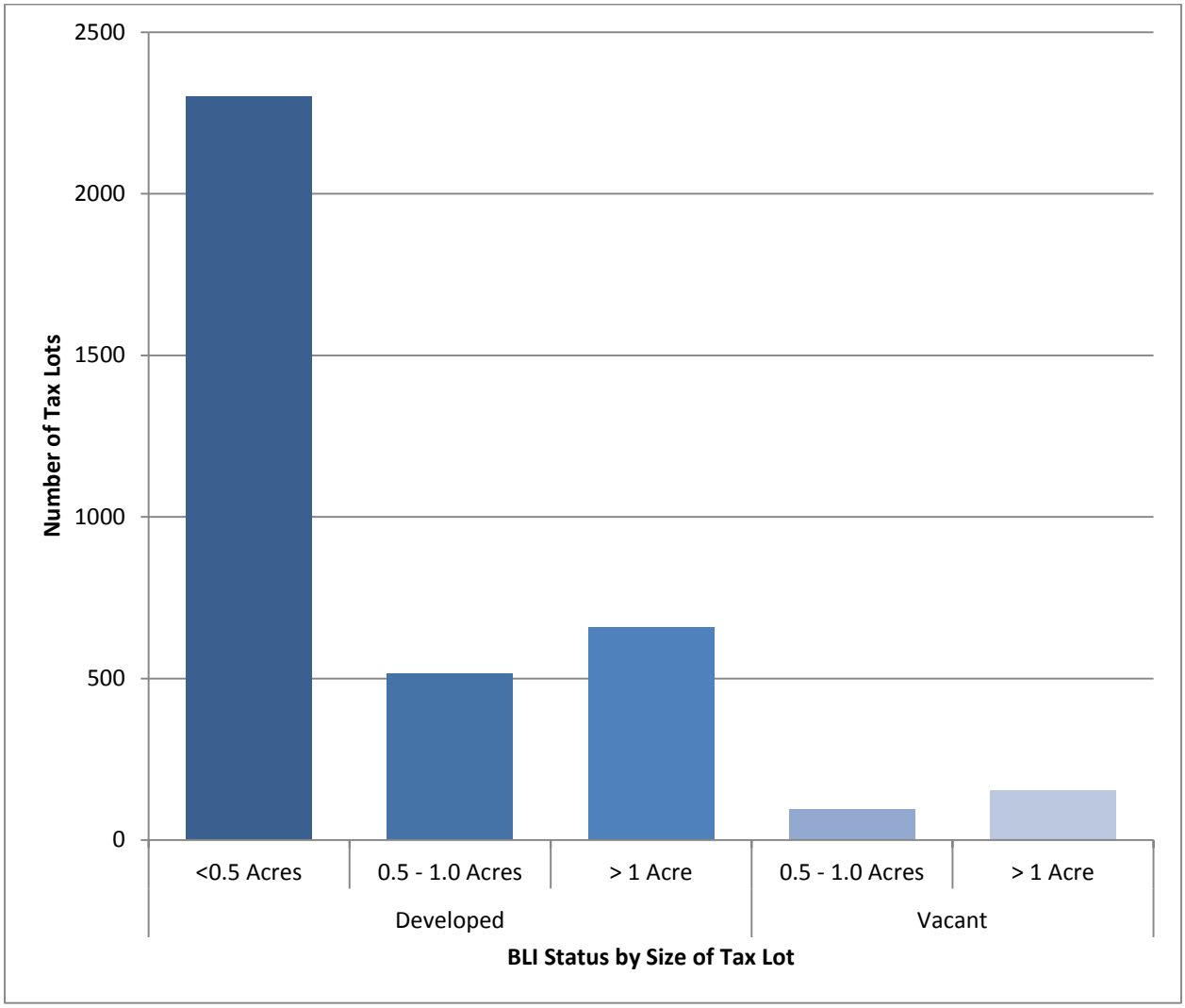


Table 4. Employment Land by Comprehensive Plan Designation (Excluding Park and School Land)

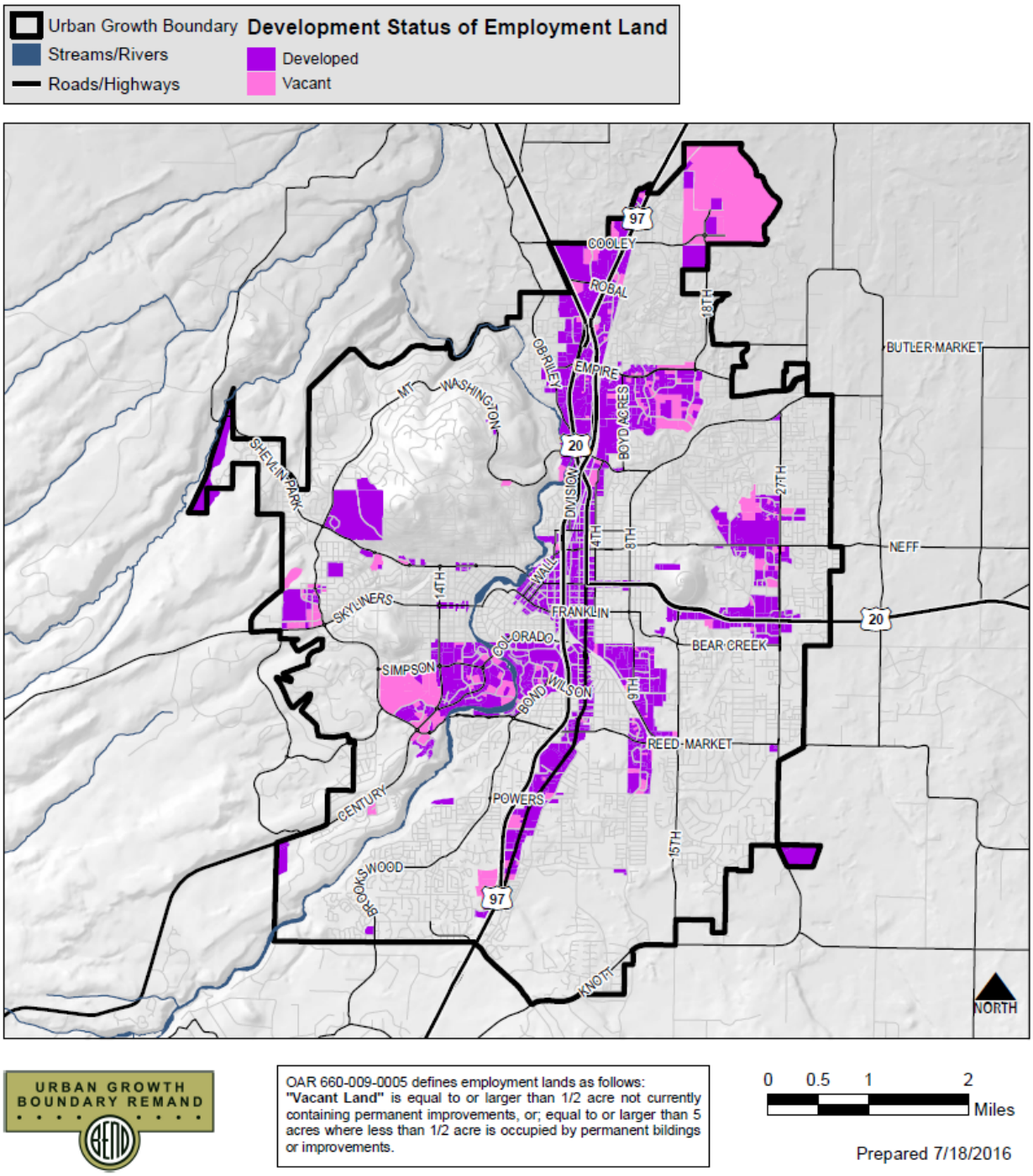
Comprehensive Plan Designation	Number of Taxlots	Total Acres
CB	**322**	**40.2**
Developed	322	40.2
Vacant	0	0.0
CC	**180**	**77.8**
Developed	173	65.8
Vacant	7	12.0
CG	**564**	**724.8**
Developed	515	627.8
Vacant	49	97.0
CL	**763**	**374.4**
Developed	734	305.4
Vacant	29	69.0
IG	**152**	**196.6**
Developed	146	188.2
Vacant	6	8.4
IL	**669**	**1259.3**
Developed	579	658.8
Vacant	90	600.5
MDOZ*	**186**	**250.7**
Developed	126	75.9
Vacant	20	55.2
ME	**335**	**308.1**
Developed	318	270.0
Vacant	17	38.1
MR	**453**	**221.1**
Developed	435	180.8
Vacant	18	40.3
PF	**45**	**543.8**
Developed	38	457.8
Vacant	7	86.0
PO	**2**	**6.1**
Developed	0	0.0
Vacant	2	6.1

Comprehensive Plan Designation	Number of Taxlots	Total Acres
PO/RM/RS	**25**	**5.8**
Developed	25	5.8
Vacant	0	0.0
SM [30]	**2**	**43.1**
Developed	0	0
Vacant	2	43.1
Grand Total	**3,698**	**3817.5**

** 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.*

[30] The two parcels with a surface mining plan designation inside the UGB are now owned by Oregon State University. They are identified as vacant despite the current mining operation on the site.

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[31]; 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). Land developed with certain types of uses, such as private right-of-way, canal right-of-way, utilities, developed schools and parks, open space in common ownership (e.g. homeowners associations), and cemeteries, is also assigned to the "constrained" category. This land was categorized as "constrained" rather than "developed" because it does not have a strong likelihood of redevelopment within the planning horizon, even if adjacent land used for private development may have redevelopment potential.

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 lots in these categories are 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 (see details below). 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.

Methodology to assign vacant and developed acres for "Partially Vacant" and "Developed with Infill Potential" is as follows:

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

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 + 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 ½-acre, code unconstrained portion of lot 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.

Table 5. Developed and Vacant Acres on Residential Land (Excludes School and Park Land)

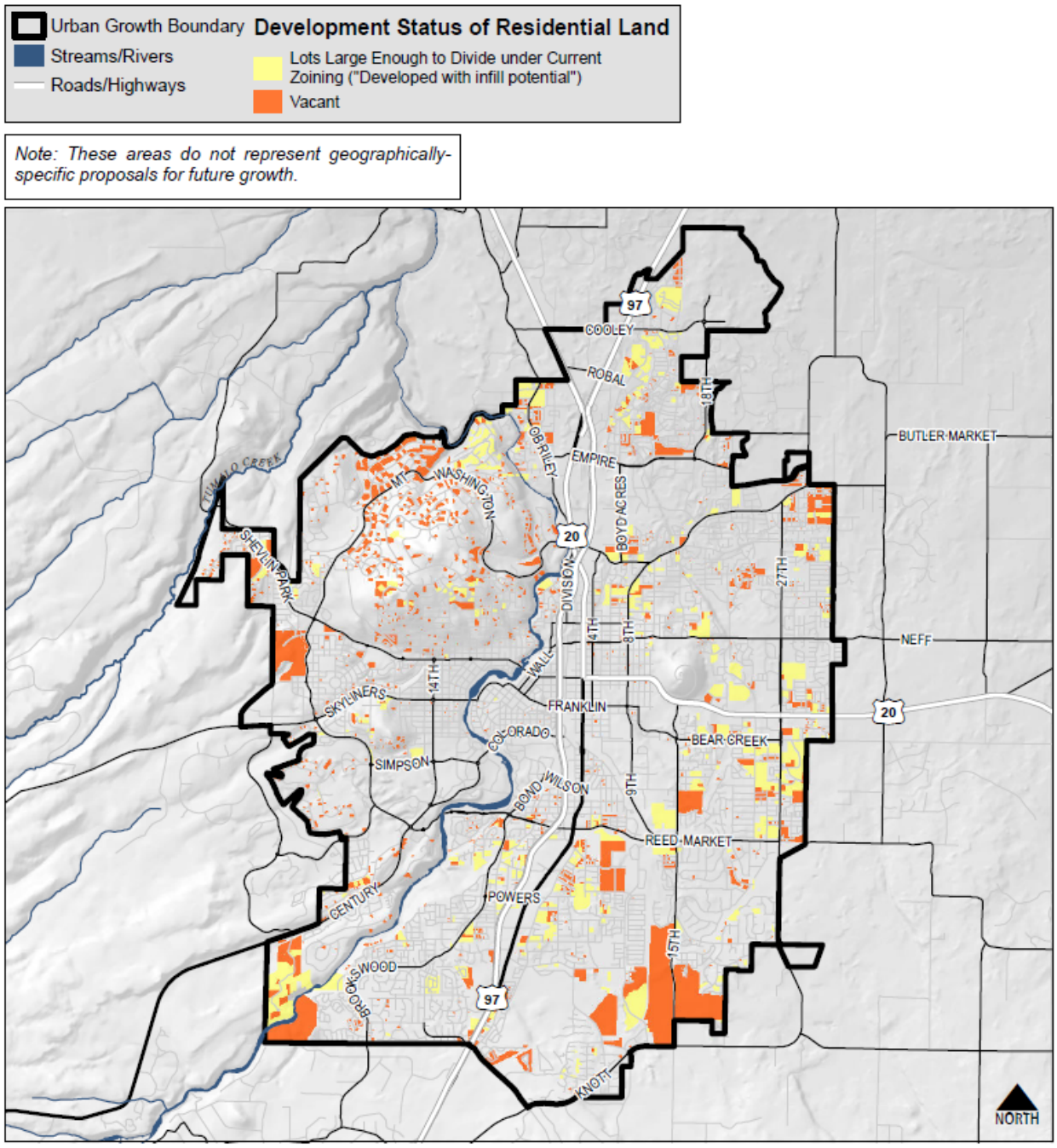
Plan Designation and Development Status	Vacant Acres	Developed Acres
RH	**24.0**	**111.0**
Developed	0.0	43.9
Developed with infill potential	4.5	41.9
Partially Vacant	0.0	6.0
Publicly Owned	0.0	19.2
Vacant	19.5	0.0
RL	**167.9**	**1,389.1**
Developed	0.0	1339.8
Developed with infill potential	116.8	42.9
Partially Vacant	0.0	0.5
Publicly Owned	0.0	5.9
Vacant	51.1	0.0

Plan Designation and Development Status	Vacant Acres	Developed Acres
RM	**291.8**	**846.8**
Developed	0.0	292.3
Developed with infill potential	118.8	462.7
Partially Vacant	0.0	84.1
Publicly Owned	0.0	7.7
Vacant	173.0	0.0
RS	**1,905.5**	**6,409.9**
Developed	0.0	5328.7
Developed with infill potential	622.9	998.9
Partially Vacant	0.0	1.6
Publicly Owned	0.0	80.8
Vacant	1,282.6	0.0
URA	**0.1**	**51.9**
Developed	0.0	19.3
Publicly Owned	0.0	32.5
Vacant	0.1	0.0
Commercial / Industrial Designations[32]	**0.0**	**5.6**
Developed	0.0	4.4
Publicly Owned	0.0	1.2
PF	**92.4**	**35.5**
Developed	0.0	9.7
Developed with infill potential	0.0	0.6
Publicly Owned	69.9	25.2
Vacant	22.4	0.0
Total	**2,481.6**	**8,849.8**

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 **Error! Bookmark not defined.**. Furthermore, there were no tax lots with this designation greater than ½ acre in total, as shown in the chart in Figure 2.

[32] 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.

Figure 6.**Residential BLI Status – Taxlots with Vacant Acreage**



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 6. Developed and Vacant Acres on Employment Land

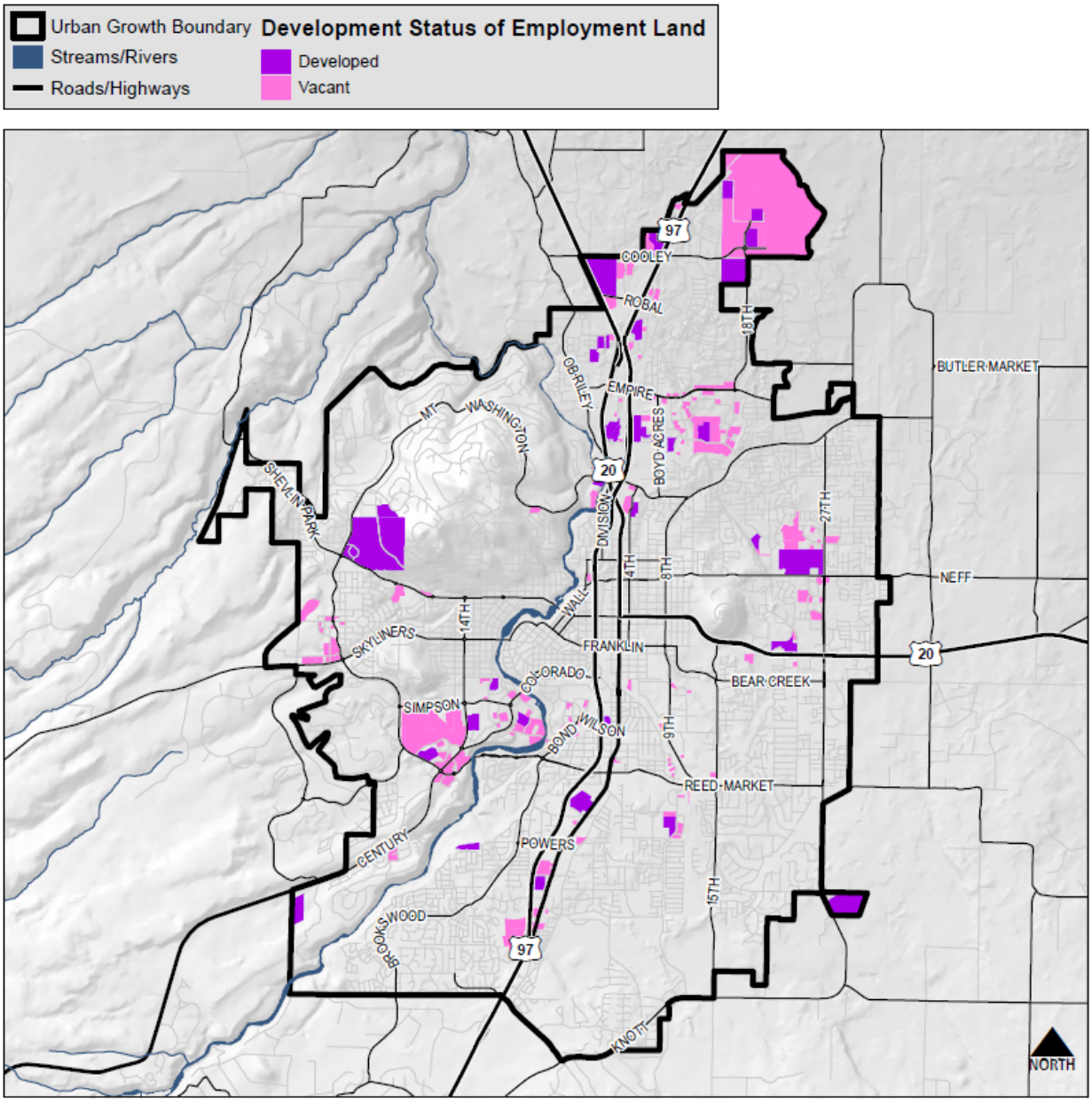
Plan Category and Employment BLI Status	Vacant Acres	Developed Acres
CB	**0.0**	**37.8**
Developed	0.0	37.8
Vacant	**0.0**	**0.0**
CC	**11.6**	**65.8**
Developed	0.0	65.8
Vacant	11.6	0.0
CG	**117.1**	**610.4**
Developed	22.0	599.4
Vacant	95.1	10.9
CL	**84.3**	**281.1**
Developed	20.3	281.1
Vacant	64.0	0.0
IG	**7.8**	**178.0**
Developed	0.0	178.0
Vacant	7.8	0.0
IL	**638.4**	**595.3**
Developed	44.7	595.3
Vacant	593.7	0.0
MDOZ*	**72.6**	**176.8**
Developed	17.4	176.8
Vacant	55.1	0.0
ME	**92.5**	**200.3**
Developed	54.6	200.3
Vacant	37.9	0.0
MR	**32.5**	**126.5**

Plan Category and Employment BLI Status	Vacant Acres	Developed Acres
Developed	0.0	126.5
Vacant	32.5	0.0
PF	**125.7**	**155.7**
Developed	113.4	155.7
Vacant	12.3	0.0
PO	**6.0**	**0.0**
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
SM[33]	**27.2**	**0.0**
Developed	0.0	0.0
Vacant	27.2	0.0
Grand Total	**1,215.7**	**2,433.6**

** 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.*

[33] The Oregon State University (OSU) site on Century Dr. has a surface mining designation. It was identified as a special site for a university, and was considered available for that purpose.

