Chapter 5: Forecast Land Use

Introduction

Population and employment forecasts are developed to assist in planning for land use, transportation, infrastructure, and other needs. Forecasts are as good as the data and assumptions upon which they are based and require updates as new information becomes available.

Population and employment in the Bend area has shown cycles of slow and fast growth over the decades. During the 1970s, the population in Bend grew by almost 26 percent, while growth slowed somewhat in the 1980s. The 1990s saw another population surge that included the annexation of the entire area contained in the city's Urban Growth Boundary. Rapid population growth continued into the first half of the 2000s, followed by slower growth in the second half due to the recession of 2007-2009. The vast majority of the area's recent population growth is due to in-migration and is intertwined with the region's economic health. Long-term forecasts reflect national trends and show an eventual slowing of this growth. In the latter half of the 2000s, a global financial recession slowed growth nationally and in Bend. The impacts of the recession on population growth and fertility rates were also felt throughout the country.

The number and location of workers and housing have a significant impact on regional travel. Population and employment are essential inputs to the computer-based transportation model. Estimates of base year dwelling unit and employment, and future projections of these same variables are needed to forecast future traffic.
The population of the Bend area is expected to increase by about 50% over the next 18-20 years and nearly 84% in the next 25-30 years. This increase in population will have a significant impact on the transportation system. The transportation needs of the population, however, will be changing as well. An aging population will be more reliant on alternative modes of transportation. At the same time, the rapid growth of the Internet and other technologies may affect travel patterns and behavior. Therefore, not only is the amount of growth important, but also the forecast characteristics of the population.

Population Growth

Historical Census data for Bend, Deschutes County and the state of Oregon is illustrated in Table 5-1. Central Oregon has seen high population growth rates for much of the last 45 years. As shown in Table 5-1, the growth has been especially high in the last 10-15 years.

Table 5-1: Population Growth Summary

Year	1960	1970	1980	1990	2000	2010
Oregon	1,768,687	2,091,533	2,633,156	2,842,321	3,421,399	3,831,074
Change	---	322,846	541,623	209,165	579,078	409,675
% Change	---	18%	26%	8%	20%	12%
Deschutes County	23,100	30,442	62,142	74,958	115,367	157,733
Change	---	7,342	31,700	12,816	40,409	42,366
% Change	---	32%	104%	21%	54%	37%
Deschutes County*	11,137	16,732	31,700	54,489	63,338	81,094
Change	---	5,595	14,968	22,789	8,849	17,756
% Change	---	50%	89%	72%	16%	28%
Bend	11,963	13,710	17,263	20,469	52,029