Figure 7. **Employment BLI Status - Taxlots with Vacant Acreage**



URBAN GROWTH BOUNDARY REMAND

OAR 660-009-0005 defines employment lands as follows:
"Vacant Land" is equal to or larger than 1/2 acre not currently containing permanent improvements, or; equal to or larger than 5 acres where less than 1/2 acre is occupied by permanent bildings or improvements.

0 0.5 1 2
Miles

Prepared 7/18/2016

Developable Acreage: Publicly Owned Land

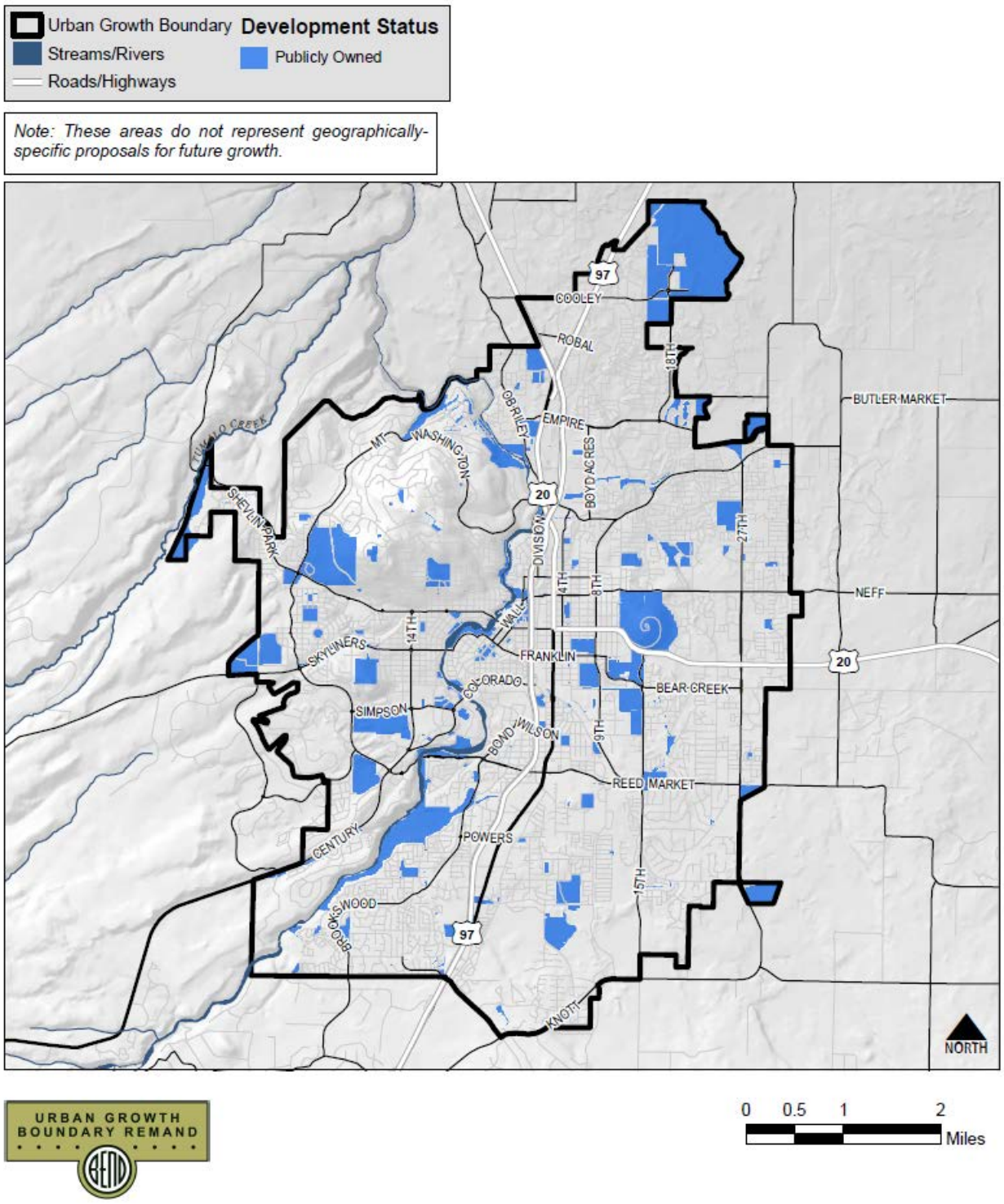
Publically owned lands were classified as developed because they are generally unavailable for residential development or redevelopment. If the public owner has indicated to the City that the land is available for development, it has been classified that way, such as Juniper Ridge, which is owned by the City of Bend and considered available for employment uses. Staff contacted numerous public agencies who are land owners and requested they provide a list of surplus lands they intend to not develop for their public purposes. Note that certain public land, such as canal right-of-way, utilities, developed schools and parks, was categorized as "constrained" rather than "developed" because it does not have a strong likelihood of redevelopment within the planning horizon, even if adjacent land used for private development may have redevelopment potential. "Developed" acres on publicly-owned land are generally developed with institutional or administrative uses other than K-12 public schools, such as public offices and maintenance facilities.

Table 7. Developed and Vacant Acres on Publicly Owned Land

Plan Category	Vacant Acres	Developed Acres
CB	0.0	3.1
CG	10.9	12.8
CL	2.2	8.8
IG	0.0	2.7
IL	455.7	24.5
ME	7.5	26.9
MR	0.0	6.7
PF[34]	195.0	477.3
RH	1.1	23.7
RL	0.0	5.9
RM	0.0	42.5
RS	0.0	167.1
URA	0.0	47.5
Grand Total	**672.5**	**849.6**

[34] The Central Oregon Irrigation District (COID) owns a 100-acre property that has a plan designation of PF, zoning of RS. This land is part of the residential land inventory shown on figure EX-2 due to its RS zone, but has no development capacity within the planning horizon due to a view easement (See Appendix D). As part of the UGB proposal, the City is proposing an Efficiency Measure to change the plan designation of this property to RS in order to facilitate future development once the view easement expires.

Figure 8.**Publicly Owned Land**



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

APPENDIX B – WATERWAY OVERLAY ZONE INFORMATION

This appendix contains information regarding treatment of the Waterway Overlay Zone in the BLI.

OAR 660-008-0005(2) states that:
(2) "Buildable Land" means residentially designated land within the urban growth boundary, including both vacant and developed land likely to be redeveloped, that is suitable, available and necessary for residential uses. Publicly owned land is generally not considered available for residential uses. Land is generally considered "suitable and available" unless it:

(a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;

(b) Is subject to natural resource protection measures determined under statewide Planning Goals 5, 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.

* * *

Waterway Overlay Development History

The City adopted the Deschutes River Design Review in 1985 (NS-1414) and the Flood Plain Combining Zone in 1987 (NS-1462), to regulate development along the Deschutes River. The main purpose of the Deschutes River Design Review is to maintain the scenic quality within and adjacent to the Deschutes River. Deschutes River Design review establishes three different building setbacks, 30, 40 and 100 feet, based on zoning and location. The 30 foot setback is applied to commercial properties, the 40 foot setback applies to all other properties within the core of the city. The 100 foot setback applies to properties outside the core, as identified as being south of the Arizona/Commerce line and north of Sawyer Park on the east side and north of Flume Park on the west side out to the UGB. Only the Planning Commission can grant exceptions to the setbacks.

The Waterway Overlay Zone was adopted in 2002 and combines four different sub-areas; the existing Deschutes River Design Review and Floodplain Combining Zone, the new Goal 5 Riparian Corridor protection and the River Corridor Areas of special interest into one code. Each sub-area has its own set of standards and setbacks for protection.

Riparian Corridor Sub-zone – The Riparian Corridor identifies a Goal 5 resource along the Deschutes River and Tumalo Creek based on the "safe harbor" rules. The Riparian corridor boundary is determined by slope as measured from the ordinary high water mark or upland edge of a wetland. Steep slopes are considered to exist when and area has sixty percent or greater slope; and a vertical ride of 20 feet or more; and a continuous horizontal length of 50 feet or more. Along the east and west banks of the Deschutes river, the boundary varies from 30 to 75 feet in width. The code describes the different boundary setbacks for the various reaches of the river. For Tumalo Creek, both sides of the creek have a 50 foot wide boundary for the length of the creek inside the city limits. Development is prohibited within the Riparian Corridor boundary.

Deschutes River Corridor Design Review – As stated above, the Deschutes River

Corridor Design Review establishes three different building setbacks based on zoning and location along the river. The most restrictive is the 100 foot setback located primarily outside the main core of the city. Development is prohibited but exceptions can be granted by the Planning Commission. Typical exceptions granted have been for at grade patios and decks, fences and building overhangs, not new residential units.

River Corridor Area of Special Interest Sub-Zone – The River Corridor ASI sub-zone strives to protect unique geologic features that exist along the river corridor and enhance the experience within the corridor. The focus is primarily on the river canyons along the north and south reaches of the river and the associated native vegetation. The river corridor ASI is inclusive of the Riparian Corridor sub-zone. The River Corridor ASI sub-zone prohibits development within the ASI and establishes a minimum building setback of 30 feet from the canyon rim for buildings. The setback increases for taller buildings. Exceptions have been authorized for utilities and roads when no other practical option is available.

The River Corridor ASI provides a development credit for property owners that protect and preserve an ASI. The property owner can benefit from a density credit equivalent to the area being preserved or receive reduced development standards in the form of landscaping, parking reduction or setback reduction.

The Floodplain Combining Zone – This sub-area does not prohibit development but does require development obtain a building permit to meet FEMA construction standards. This sub-area generally overlaps one or more of the other sub-areas whereby prohibiting development.

The Waterway Overlay Zone (WOZ) applies to both the Deschutes River and Tumalo Creek. The WOZ is defined as the most landward edge of the four sub-areas. Since adoption in 2002, no developer or land owner has taken advantage of the development credit offered in the River Corridor ASI sub-zone. Most land use applications subject to the WOZ are single family homes requesting approval for remodel.

In 2004, Rocky Point was approved for 16 lots with attached townhomes and one lot with an existing detached home on a 7.57 acre parcel zoned RS. The original proposal called for 5 lots with detached homes located within the WOZ. The developer eliminated those lots and ultimately dedicated the land within the WOZ totaling 3.42 acres to the BMPRD.

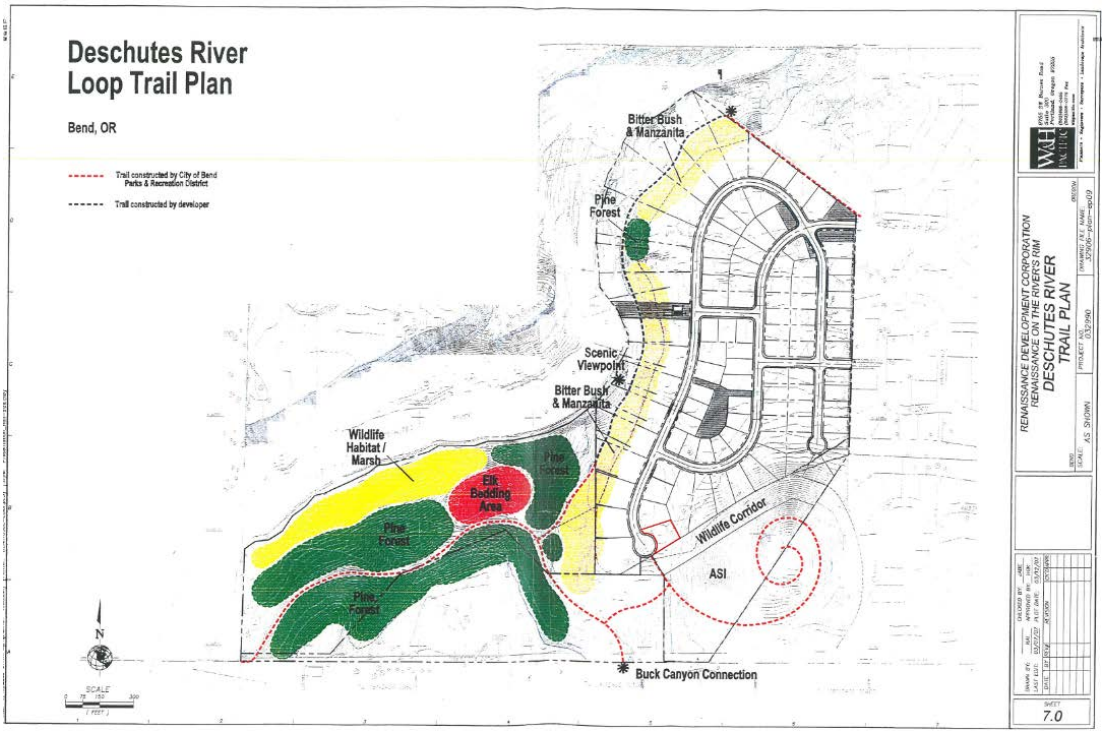
In 2001, River Canyon Estates platted lots along the river canyon. Aware of the forthcoming Waterway Overlay code, the developer worked with the city to designate the 30 foot minimum rim setback. Each home constructed on a rim lot must meet the 30 foot minimum setback/step-back depending on building height.

In 2002, Otter Run , located in the MR zone and subject to the 100 foot Deschutes River Design Review setback, applied for approval to encroach into the 100-foot setback area to construct decks and roof overhangs for five (5) townhomes located within a previously approved zero-lot line development. The Planning Commission granted an encroachment of up to 12 feet for uncovered decks, 18 inches for roof overhangs and

were allowed to place a 3 ft wrought iron fence within the 100 foot setback. No additional structures could be constructed within the setback.

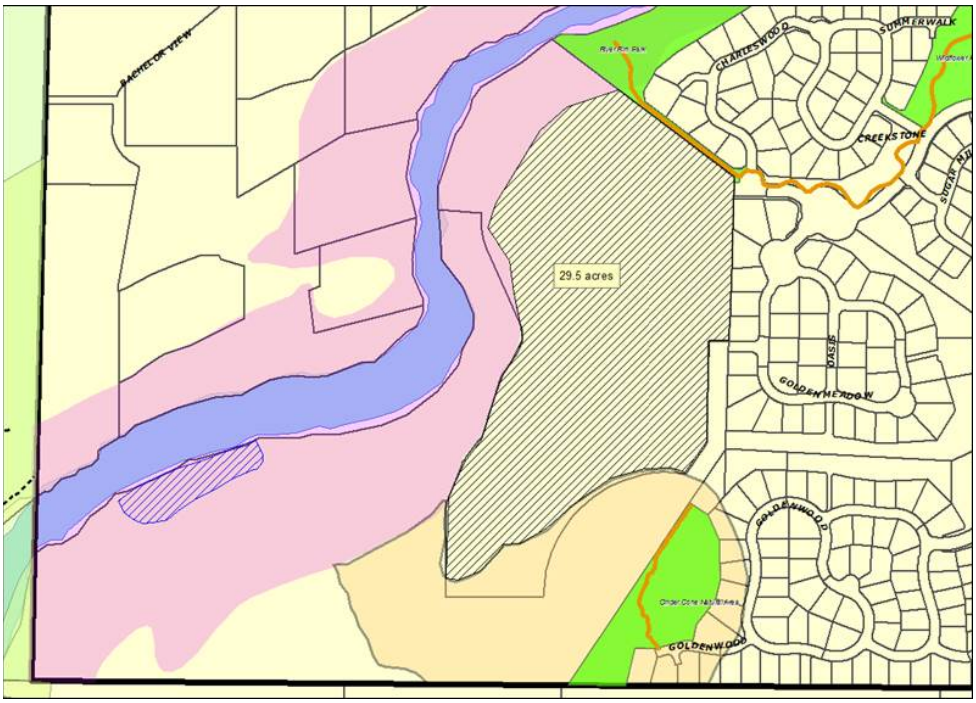
In 2006, Renaissance Development and Stosh Thompson applied for a 101 lot subdivision on 81.4 acres on the east side of the Deschutes River next to the River Rim Community. The property included 7 acres of land identified as the Upland ASI. The developer proposed dedicating the Upland ASI land to the BMPRD. There was an additional 20 acres west of the ASI that was set aside as a wildlife preserve. The remaining developable land was approximately 54 acres.

As part of the Renaissance Development the developer was in conversation with the Park District to deed the upland ASI, the river Corridor ASI and a trail easement. Below i the master plan map.



The project was ultimately appealed to LUBA. When the issues were resolved, the state was in the middle of the recession and the project expired.

Stosh Thompson has since done lot line adjustments segregating out the developable land from the River Corridor ASI and the Upland ASI. The developable portion is about 30 acres. A map showing the adjusted lots is shown below.



Approximately 20 years ago Mr. Thompson placed all of his land holdings into Open Space deferral for tax purposes. Anyone seeking to develop the land is required to pay the deferred taxes. This could amount to millions of dollars depending on the size of the land development. That might explain why so much of the land was left as open space as part of the Renaissance Development proposal.

Upland ASI Development History

The Upland ASI's have been part of the Bend Area General Plan since 1975. Upland ASI's are important geologic natural features in the landscape that help define the community. They were inventoried by a volunteer group in 1999 and eventually incorporated into the Development Code in 2001 as areas to preserve. They were never adopted as a Goal 5 Open Space resource. Over the years some ASI's have been removed from the inventory through a plan map amendment. These have been mostly in the commercial and industrial areas of Bend. For the most part, the residential ASI's have been retained and incorporated into the development as open space or dedicated/sold to the BMPRD as park land. Like the River Corridor ASI's, there is a development credit for retaining an Upland ASI which includes a density transfer. However, no one has ever take advantage of the density credit.

Reasonable Assumption for Renaissance Development Parcel

Assume the adjusted development area of 30 acres will develop at 4 units per acre maximum capacity. The remaining land will likely be transferred to the Park District and remain as open space.

APPENDIX C – COVENANTS, CONDITIONS AND RESTRICTIONS

This appendix contains information regarding treatment of the Covenants, Conditions and Restrictions (CC&R's) in the BLI.

SubDiv	Cnt_SubDiv	CCR's Present	Copy of CCRs	Restriction Type	Recorded Page	Additional References
AIRPARK ESTATES	34	yes	yes	1 sfr per lot	Page 1, para #1	
ASPEN VILLAGE AT MOUNTAIN HIGH	27	Yes	Yes	none restricting further land division of lots		
AWBREY BUTTE HOMESITES PHASE FIFTEEN	41	Yes	Yes	No lot division allowed	See above	
AWBREY BUTTE HOMESITES PHASE TWENTY-TWO	41	Yes	Yes	No lot division allowed	See above	
AWBREY GLEN HOMESITES PHASE ONE	42	Yes	Yes	No lot division allowed	See above	
AWBREY GLEN HOMESITES PHASE SIX	35	Yes	Yes	Section 6.11 prohibits more than one home per homesite.	92-2557098-18915	
AWBREY PARK		Yes	Yes	See 8.5 - no lot may be subdivided.	2003-84437	
AWBREY ROAD HEIGHTS		Yes	Yes	See 4.11 - no more than one single family residence shall be erected or placed on any lot	2002-41185	
AWBREY VILLAGE PHASE 1	29	Yes	Yes	See 4.21 - no lot can be partitioned or subdivided	474-0876	
AWBREY VILLAGE PHASE 2	34	yes	yes	1 sfr per lot	para 4.11, 72-902	
AWBREY VILLAGE PHASE 3	35	Yes	Yes	Section 3.22 prohibits the further subdivision of lots.	2002-36911	
AWBREY VILLAGE PHASE 5	25	Yes	Yes	No subdividing	Sec. 3.22; pg. 12	
BEND PARK	139	yes	no	n/a	199-493	
BOULDER RIDGE PHASE TWO	22	Yes	yes	See (2)(d) - single family home only	457-1053	
BOULEVARD ADDITION TO BEND	35	No	---	---	---	
BROKEN TOP PHASE I-E	25	Yes	Yes	No partition; no subdivision w/o Board approval	Article VII, pg. 21; Article XII, Sec. 12.6.(b)(iii) pg. 35	
BROKEN TOP PHASE II-C	22	Yes	Yes	master plan and maximum # of units	352-1529, 353-0578	
BROKEN TOP PHASE III-A	22	Yes	Yes	master plan and maximum # of units	352-1529, 353-0578	
BROKEN TOP PHASES 1-A AND 1-B	42	Yes	Yes	No lot division allowed	See above	
BROKEN TOP PHASES 1-C AND 1-D	26	Yes	Yes	master plan and maximum # of units	352-1529, 353-0578	
BROKEN TOP PHASES IV-A IV-B & IV-C	32	yes	yes	max # units in master plan	para 1.2	
BROOKSIDE	30	yes	yes	a residence per property (lot), 25' setbacks	Page 1, para 1	
BROOKSIDE FIRST ADDITION	22	Yes	Yes	none restricting redevelopment or land division		
CENTENNIAL GLEN	44	Yes	Yes	Arch Standards small lots lot division unlikely	2005-8345	
CENTER ADDITION TO BEND	128	no	no	n/a	n/a	
CHOCTAW VILLAGE	46	Yes	Yes	Setbacks and use restrictions - subdvision unlikely	254-761	
CITY VIEW PHASE II	34	Yes	Yes	Section 4.11 prohibits more than one single familty residence on any lot. Lots may only be adjusted by lot line adjustment, no new lots.	89-1082890-0205793-3829195-37416	
CITY VIEW SUBDIVISION PHASE I	26	Yes	Yes	none restricting further land division of lots		
CLEAR SKY ESTATES	135	yes	no	n/a	248-401	
COULTER	38	Yes	Yes	Section 9.5 prohibits the subdivision of a lot.	2006-200852007-05739	
DESCHUTES	129	no	no	n/a	n/a	Historic District
EAST KNOLL SECTION OF SUNRISE VILLAGE	36	Steve	None found on county website for "East Knoll Section of Sunrise Village". The Plan of Sunrise Village does includes CC&Rs. Subsequent phases of Sunriver Village all subject to CC&Rs..	Yes, are Book 279, 210'---	The Plan of Sunrise Village does includes CC&Rs. Section 5 limits to a single family residence and where two lots are combined, only one residence per combined lot is permitted.'---'---	Book 279, Page 210
EASTWOOD ADDITION	48	No	No	Unlikely redev due to home placement and type		
EDGECLIFF	37	None found on county website.	---	---	---	
ELLIS SUBDIVISION	38	None found on county website. Confirm whether to verify with title company.	---	---	---	
FIRST ADDITION TO BEND PARK	193	yes	no	no liquor!	199-493	
FOREST GROVE ESTATES PHASE I	26	Yes	Yes	none restricting redevelopment or land division		
FOREST GROVE ESTATES PHASES 3 AND 4	21	Yes	Yes	none restricting redevelopment or land division		
FOREST HILLS PHASE I	23	Yes	Yes	One dwelling per lot	346-2853	Section 4.11
FOREST HILLS PHASE II	21	Yes	Yes	See 4.1.1 - not more than one sfd / lot	346-2853	
FOREST HILLS PHASE IV	21	Yes	Yes	See 4.1.1 - not more than one sfd / lot	346-2853	
GLENSHIRE PHASES I & II	39	Yes	Yes	No restriction on subdivision.	2002-54529	
HIGH DESERT VILLAGE	45	Yes	Yes	No restriction but no room for additional units	2000-50252	
HIGHLAND ADDITION	37	None found on county website for "Highland Addition".	---	---	---	
HOLLIDAY PARK	34	Yes	Yes	Section 4.11 prohibits more than one single familty residence on any lot. Lots may only be adjusted by lot line adjustment, no new lots.	91-17754 91-17756 1999-15901 2003-08854 2004-57182 2007-46904	

HOLLIDAY PARK FIRST ADDITION	30	yes	yes, + aerial	sfr or mf … 3.07 ac redevelopable		
HOLLOW PINE ESTATES PHASES III AND IV	29	Yes	Yes	none restricting further land division of lots		
KENWOOD	172	yes	no	n/a	280-409	
KENWOOD GARDENS	43	No	No	No restriction except slope		
KEYSTONE TERRACE	38	Steve	Yes	Yes	Affordable housing restrictive covenant.	2012-018357
KINGS FOREST	32	yes	yes	one sfr per lot	Page 1, para #1	
KINGS FOREST FIRST ADDITION	27	Yes	Yes	one single family dwelling per parcel of land	234-1	
KNOLL HEIGHTS	26	Yes	Yes	none restricting land division		
MILL ADDITION TO BEND	78	no	no	n/a	n/a	Historic District
MILLER HEIGHTS PHASE I	21	Yes	Yes	See 4.21 - no lot partitioned or subdivided	436-1061	
MOUNTAIN GATE	31	yes	yes	restricted to sfr/ unit (lot)	Section 5	
MOUNTAIN HIGH	127	yes	yes	residential - unclear	322-707	
MOUNTAIN VIEW PARK PHASE I	43	Yes	Yes	No lot division allowed	327-2526	
MW ACRE TRACTS	33	no	aerial and list of unimproved lots … total 1.06 ac redevelopable			
NORTH PILOT BUTTE ADDITION	23	Yes	Yes	One dwelling per lot	131-174	Section 1
NORTH RIM		Yes	Yes	See 8.5 - lots must be no less than one acre in size	2004-41671	
NORTHWEST TOWNSITE COMPANYS FIRST ADDITION BEND	31	no	aerial and list of unimproved lots … total 0.11 (one 4,792 sf lot)			
NORTHWEST TOWNSITE COS SECOND ADDITION TO BEND	34	Yes	Yes	Restrictive covenant re vehicle access (Lots 1 & 2,	2010-07441	
NOTTINGHAM SQUARE	47	Yes	Yes	Unclear but fully built out	200-1082	
OUTBACK SECTION OF SUNRISE VILLAGE	37	None found on county website for "Outback Section of Sunrise Village". The Plan of Sunrise Village does includes CC&Rs. Subsequent phases of Sunriver Village all subject to CC&Rs.	Yes, are Book 279, 21	The Plan of Sunrise Village does includes CC&Rs. Section 5 limits to a single family residence and where two lots are combined, only one residence per combined lot is permitted.'---	Book 279, Page 210	
OVERTURF BUTTE	33	yes	yes	1 sfr per lot	para 3.16	
PARK ADDITION TO BEND	230	no	no	n/a	old	Historic District
PARKVIEW TERRACE PHASES I AND II	29	Yes	Yes	none restricting land division		
PARKWAY VILLAGE PHASES 1 2 & 3	22	Yes	Yes	See 6.4(b)(iv) - no subdividing lot into two or more lots		
PHEASANT HILL	41	Yes	Yes	Setback Restrictions	183-75	
PHOENIX PARK PHASE I	22	Yes	Yes	none restricting redevelopment or land division		
PILOT BUTTE PARK DEVELOPMENT PHASE II + IV	37	Yes	Yes	Section 4.31 "Lots may not be subdivided."	95-0418795-05661	
PINE CANYON PHASE FIVE	22	Yes	Yes	See 6.11 - no more than one single family residence	272-1990	
PROVIDENCE PHASE 4	26	Yes	Yes	one dwelling / lot; setbacks on plat	299-2860, 2000-18293, 2007-50373	
PROVIDENCE PHASE 5	23	Yes	Yes	one dwelling / lot; setbacks on plat	299-2860, 2000-18293, 2007-50373	
PROVIDENCE PHASE 6	28	Yes	Yes	one dwelling / lot; setbacks on plat	299-2860, 2000-18293, 2007-50373	
PROVIDENCE PHASE 7	21	Yes	Yes	one dwelling / lot; setbacks on plat	299-2860, 2000-18293, 2007-50373	
QUIET CANYON	42	Yes	Yes	No lot division allowed	2003-26815 pg 1	
RANCH VILLAGE 1ST ADDITION	21	Yes	Yes	none restricting redevelopment or land division		
RAVEN WOOD ADDITION	24	Yes	Yes	No subdividing; 7400 sq. ft. minimum lot size.	Sec. 4, pg. 2	
RIDGEWATER II PUD	43	Yes	Yes	No lot division allowed	253-921 pg 21 section 8.5	
RIDGEWATER PHASES 1 AND 2 PUD	27	Yes	Yes	See 8.4 and 8.5; no lot may be rezoned or subdivide	2002-32624	
RIVER BLUFF SECTION OF SUNRISE VILLAGE	75	yes	yes	1 sfd/lot	279-385	
RIVER CANYON ESTATES	31	yes	yes	one sfr per lot	ART VI, Section 1	
RIVER CANYON ESTATES NO 4	22	Yes	Yes	1 residence/lot	2002-72315	Article VI, Sec. 1
RIVER TERRACE	187	yes	no	n/a	n/a	
RIVER WILD AT MOUNT BACHELOR VILLAGE PUD PHASE 2	23	Yes	Yes	no rezoning; no subdivision	2004-03466	Sections 9.4 and 9.5
RIVERRIM PUD PHASE 1	82	yes	yes	1 sfd/lot	2002-22719	
RIVERRIM PUD PHASE 2	25	Yes	Yes	No partition; No subdividing or boundary line change	Article VIII, 8.1; pg. 23; Sec. 12.11; pg. 39	
RIVERRIM PUD PHASE 8	26	Yes	Yes	None	2011-23873	
RIVERS EDGE VILLAGE PHASE II	25	Yes	Yes	No partition	Article VI; pg. 14	
RIVERS EDGE VILLAGE PHASE V	30	yes	yes	a residence per lot	ART II, Section 6	
RIVERS EDGE VILLAGE PHASE VI	23	Yes	Yes	No partition of lot	462-0866	Article 6
ROCKWOOD ESTATES PHASE IV	34	Yes	Yes	Section 3.14 prohibits further subdivision of lot. Lots	96-4802497-37526	
ROSE TERRACE	33	yes	yes, + aerial	none, fully developed multi family		
SANDALWOOD PHASE 1	21	Yes	Yes	none restricting redevelopment or land division		
SECOND ADDITION TO BEND PARK	130	yes	no	n/a	199-493	
SECOND ADDITION TO WEST HILLS	40	Yes	Yes	Setback restriction and slope	2003-41180	

SHEVLIN CREST	21	Yes		Yes	none restricting redevelopment or land division		
SKYLINER SUMMIT AT BROKEN TOP PHASE 10	26	Yes		Yes	None restricting land division		
SKYVIEW TERRACE	34	None found on county website	---		---	---	
STAATS ADDITION TO BEND	118	no		no	n/a	n/a	Historic District
SUNTREE	32	yes		yes	one sfr per lot	Page 1, para #1	
TANGLEWOOD	43	Yes		Yes	Setbacks and use restrictions - subdvision unlikely	329-408	
TANGLEWOOD PHASE II	32	yes		yes	one sfr per lot	Page 1, para #2	
TANGLEWOOD PHASE III	30	yes		yes	one sfr per lot	Page 1, para #2	
TANGLEWOOD PHASE IV	30	yes		yes	one sfr per lot	Page 1, para #2	
TANGLEWOOD PHASE VI	28	Yes		Yes	No more than one single family dwleling per lot	329-408	
TANGLEWOOD PHASE VII	25	Yes		Yes	No subdividing; One house/lot	Sections 1.b.; 2.; pg.1	
THIRD ADDITION TO BEND PARK	37	Yes		Yes	Affordable housing restrictive covenants.	2001-555142001-554442002-129662002-04465	
TILLICUM VILLAGE	78	Yes		Yes	One residential structure per building lot	148-239, Section 7	
TILLICUM VILLAGE SECOND ADD	45	Yes		Yes	No restriction	184-859	
TIMBER RIDGE	85	yes		yes	residential - unclear	232-885	
TUMALO HEIGHTS	25	Yes		Yes	No subdividing; One house/lot	Sections 2.1.2.; 2.2; pg. 4	
VALHALLA HEIGHTS PHASE I	21	Yes		Yes	none restricting redevelopment or land division		
VALHALLA HEIGHTS PHASE II	39	None found on county website. The plat was recorded in 1978. Confirm whether to verify with title company. The online website contains CC&Rs for Phase IV.	---		---	---	
VALHALLA HEIGHTS PHASE III	39	Yes		Yes	Setback restriction and slope - some subdivision possible	274-352	
WEST HILLS	101	yes		yes	1 sfd/lot	118-455	
WEST RIDGE	48	Yes		Yes	No lot division allowed	348-2804	
WESTBROOK MEADOWS PUD PHASES 1 AND 2	45	Yes		Yes	No lot division allowed 2000-10427-4		
WIESTORIA	191	no		no	n/a	no	
WOODRIVER VILLAGE	141	yes		yes	1 sfd/lot	86-19854	
WOODSIDE RANCH PHASE V	31	yes		yes	a sfr per lot	ART 2, Section 4	
WYNDEMERE	36	Yes		Yes	Section 5.16: Minimum house size is 1200 sq. feet.	88-2192992-145552012-31131	
		yes (2nd layer)		yes	no lot shall be further divided no subdivision	para 4..21, 474-0867 para 12.6.b.iii	

APPENDIX D – VIEW EASEMENT ON COID PROPERTY

This appendix contains information regarding the view easement on the Central Oregon Irrigation District (COID) property.

8744-55
70-

89-00944

SCENIC EASEMENT

177 - 0761

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DATED This 3rd day of April, 1984.

CENTRAL OREGON IRRIGATION DISTRICT

By _____
Chairman of the Board

By _____
Secretary-Manager

BROOKS RESOURCES CORPORATION

By _____

STATE OF OREGON, County of Deschutes: ss.

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

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

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires: _____

STATE OF OREGON, County of Deschutes: ss.

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

PAUL H. BUCHANAN
NOTARY PUBLIC
STATE OF OREGON

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

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

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

EXHIBIT "A"

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

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

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

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

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

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

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

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

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

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

Section 8 of Ordinance 2271

Exhibit H

New Housing Needs Analysis, Appendix K of the Bend Comprehensive Plan

URBAN GROWTH BOUNDARY REMAND

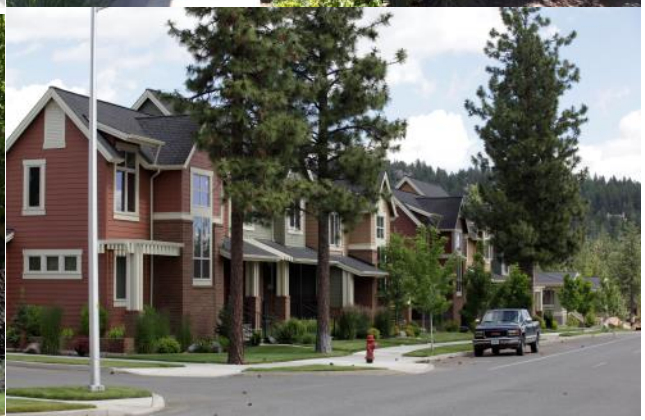
MAKING BEND EVEN BETTER

Bend Housing Needs Analysis

Bend's Growth to 2028

July 19, 2016



ACKNOWLEDGEMENTS

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Nick Lelack, Deschutes County*

*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

Bend's population grew from about 20,000 people in 1990 to 78,000 people in 2013, nearly tripling. Over the same period, Bend's housing stock grew from about 9,000 dwelling units to nearly 34,000 dwelling units, also nearly 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).** The number of people over age 65 years old is projected to grow by more than 37,000 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 with a householder over the age of 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 in Millennials (Age in 2014: 17 to 30 years old; Age in 2028: 31 to 44 years old).** The number of Millennials is expected to grow by about 14,000 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 Millennial households will increase the 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.** The Hispanic and Latino population more than doubled between 2000 and 2013, growing by nearly 6,000 people. The 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 the 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.

These demographic changes, combined with the existing and growing need 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.

Bend's current housing policies and regulations support the development of a mix of housing that is not consistent with Bend's needed mix for a larger percentage of single-family attached and multifamily housing types (relative to past trends) and a higher percentage of more affordable single-family detached housing types. The City will need to enact policy and regulatory changes in order to move from the observed trend of building approximately 75% single-family detached units (between 1998 and 2014) to a rate of 55% single-family detached (SFD), 10% single-family attached (SFA) and 35% multifamily (MF) units going forward from 2014 to 2028. This housing mix (55% SFD, 10% SFA and 35% MF) is the basis for determining residential land needs for the remainder of the planning period (2014-2028). Using this needed mix will ensure that a greater supply of land is available for needed types of housing. In addition, the City is proposing a package of efficiency measures to maximize the capacity of buildable residential lands within the existing Urban Growth Boundary, enable development of multifamily and attached housing in mixed use opportunity areas, and make it more feasible and likely that the market will achieve the needed housing mix and densities. Doing so will have the effect of increasing the supply of needed types of housing at the needed mix that will be affordable to households in Bend in 2028.

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 Oregon Revised Statutes (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.

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:

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[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(3)(b) requires the HNA to be based on data relating to land within the City's UGB that has been collected since the last periodic review or five years, whichever is greater. In Bend's situation, the last periodic review ended in 1998 with the adoption of the 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)

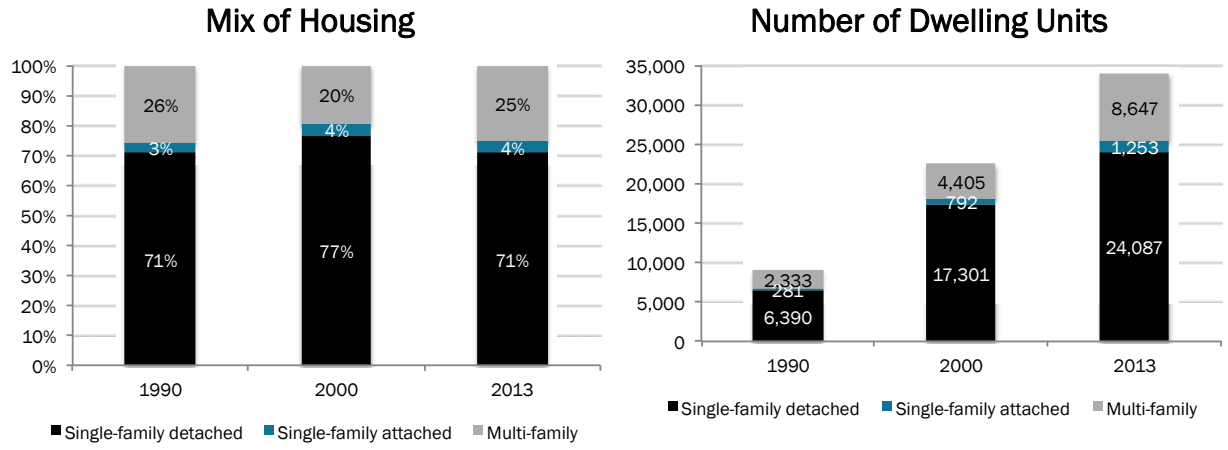
Residential Development Trends

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).

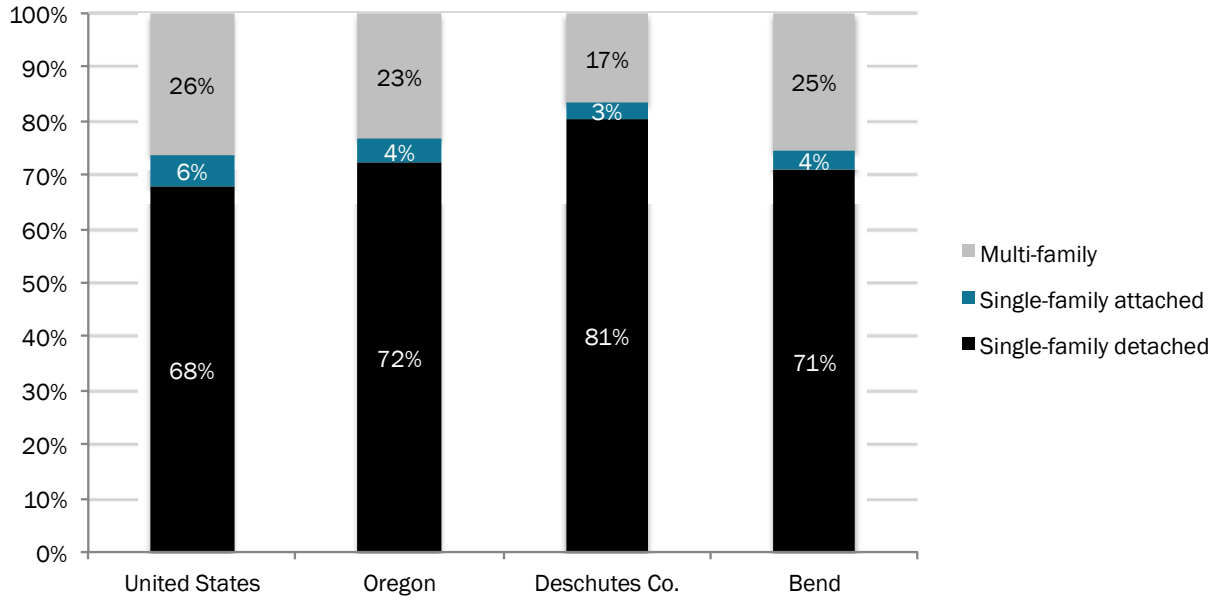
Figure 1. Mix of Housing and Number of Dwelling Units by Housing Type, Bend, 1990, 2000, and 2013



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

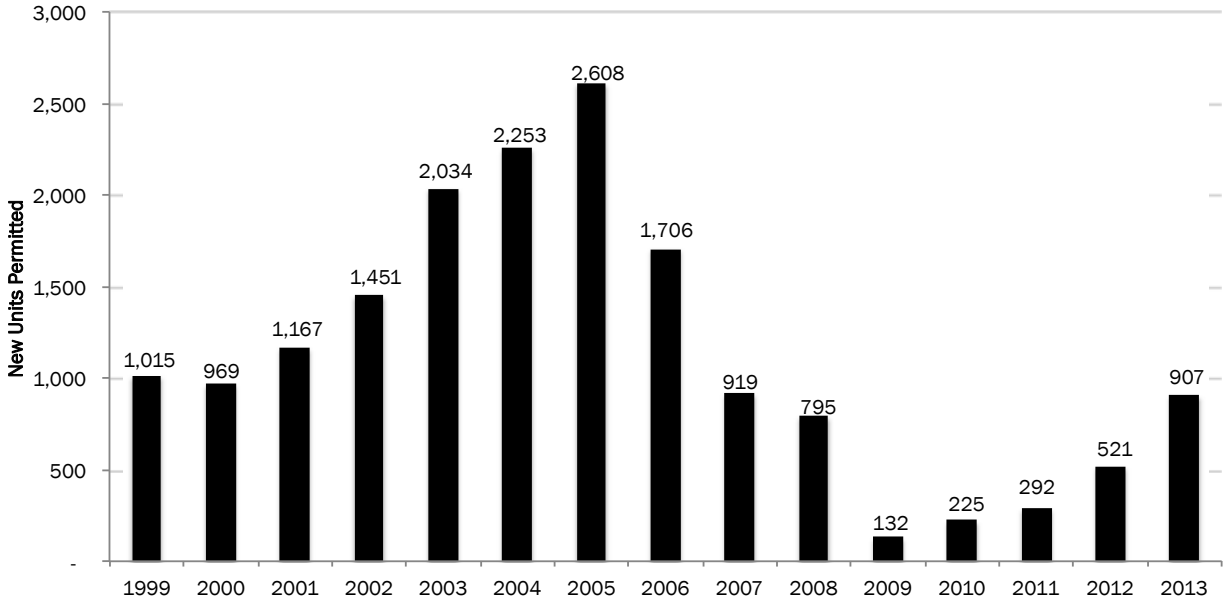


Source: 2013 American Community Survey 1-Year Estimates

Building permit activity

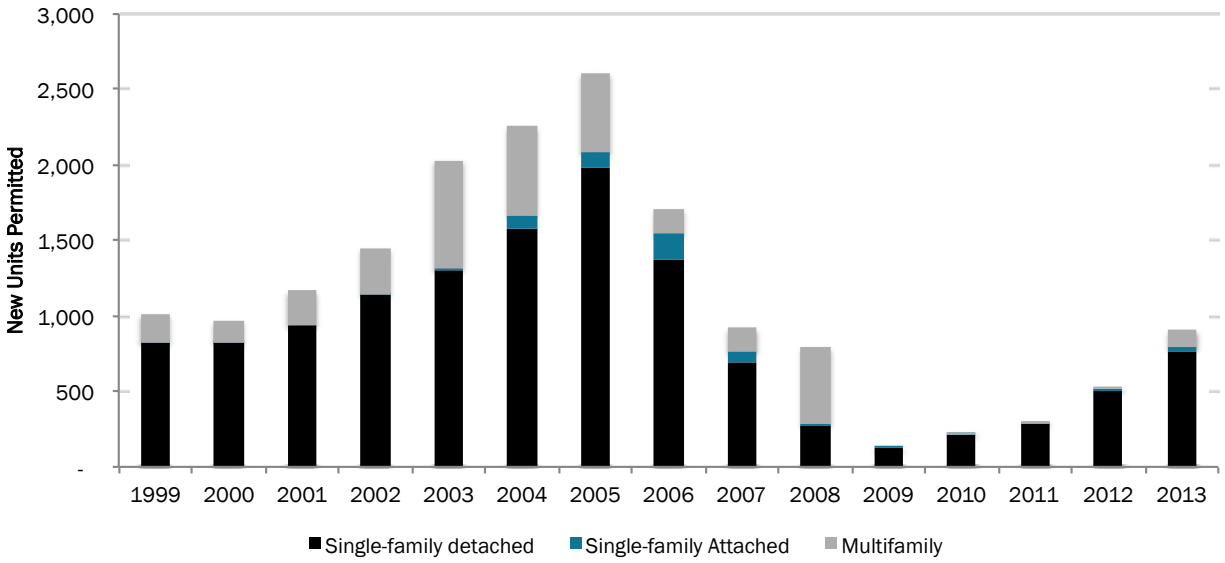
Figure 3 shows total number of dwelling units permitted for housing of all types in Bend between 1999 and 2013. The data show growth of building permit activity between 2001 and 2005 and a significant decline in residential development activity between 2006 and 2009, which corresponds with the national 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

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.

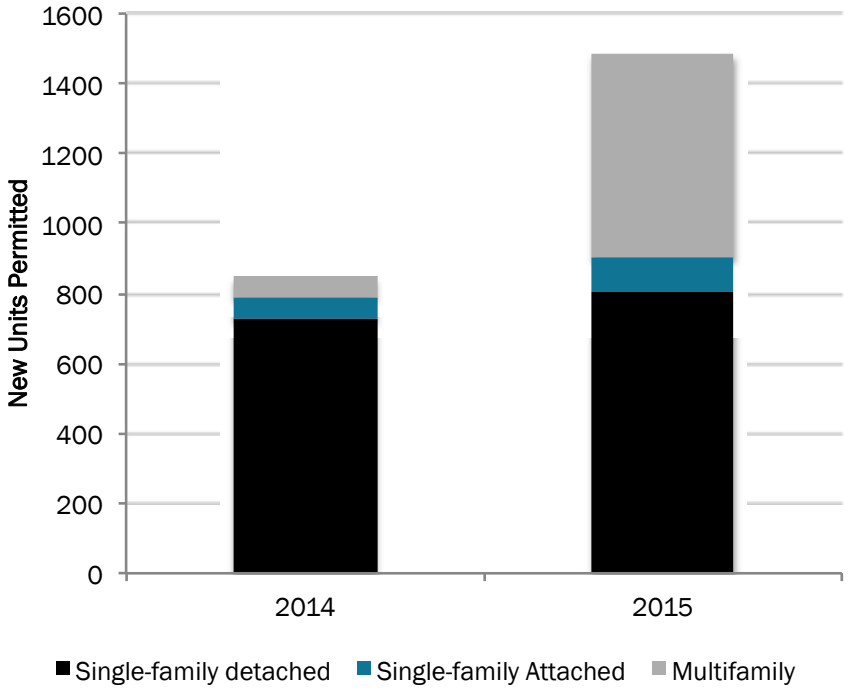
Table 3. Total Permits Issued for New Residential Development (in dwelling units) by Housing Type and Year, 1999 through July 2014, Bend

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

Between January 2014 and December 2015, the City issued permits for 2,330 additional units, 66% of which were single-family detached. During this 2 year period, the City issued building permits for 565 multifamily units. By April 2016, the City has nearly 1,960 multifamily units either under construction or in the planning and permitting stages, including the multifamily units permitted in 2014 and 2015. If all or most of these units are built, the City will have added in a few years more than half as many multifamily units as the City permitted over the entire 1999 to 2014 period.

Figure 5. Total Permits Issued by Type of Unit for New Residential Development (in dwelling units) by Year, 2014 and 2015, Bend



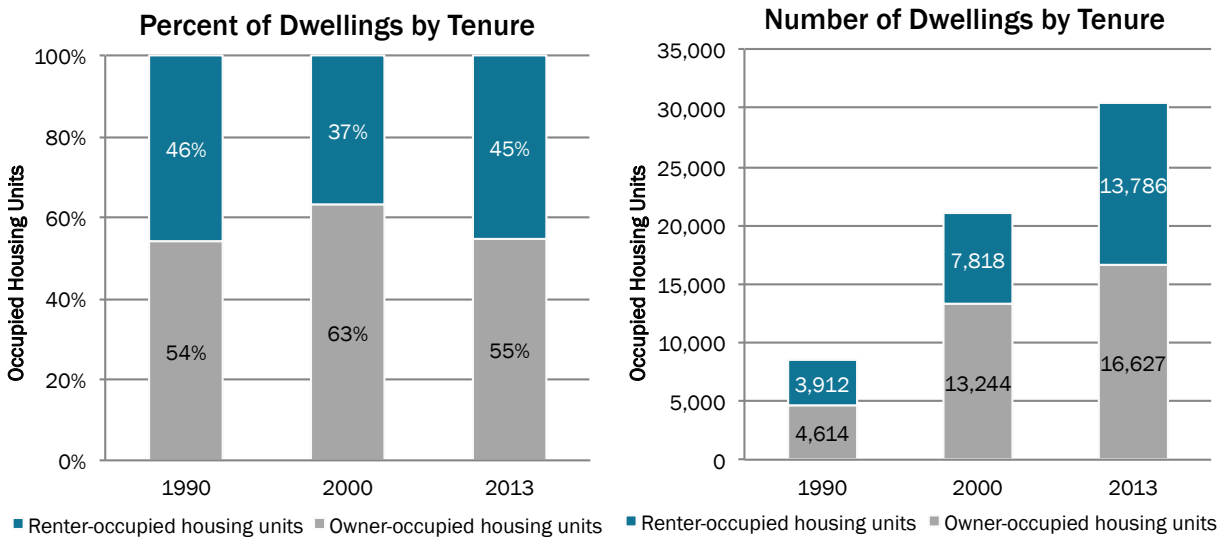
Source: City of Bend building permit data; analysis by ECONorthwest

Trends in Tenure

Figure 6 and Figure 7 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 6 shows that homeownership rates increased from 1990 to 2000 (from 54% to 63%) but returned to roughly 1990 levels by 2013 (55%).

Figure 6. 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

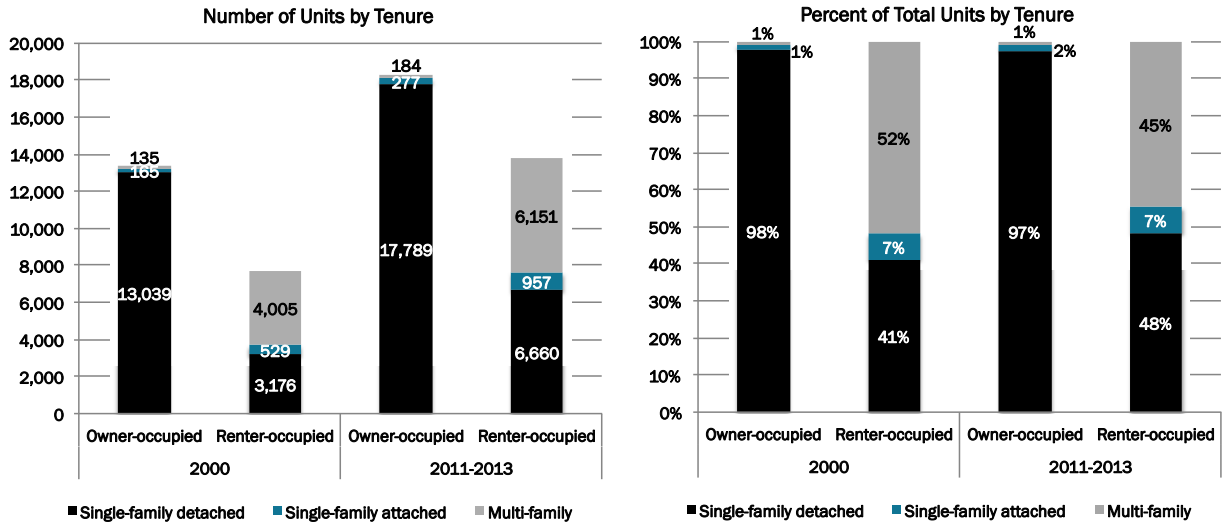
Figure 7 presents data on tenure by housing type for 2000 and 2011-2013.[11]

- 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.

[11] 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 7. Occupied Units by Tenure and Type, Bend, 2000 and 2011-2013

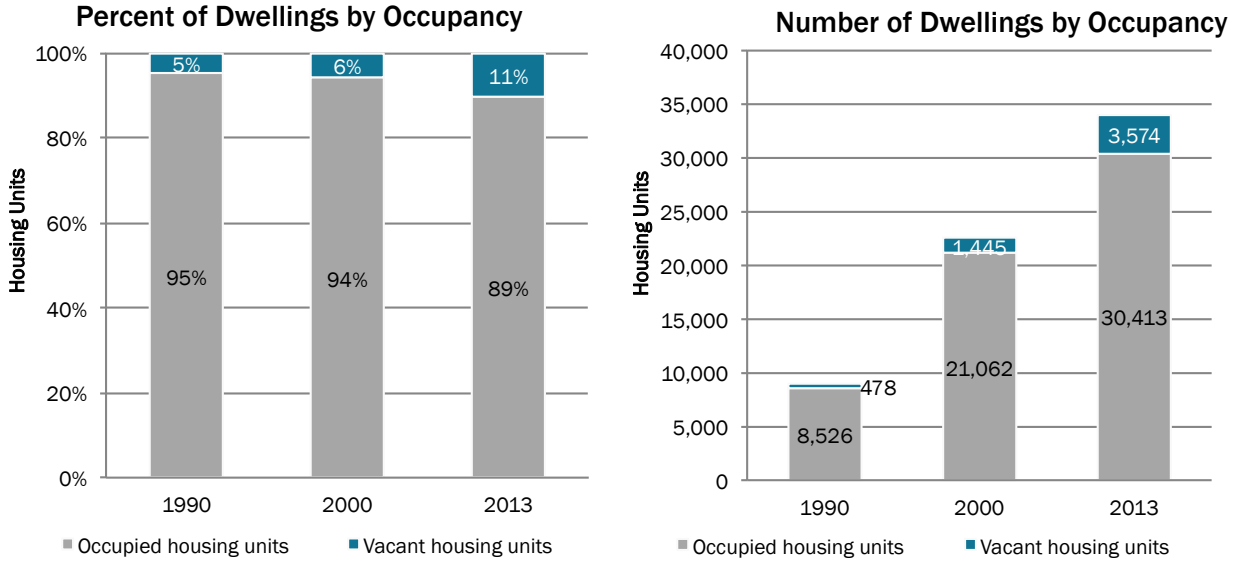


Source: 2000 Census SF3, 2013 American Community Survey 3-Year Estimates

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 8 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.[12] [13] By 2016, anecdotal evidence suggests that vacancy rates continue to be extremely low, below 1%.

Figure 8. 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

[12] 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

[13] 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[14]. 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

[14] 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 densi ty based on gross densities.

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.

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 8).

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.

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[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 13,770 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 13,770 units over the 2014 to 2028 period.

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.

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[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]

[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 9.

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 9. Population Growth, Oregon, Deschutes County, Bend, 1990 through 2013

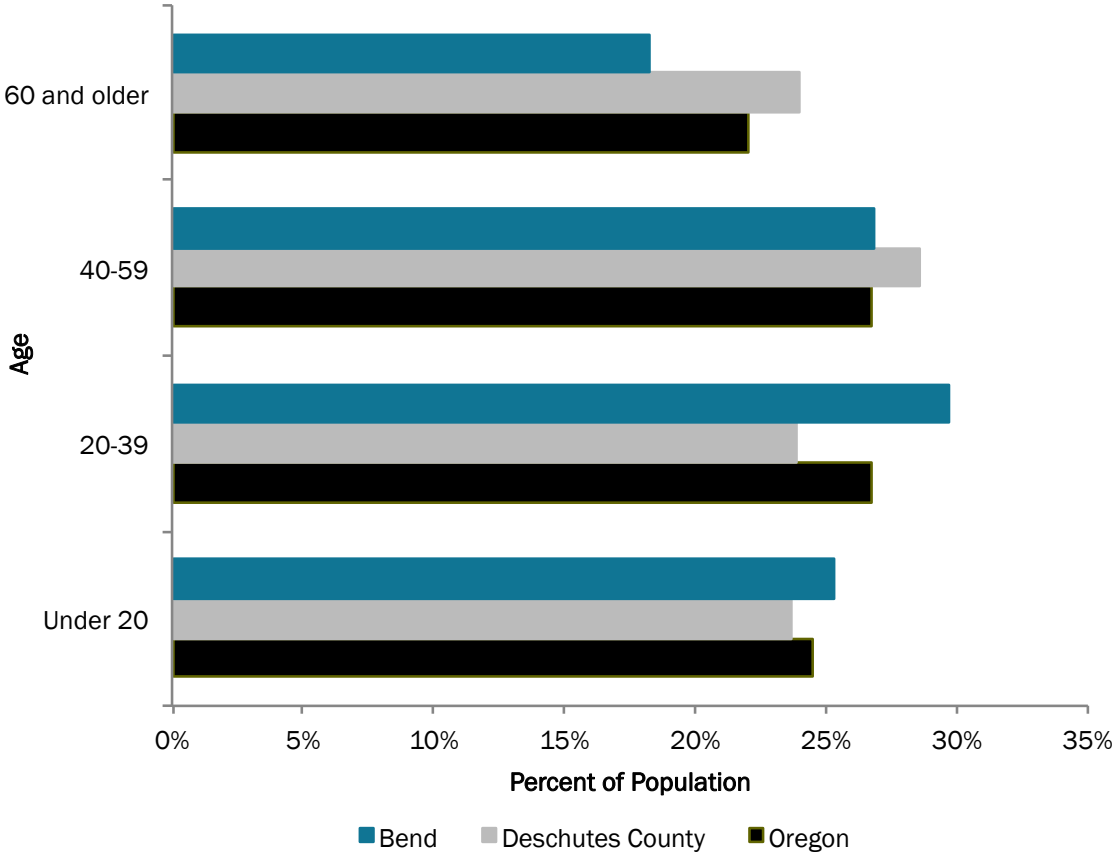
				1990 - 2013 Change		
	1990	2000	2013	Change	% Change	Average Annual Growth Rate
Oregon	2,842,321	3,421,399	3,919,020	1,076,699	38%	1.5%
Deschutes County	74,958	115,367	162,525	87,567	117%	3.6%
Bend	20,469	52,029	78,280	57,811	282%	6.3%

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 10 shows that Bend had a larger share of population between age 20 and 39 than either the county or state averages.

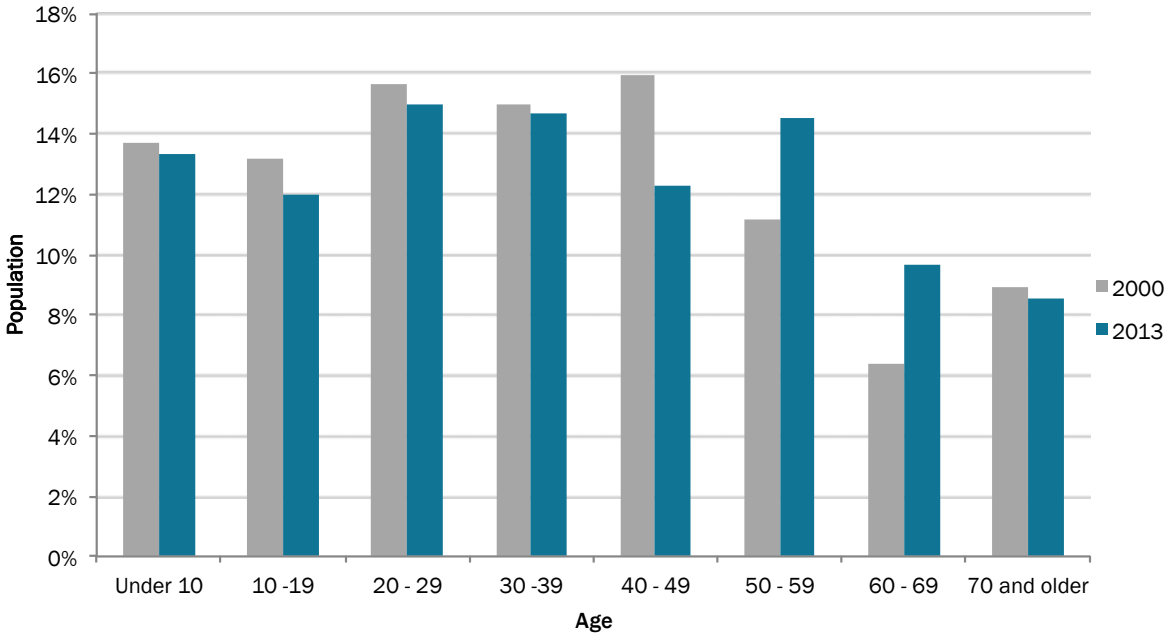
Figure 10. Population by Age, Bend, Deschutes County, and Oregon, 2013



Source: 2013 American Community Survey 1-Year Estimates

Figure 11 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 11. Age of Population, Bend, 2000 and 2013

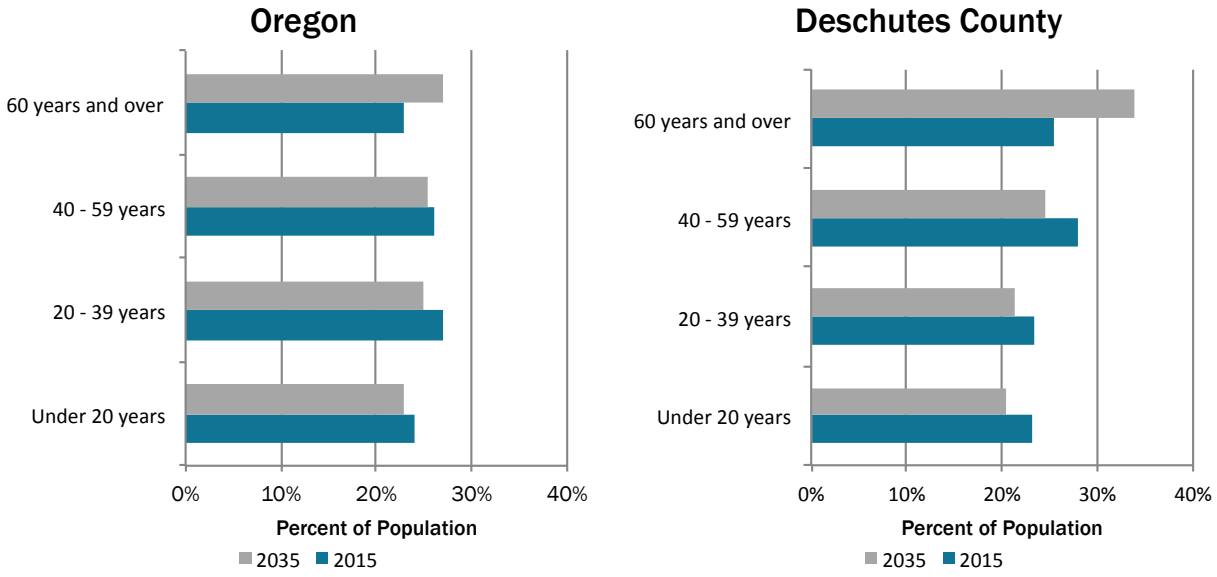


Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Figure 12 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 10), Bend accounts for nearly half of Deschutes County's population. The growth in people over 60 years old in Deschutes County (Figure 12) will be reflected in growth in the percentage of population over 60 years old in Bend.

Figure 12. Forecast of Population by Age, Oregon and Deschutes County, 2015 and 2035



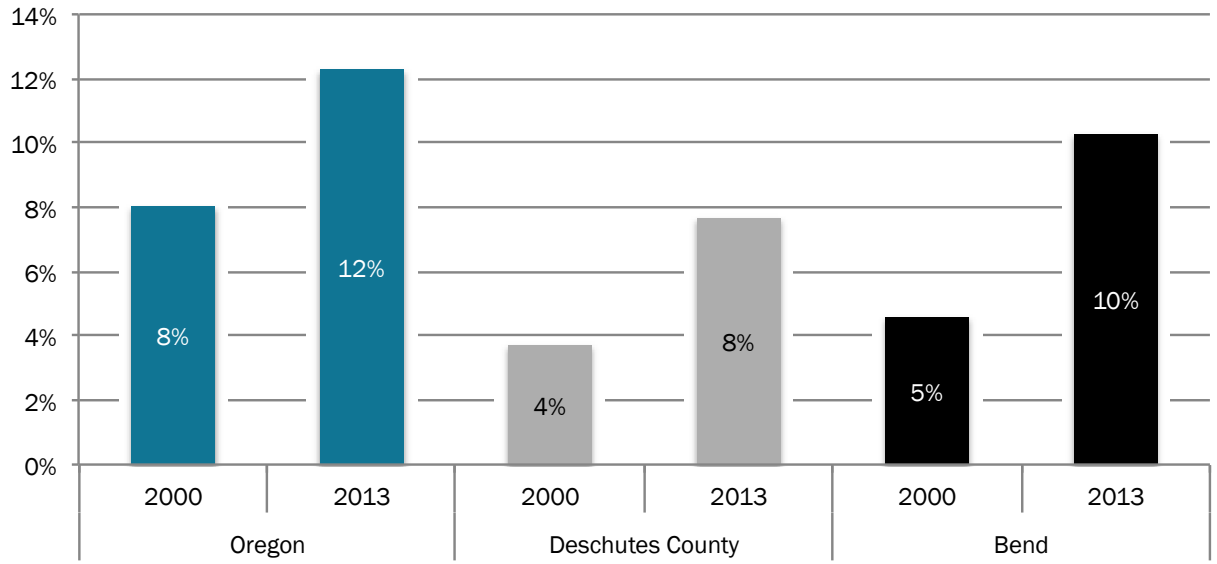
Source: Oregon Office of Economic Analysis.
See the Long-Term County Forecast "2013 Release" through the OEA website:
http://www.oregon.gov/DAS/OEA/Pages/demographic.aspx

[36] 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 13 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 13. 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

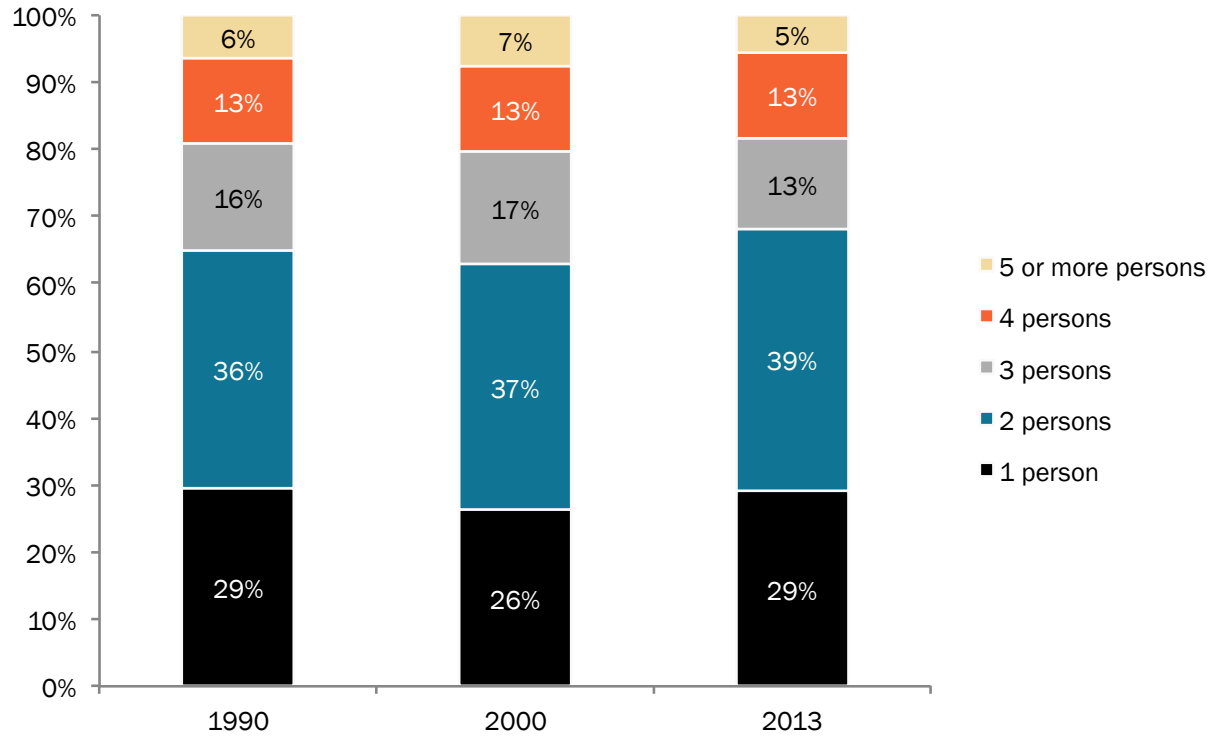
Household Size and Composition

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 14 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.

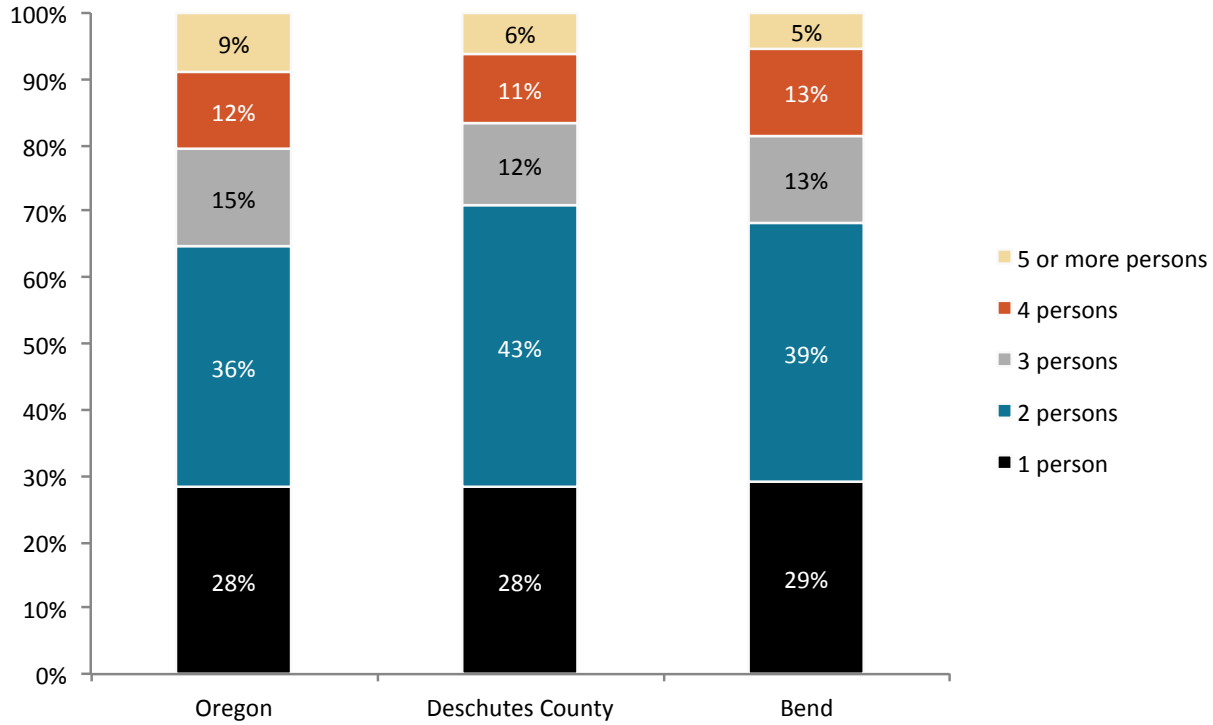
Figure 14. Households by Household Size, Bend, 1990, 2000, and 2013



Source: 1990 and 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Figure 15 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 15. Households by Household Size, Oregon, Deschutes County, Bend, 2013

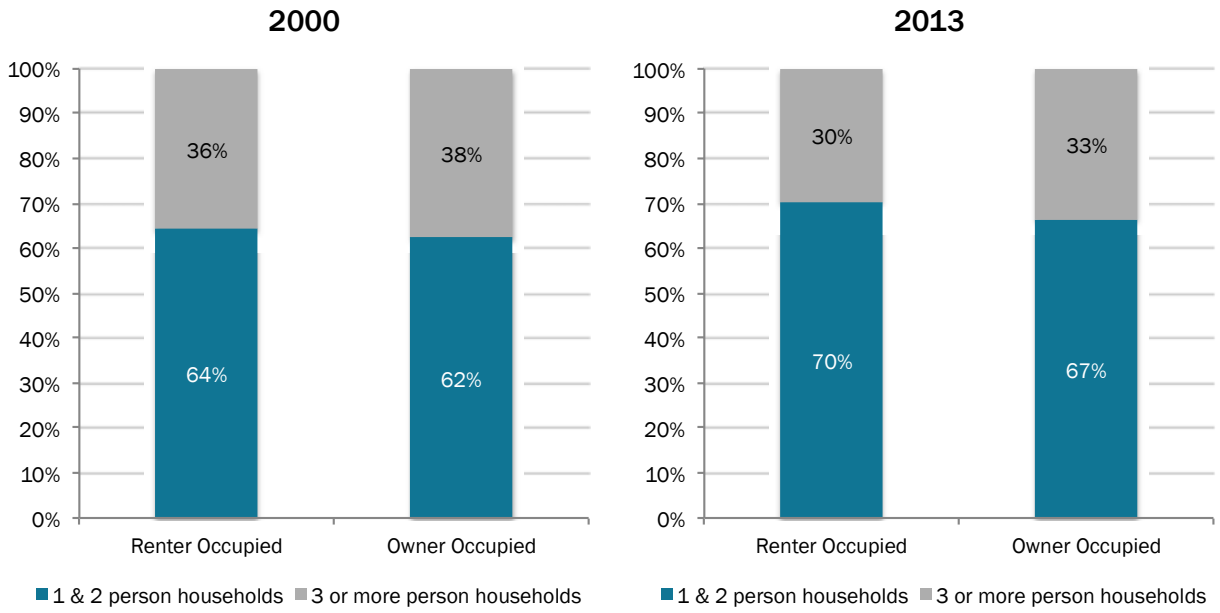


Source: 2013 American Community Survey 1-Year Estimates

Figure 16 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 16. Mix of Households by Tenure and Household Size, Bend, 2000 and 2013



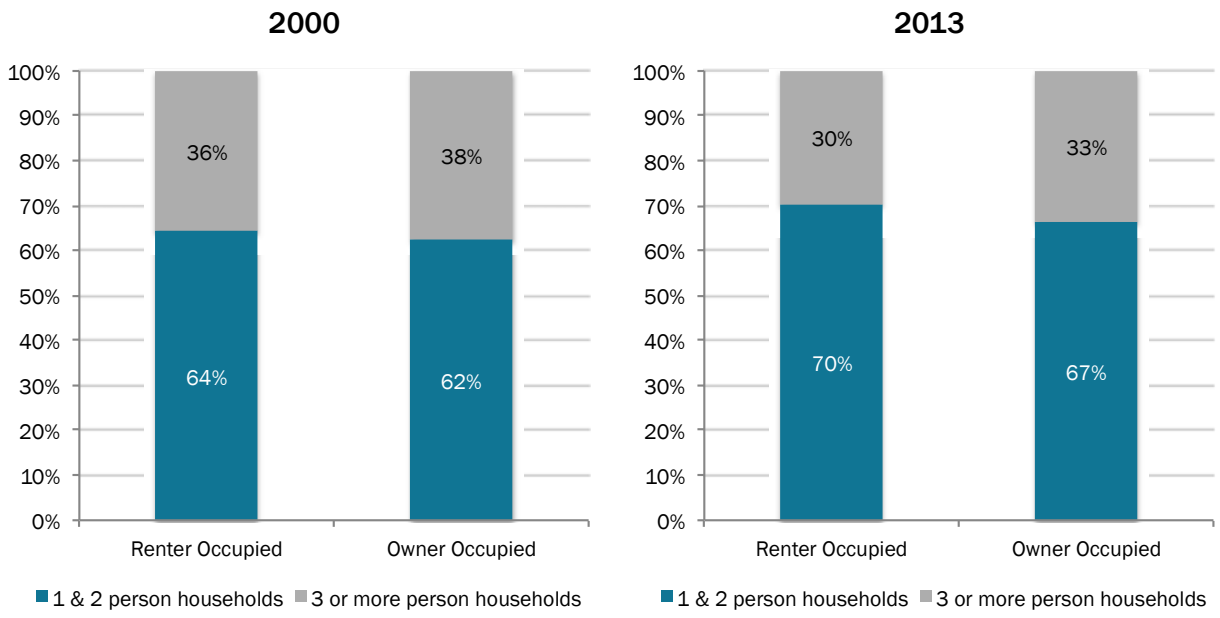
Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

Household Composition

Figure 17 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 17. Household Composition of Oregon, Deschutes County, and Bend, 2013

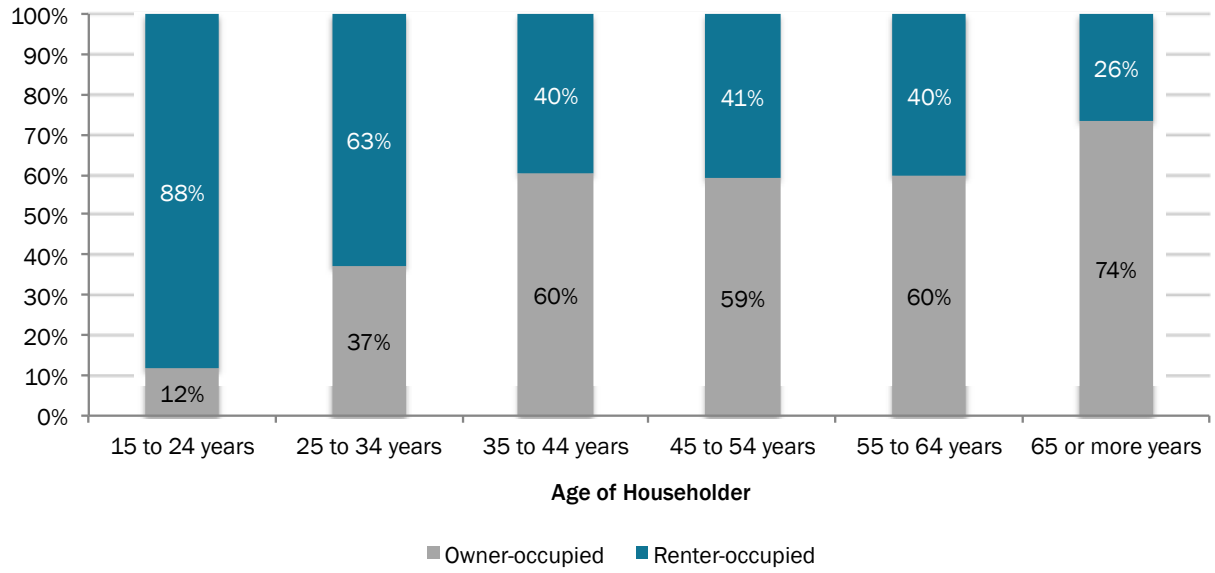


Source: American Community Survey 2013 1-year Estimates

Householder Age

Figure 18 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.

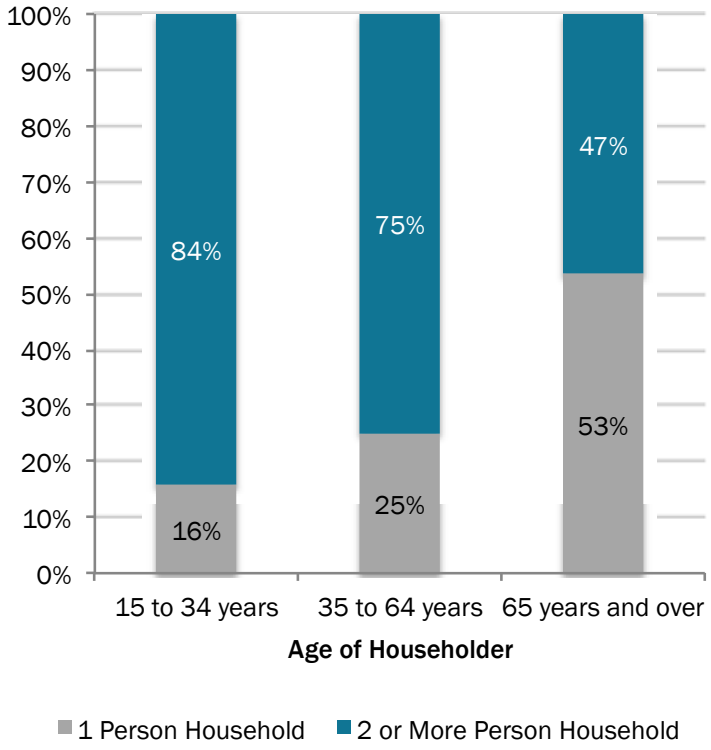
Figure 18. Households by Age of Householder and Tenure, Bend, 2011-2013



Source: 2013 American Community Survey 3-Year Estimates

Figure 19 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.

Figure 19. 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]

[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.

[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.

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%

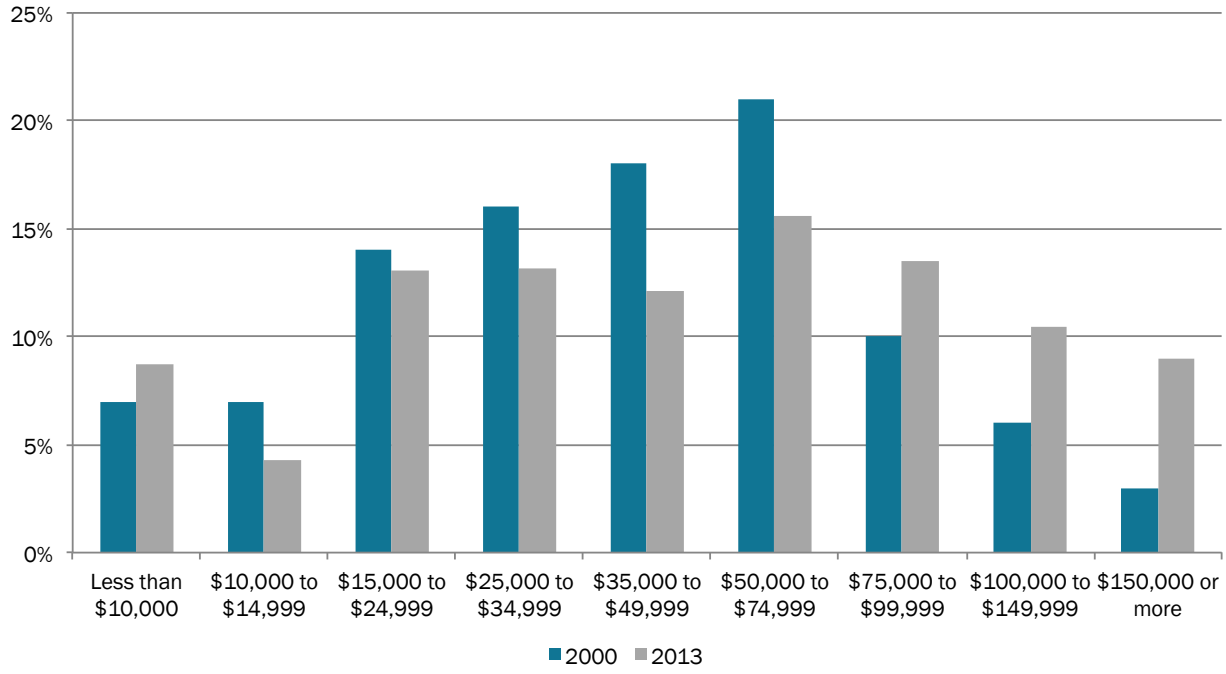
Source: 2000 Census and American Community Survey 2013 1-year Estimates

[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 20 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.

Figure 20. 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 21 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.

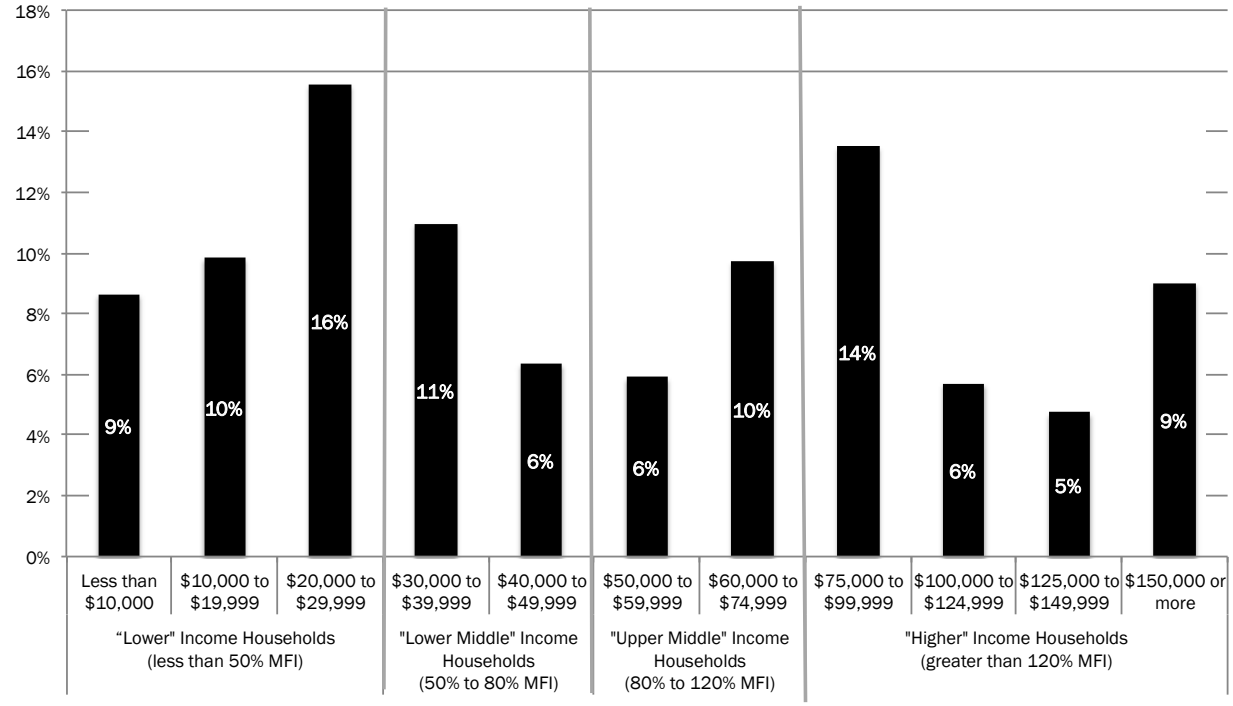
- Households in the "lower" category are those that have household incomes of less than $29,850 (50% of MFI); these households represent 34% of all households in 2013. These households are generally considered "low-income" and may be eligible for government-subsidized housing. The types of housing that these households can afford

[70] HUD publishes Median Family Income by county each year. http://www.huduser.org/portal/datasets/il/il13/index.html

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.
- 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 21. Distribution of Households by Income Level, Bend, 2013

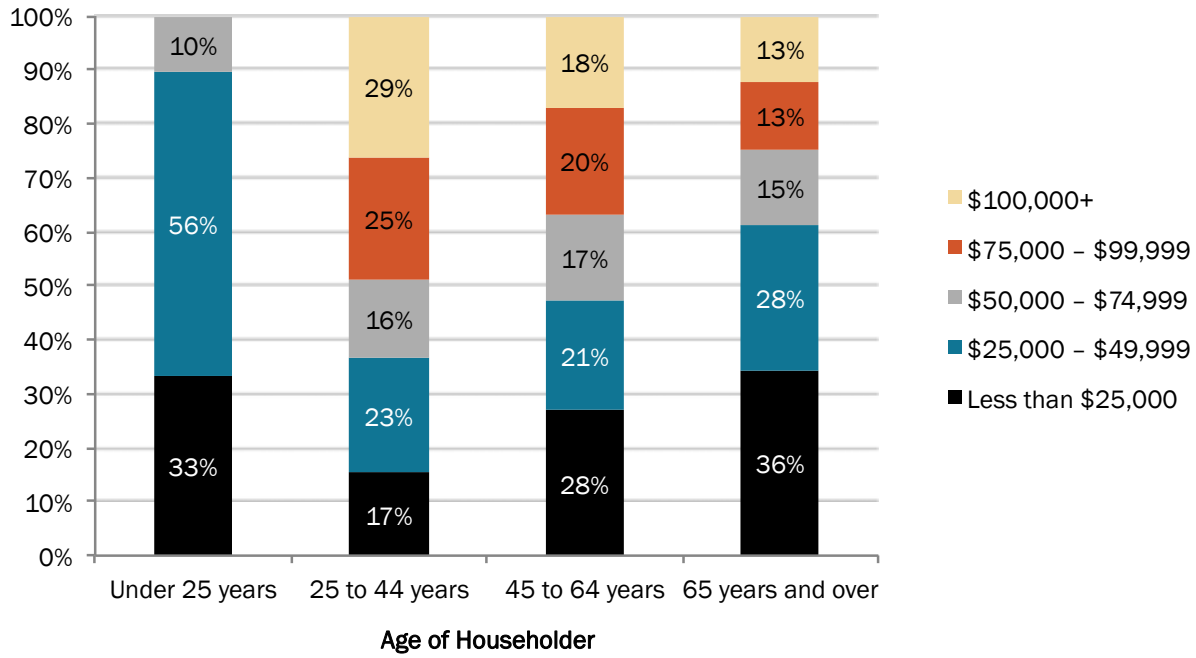


Source: 2013 American Community Survey 1-Year Estimates

Figure 22 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 22. Distribution of Households by Household Income and Age of Householder, Bend, 2013

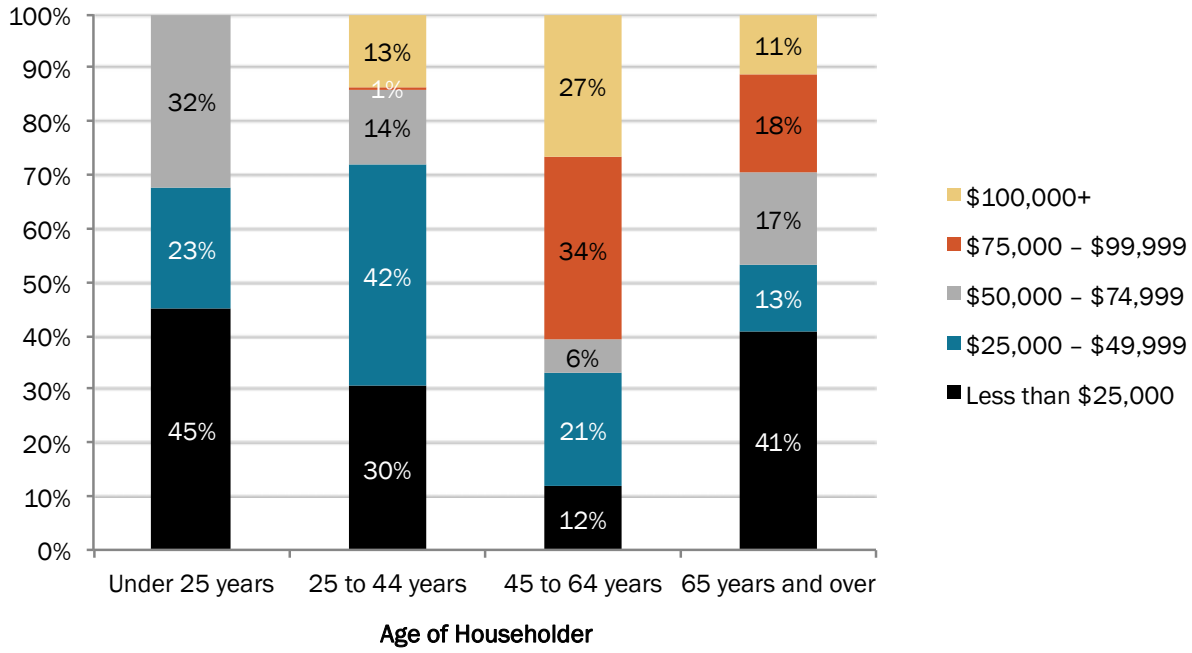


Source: 2013 American Community Survey 1-Year Estimates

Figure 23 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 23. Distribution of Hispanic Households by Household Income and Age of Householder, Bend, 2009-2013

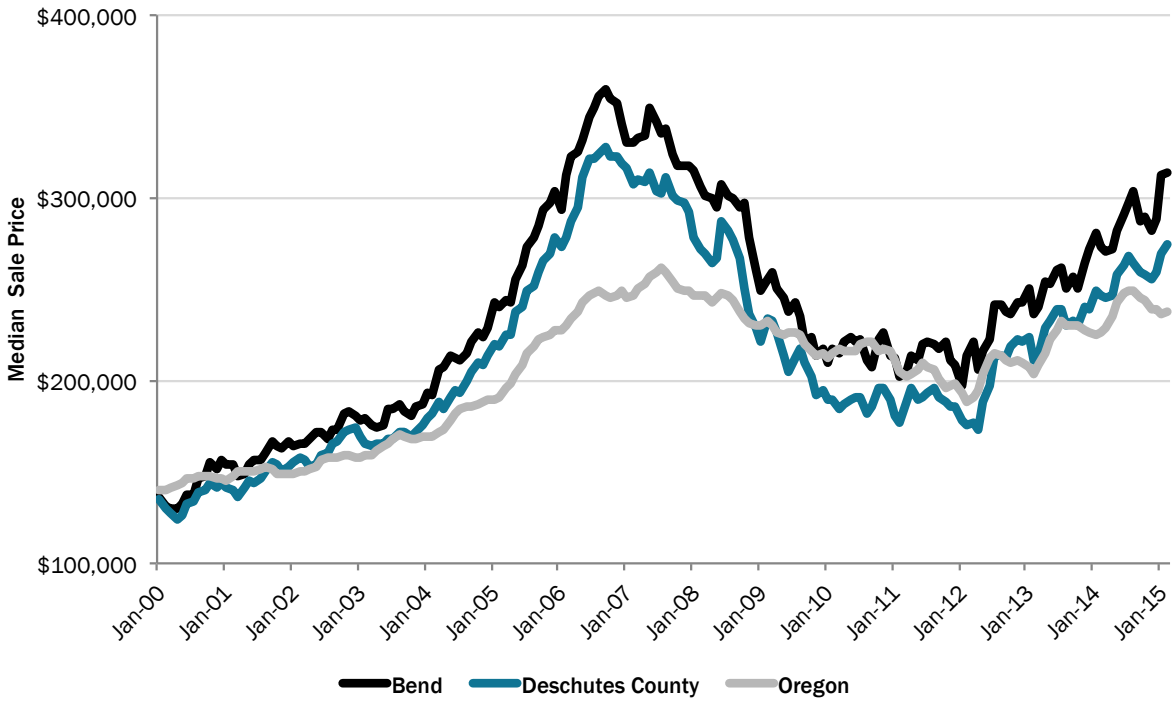


Source: 2013 American Community Survey 5-Year Estimates

Housing values

Figure 24 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).

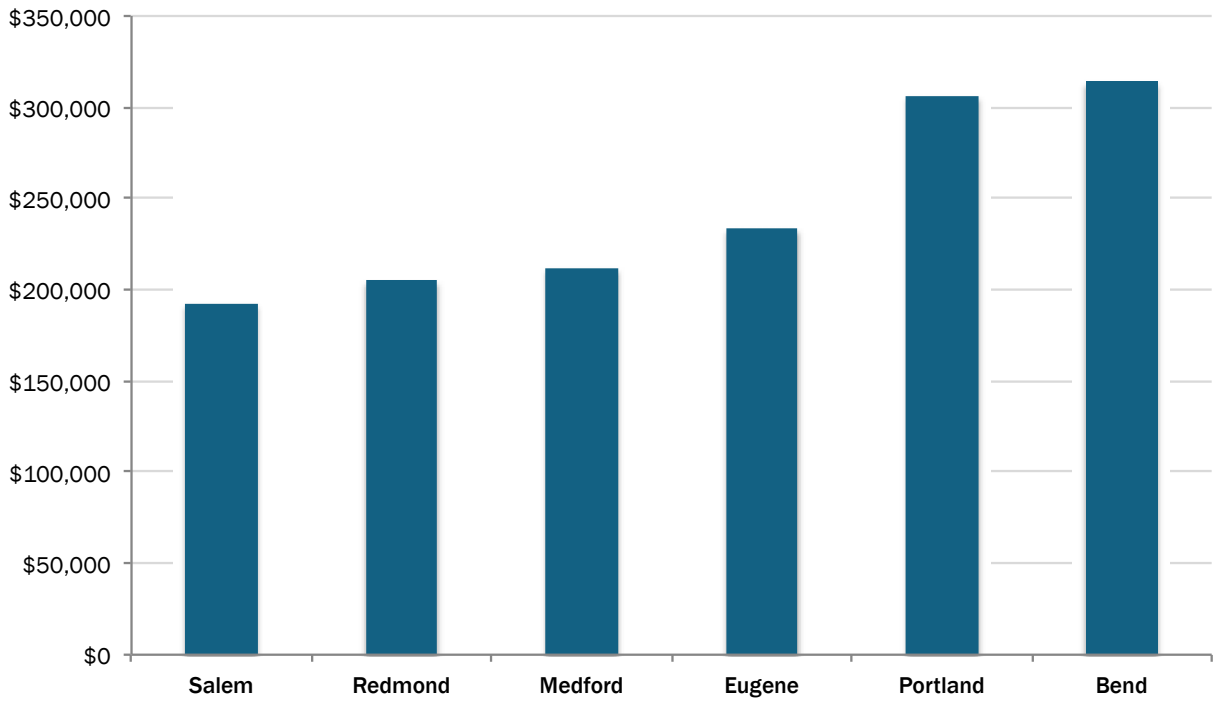
Figure 24. Median Sales Price, Oregon, Deschutes County, Bend, Jan 2000 through Feb 2015



Source: Zillow Real Estate Research

Figure 25 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. Between February 2015 and April 2016, median home sales prices in Bend increased an additional 8% ($24,600) to a median of $347,975.

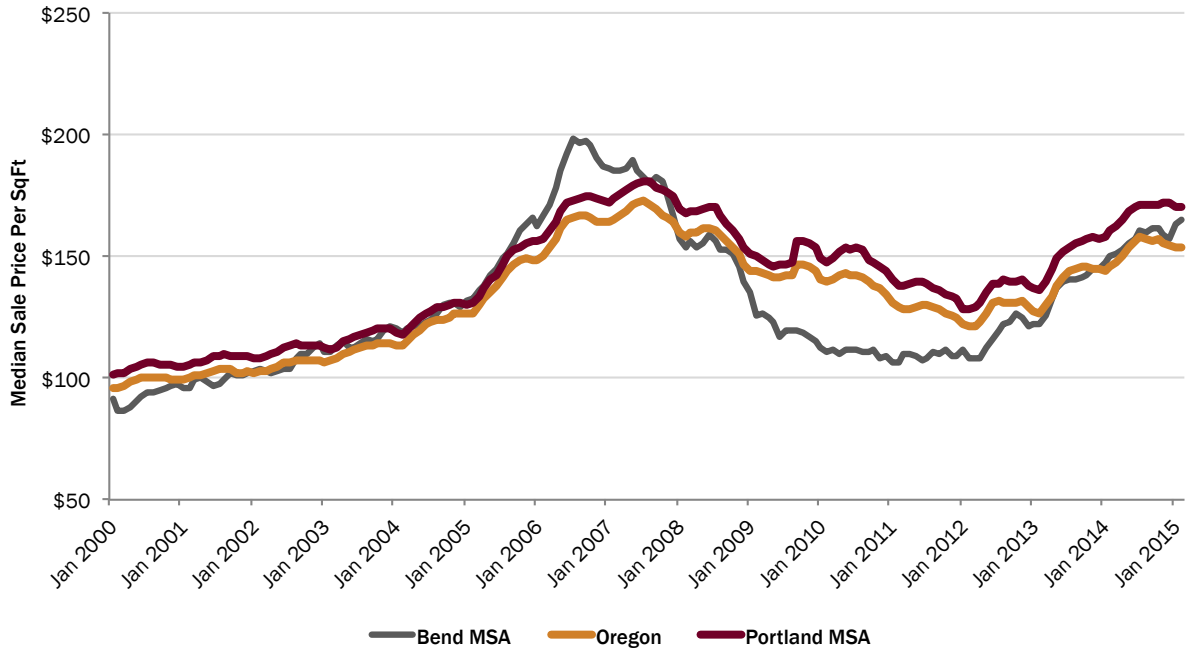
Figure 25. Median Home Sales Price, Bend, Portland, Eugene, Medford, Redmond, Salem, February 2015



Source: Zillow Real Estate Research.

Figure 26 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).

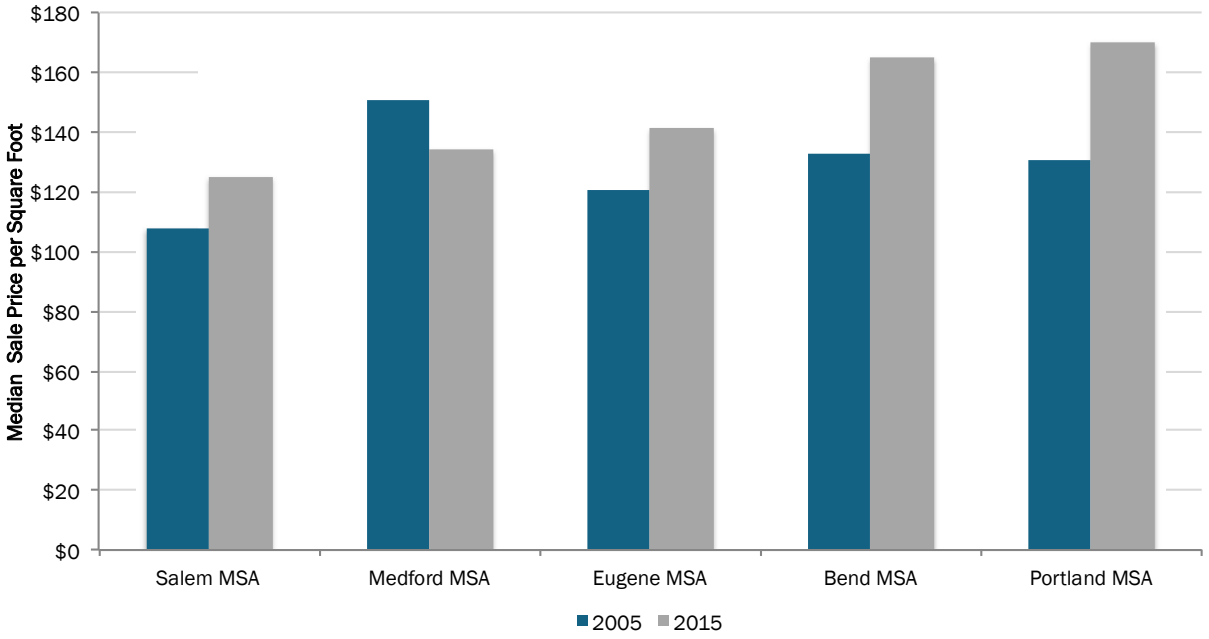
Figure 26. Median Sales Price per Square Foot, Bend, Oregon, and Portland, Jan 2000 - Feb 2015



Source: Zillow Real Estate Research
MSA is metropolitan statistical area. The Bend MSA is Deschutes County.

Figure 27 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 27. 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	

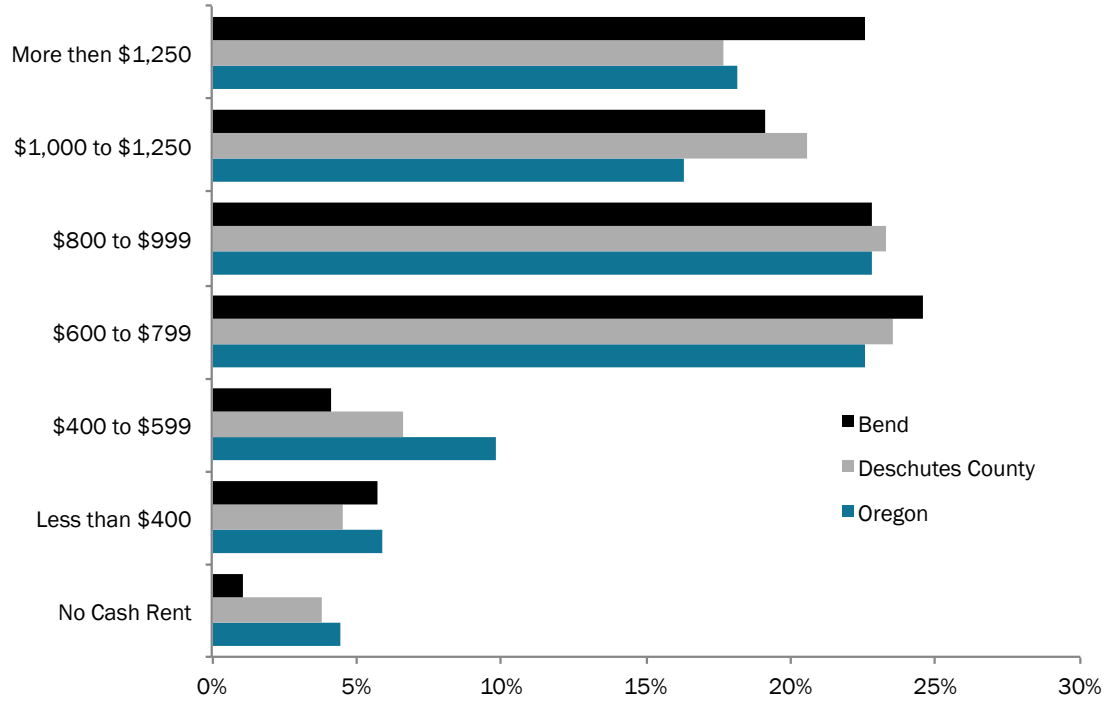
Source: 2000 Census SF3, 2013 ACS 1-Year Estimates

Housing rental costs

Figure 28 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 28. 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

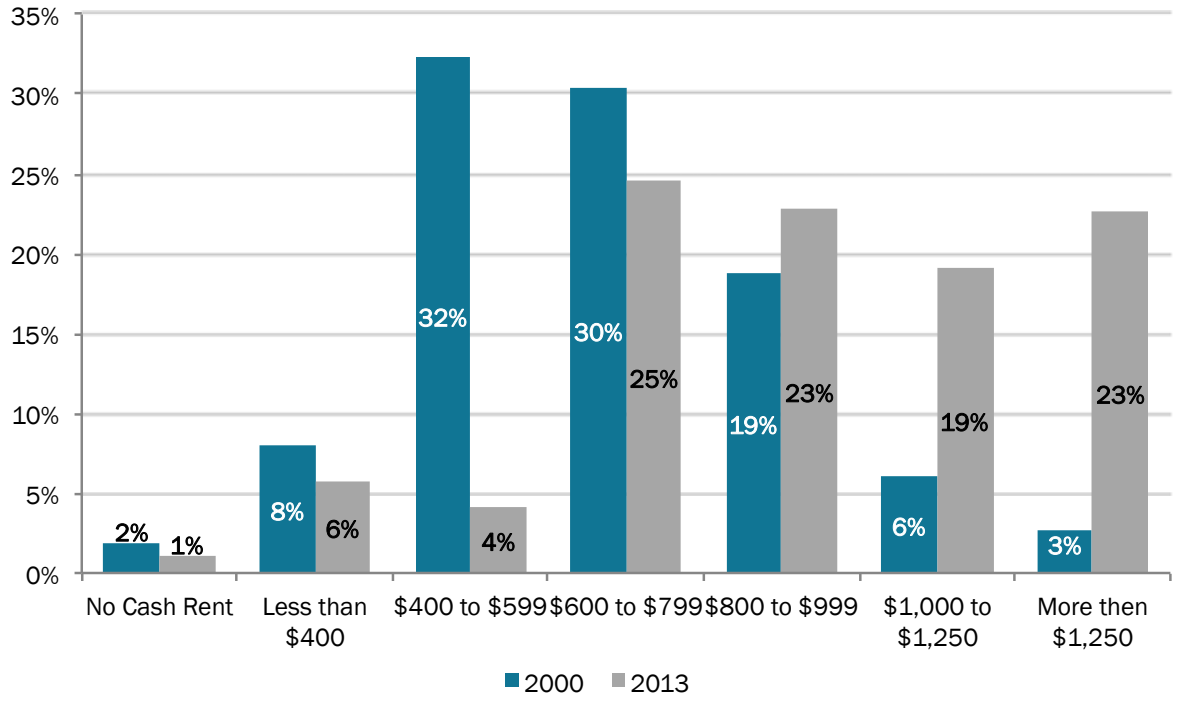
	2000	2013	Change, 2000 to 2013	% Change, 2000 to 2013
Oregon	$837	$877	$40	4.8%
Deschutes County	$869	$918	$49	5.6%
Bend	$876	$928	$52	5.9%

Source: 2000 Census American Community Survey 2013 1-year Estimates

Figure 29 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 29. Gross Rent in Bend, 2000 and 2013



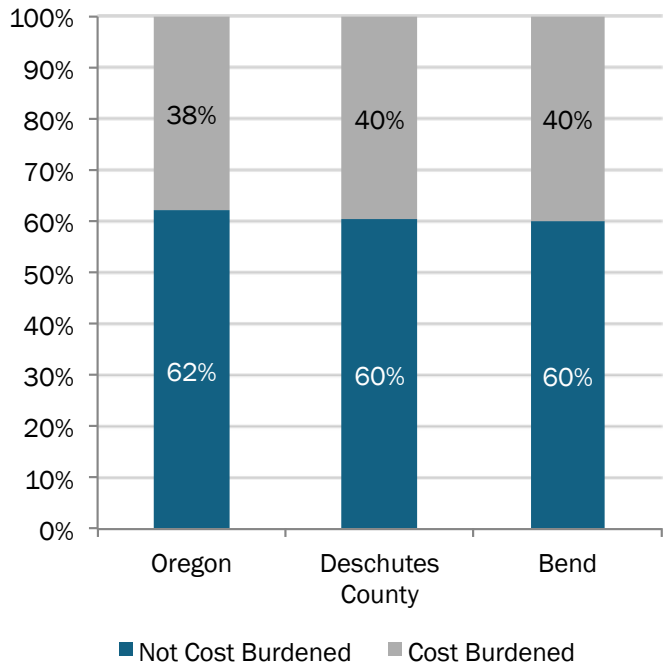
Note: The number of units included in this table includes all types of units available for rent in Bend in 2000 and 2013.
Source: 2000 Census SF3, 2013 American Community Survey 1-Year Estimates

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 30 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.

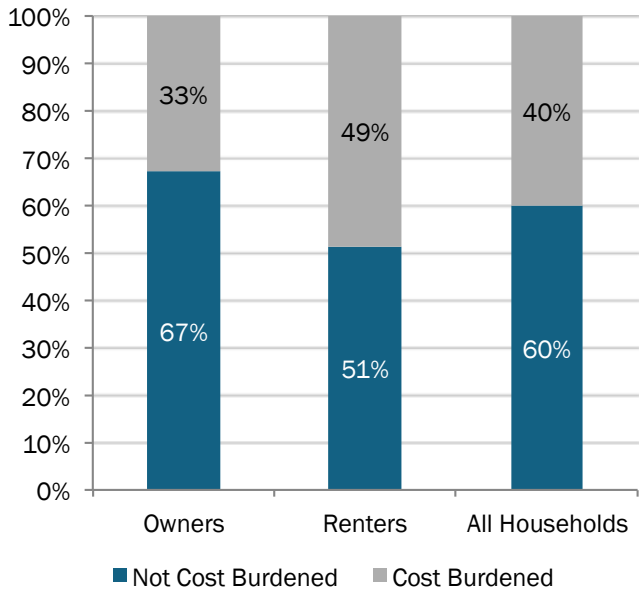
Figure 30. Cost Burdened, Oregon, Deschutes County, Bend, 2013



Source: American Community Survey 2013 1-year Estimates

Figure 31 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.

Figure 31. 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. Incomes are based on household income for all wage-earners in the household.

Table 13 shows that a typical family of four must earn $15.44 an hour to be able to afford a two-bedroom unit. While Table 13 illustrates housing affordability as one wage, the income necessary to afford a two-bedroom unit (i.e., $15.44 per hour or about $32,000 per year) could be earned by any number and combination of workers in the household (i.e., a full-time worker earning $9.50 per hour and a part-time worker earning minimum wage).

Table 13. Affordable Housing Wage and Rent Gap for Households based on Household Income, 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.

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

[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.

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.

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. The analysis in Table 14 and Table 15 show that Bend has unmet demand for lower-cost housing types, such as multifamily housing.

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 none 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.[72]

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.

[72] The manufactured home park density bonus program is part of the Manufactured Home Park Redevelopment Overlay in Bend Development Code 2.7.900. Bend's General Plan includes a policy (number 3) that says "Density bonuses may be considered as an incentive to providing affordable housing."

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). Between February 2015 and April 2016, median home sales prices in Bend increased an additional 8% ($24,600). 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.

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.

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.[73]

- 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.[74]
- 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.

[73] 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.

[74] 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.[75]

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.[76] 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

[75] See Final Decision of the City of Bend Hearings Officer on PZ-14-0210.

[76] 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. The large increase in multifamily building permits issued since 2013 (Figure 5) supports this conclusion.

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.[77]
- 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

[77] The population forecast that is the basis of the forecast of new dwelling units in Table 6 was developed before OSU's plans for 5,000 students in Bend. However, when compared with the new population forecast for Bend by Portland State University in 2015, the forecast used as the basis of Table 6 and the new forecast (which includes OSU's plans) show very similar rates of growth. In this analysis, we assume substantial growth in Millennials as a result of OSU expansion, with the implications for housing need described above. As a result, it is reasonable to conclude that the population and housing forecast in this analysis account for housing needs of new students at OSU.

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 13,770 additional dwellings for the remainder of the 2008-2028 forecast period, between 2014 and 2028[78].

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	7,574	55%
Single-family attached	1,668	112	1,377	10%
Multi-family	5,838	389	4,819	35%
Total	16,681	2,912	13,770	100%

Source: ECONorthwest

Note: The numbers do not balance going across because the needed mix was applied to the first and third columns, while the units permitted column reflects the actual percentage of what was permitted from 2009-2014.

[78] See meeting packets for the Residential TAC dated August 25, 2014 and January 26, 2015

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 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 was determined through additional analysis of future development patterns. The *Bend Urbanization Report* (in Chapter 4 of the Report) provides information and analysis of efficiency measures that will increase housing density in Bend over the 2014-2028 period. **Bend's needed density on residential land for the 2014-2028 period is 7.2 dwelling units per net acre, just over a 25% increase over Bend's historical residential densities over the 1998-2008 period of 5.7 dwelling units per acre (Table 5).**

Bend's future housing densities will increase, in part, as a result of an increase in the percentage of single-family attached and multifamily housing developed over the 2014-2028 period. These are higher density residential housing types, which will increase overall average housing density. However, Bend will need to increase densities developed in the RL and RH zones. The historical densities in the RL zone (2.1 dwelling units per net acre) were low for residential development in an urban area. In addition, the historical density of development in the RH zone (16.9 dwelling units per net acre) was low for the densities that Bend currently allows in the RH zones. The *Bend Urbanization Report* describes the efficiency measures that the City is proposing that will increase development densities in the RL zone and in the RH zones.

In addition, an increase in housing in commercial and mixed use zones at high densities (close to 50 units per net residential acre, including land developed with vertical mixed use buildings) will increase future housing densities overall. The *Bend Urbanization Report* describes the

areas where new mixed use zones, plan designations, and special plan districts are proposed as part of the set of efficiency measures proposed for adoption with the UGB.

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. These households can afford to live in any of Bend's needed housing types: single-family detached housing, townhouse, and multifamily housing. Their choice of what type of housing will depend on their preference. Some, perhaps most, will choose to live in single-family detached housing. However, as discussed previously, some of these households may prefer to live in single-family attached or multifamily housing (e.g., a household that prefers to have little or no yard or a household that prefers to live close to services).

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 many households may prefer to live in single-family detached housing, they may be able to afford to live in single-family attached or multifamily 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.[79]

As a result, we conclude that Bend will continue to have demand for single-family detached housing and increased demand for single-family attached and multifamily housing. These conclusions support for needed mix shown in Table 17 and shift from the historical mix in Bend (Table 3). The large increase in multifamily building permits issued since 2013 (Figure 5) supports this conclusion.

[79] 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	2,092	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.[80] In a 2011 memorandum to the Remand Task Force, staff summarized the issue as follows:

> "Findings adopted with the 2009 UGB amendment estimated that second homes could be expected to absorb 500 acres of residential land during the 2008-28 planning period. This estimate was based on evidence in the record that the number of second homes forecasted to develop in the future could be expressed as a proportion of total housing units for permanent residents. Specifically, the City estimated that new second homes, equivalent to 18% of needed housing units, could be expected to be built in Bend during 2008-28. This would amount to slightly over 3,000 units. Based on an average density assumption of 6 units per acre, these second homes would occupy 500 residential acres that would otherwise be available for permanent residents (see Record p. 7692). The total amount of residential acres needed for the planning period was adjusted to include these 500 acres (see Record p. 1058)."

In summary, LCDC accepted the City's findings on this issue, and the factual base which supports them. LCDC added:

> "If during the remand process the density assumption of 6 units/acre for second homes is revised, the 500-acre estimate adopted in 2009 will be revised upward or downward accordingly."

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[81].

[80] The memorandum titled *Rationale for Second Homes Land Absorption Estimate*, April 24, 2008, documented the analysis for second homes.

[81] See meeting packet for January 26, 2015 Residential TAC meeting – http://bendoregon.gov/Modules/ShowDocument.aspx?documentid=20303.

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.[82] 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.

The City has taken several actions to encourage the development of needed government assisted housing. In June 2006, the City Council passed Ordinance NS 2012 through which the City established a fee to provide funding for affordable housing and dedicating that fee to the development of affordable housing units within the City of Bend. The fee is one-third of 1% of permit valuation for all building permits, and assessed at the time of application of a building permit. In addition to the affordable housing fee, the City has established an incentives program for developers of affordable housing, including: expedited review and permitting and systems development charges (SDCs) exemptions for affordable housing projects. Since the start of the program in 2006, the City has used the revenues from the building permit fee to fund the construction of over 600 units of affordable housing.

In addition to the Affordable Housing Program, the City is an entitlement community under the Federal Community Development Block Grant (CDBG) program. One of the requirements for participating is the development and approval of a Consolidated Plan. The most recent Consolidated Plan for Bend was adopted in 2014 for the 2014-2019 period[83]. One of the purposes of developing the plan is to demonstrate where CDBG funds will be spent and what outcomes will be pursed with these funds. In the current Consolidated Plan (See Pages 98, 121), the City established a goal of the construction of 200 rental units and 50 ownership units of housing.

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[82] 2000 Decennial Census

[83] Official Notice – 2014-2019 City of Bend Consolidated Plan, available online through this link: http://www.bendoregon.gov/modules/showdocument.aspx?documentid=16442.

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 Density Residential (RM)[84]. 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,[85] 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 13,770 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

[84] See Bend Development Code (BDC) Table 2.1.200 – Permitted Land Uses

[85] Oregon Housing and Community Services, Oregon Manufactured Dwelling Park Directory, http://o.hcs.state.or.us/MDPCRParks/ParkDirQuery.jsp

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 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 (13,770 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. Development of new manufactured parks and denser affordable housing are supported by Bend's existing development policies. [86]

[86] The density bonus program for redevelopment in manufactured homes in parks is part of Bend Development Code in section 2.7.900. Bend's General Plan includes a policy in the Housing Chapter (number 3) that says "Density bonuses may be considered as an incentive to providing affordable housing."

Summary of All New Housing Units

Table 20 builds from Table 18 to show all new housing units forecast in Bend, including needed housing, units for group quarters, and second homes. Table 20 shows housing demand for the following types of housing:

- Needed housing for 2014-2028 (Table 18)
- Second homes (assumed 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

Table 20. Summary of All New Housing Units by Type and Category, Bend, 2014-2028

	2014-2028 Needed Housing Units		2014-2028 Needed Group Quarter 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%
Multi-family	4,819	35%	461	1,051	6,331	37%
Total	13,770	**100%**	461	3,003	17,234	**100%**

Source: ECONorthwest

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 within the current UGB. 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 21 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 21. Base Case Housing Capacity

Housing Type	New Units	Mix Based on Capacity
Single-family detached	6,496	65%
Single-family attached	498	5%
Multi-family	3,045	30%
	10,039	**100%**

Source: "Draft Analysis of Current Urban Growth Boundary – Base Case and Scenarios" memorandum to the Residential and Employment Technical Advisory Committees, dated January 21, 2015. Table 3.

Residential Land Sufficiency

Table 22 compares the Base Case capacity with demand for housing. Table 22 shows:

- Capacity of Bend's residential land under the Base Case scenario (Table 21)
- Housing demand for the following types of housing:
    - Needed housing for 2014-2028 (Table 18)
    - Second homes (assumed 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 7,194 new dwelling units. Each category of housing shows a deficit in the Base Case capacity estimate.

Table 22. Base Case Residential Land Sufficiency, Bend, 2014-2028

	Net New Housing Units Capacity (Base Case)	Total Housing Demand	Comparison (Capacity *minus* Total Demand)	
			Residual Housing Need	% of Housing Need Met
Single-family detached	6,496	9,225	2,729	70%
Single-family attached	498	1,677	1,179	30%
Multi-family	3,045	6,331	3,286	48%
Total	**10,039**	**17,233**	**7,194**	**58%**

Source: ECONorthwest

Efficiency Measures (Post-Policy Capacity)

The Bend Urbanization Report provides an overview of amendments to the Bend Development Code that are being updated as part of the Bend UGB process to ensure efficient use of land within the current UGB prior to expanding the boundary. The package of land use efficiency measures that will be adopted with the HNA include: increasing the maximum density in the RL zone and increasing the minimum density in the RS zone, allowing a wider range of housing types in the RS zone, reducing minimum lot sizes for some housing types in certain zones, providing new mixed-use zones, targeted revisions to parking standards, and other policy changes.

Table 23 shows the increase in housing capacity as a result of the efficiency measures. Even with this additional capacity, Bend has a residual housing need that cannot reasonably be met within the UGB.

Table 23. Housing Capacity with Efficiency Measures Compared to Housing Needs by Housing Type, Bend, 2014-2028

Housing Type	Housing Unit Capacity			Total Housing Need	Residual Housing Need	Percent of Housing Need Met
	New Housing Units (Base Case)	New Housing from Efficiency Measures	Total New Housing Units			
Single Family Detached	6,496	103	6,599	9,225	2,626	72%
Single Family Attached	498	541	1,039	1,677	638	62%
Multi-Family	3,045	1,267	4,312	6,331	2,019	68%
Total	**10,039**	**1,911**	**11,950**	**17,233**	**5,283**	**69%**

Source: ECONorthwest

Employment Land Needs in Residential Areas

The *Bend Urbanization Report* provides details about employment land needs in residential areas. In the Base Case, approximately 98 jobs are expected to be accommodated in the following zones: RS, RM, and RH. See the *Bend Urbanization Report* for more information.

Conclusions

The conclusions of the housing needs analysis are:

- **Bend's needed housing mix shows an increase in need for denser housing types, such as single-family attached and multifamily housing.** The type of housing that is affordable (currently and in the future) to about half of Bend's households is single-family attached or multifamily housing types, with some households able to afford lower-cost single-family detached housing types.
- **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.
- **Bend's needed density is higher than historical densities.** Bend's needed residential density for the 2014-2028 period is 7.2 dwelling units per net acre, a 26% increase over Bend's historical densities over the 1998-2008 period of 5.7 dwelling units per acre. The increase in average density is partially the result of change in the mix of housing, with an increase in the share of denser housing types, and partially the result of policy changes to increase development densities.
- **With efficiency measures, nearly 70% of the total housing growth can be accommodated inside the existing UGB.** With efficiency measures, the housing mix inside the UGB is closely aligned with the overall needed housing mix.
- **Even with efficiency measures, Bend has a residual need for land to accommodate 5,201 housing units outside the UGB.** The proposed UGB expansion has been calibrated to accommodate the needed housing units and housing mix to 2028.

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."[87]

Table A-24. 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.[88]

[87] American in 2013 Focus on Housing and Community, Urban Land Institute

[88] "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."[89]

"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."[90]

- **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."[91]

[89] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[90] "Are Aging Baby Boomers Abandoning the Single-Family Nest?" June 12, 2014. Fannie Mae Housing Insights, Volume 4, Issue 3.

[91] "Home and Community Preferences of the 45+ Population," Keenan Teresa A. November 2010, AARP

Table A-25. 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."[92]
- **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."[93]
- **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

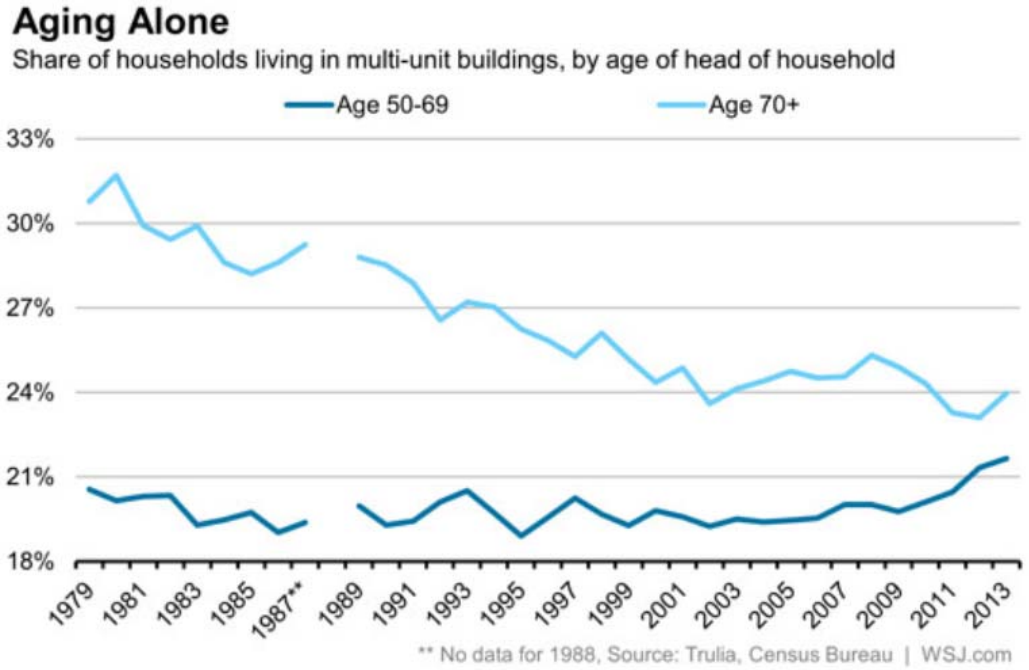
[92] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[93] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

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."[94]

- **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.[95]

Table A-26. Aging Alone



Source: The Wall Street Journal, Trulia, Census Bureau

[94] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[95] "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."[96]
- **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."[97]
- **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

[96] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[97] 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."[98]

- **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."[99]
- **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

[98] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[99] 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)."[100]

- **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."[101]

[100] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[101] American in 2013 Focus on Housing and Community, Urban Land Institute

Table A-27. 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."[102]
- **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."[103]

"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."[104]

- **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."[105]
- **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."[106]
- **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"[107]
- **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

[103] Demographic Challenges and Opportunities for U.S. Housing Markets, March 2012, Bipartisan Policy Center

[104] Joint Center for Housing Studies of Harvard University, The State of the Nation's Housing, 2013

[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] 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."[108]

- **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."[109]
- **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."[110]
- **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.[111]

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."[112]

[108] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[109] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[110] State of Hispanic Homeownership Report, National Association of Hispanic Real Estate Professionals (NAHREP), 2012

[111] 2014 Political Polarization Survey, Table 3.1 Preferred Community, Pew Research Center for the People and the Press, June 12, 2014

[112] American in 2013 Focus on Housing and Community, Urban Land Institute

Table A-28. 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."[113]

[113] *American in 2013 Focus on Housing and Community, Urban Land Institute*

Table A-29. 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-30. 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).

- 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)."[114]

Table A-31. 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.[115]

[114] National Association of Realtors, National Community Preference Survey, 2013

[115] "Reshaping America's Built Environment", Arthur C. Nelson

Table A-32. 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."[116]

- **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."[117]

- **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)."[118]

[116] 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

[117] Business Performance in Walkable Shopping Areas, November 2013, Robert Wood Johnson Foundation.

[118] 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.

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

APPENDIX B. REMAND DIRECTIVES AND STATUTORY REQUIREMENTS

Remand Directives

Table B-1 lists the directives to the City from the Remand. Each of the directives is 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.[119] 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. [120]	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));[121]	Table 6 Table 19

[119] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 31

[120] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 31

[121] 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. [122]	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).[123]	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.[124]	The City is planning for a different housing mix, shown in Table 17.
HNA and Efficiency Measures		

[122] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 32

[123] Remand and Partial Acknowledgment Order ACKNOW-001795, LCDC, November 2, 2010, Sub-Issue 2.3 d, p. 35

[124] 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.[125]	HNA Chapter 3, Step 5.
HNA and Employment Land 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.	HNA Chapter 5 and Urbanization Report.

[125] 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.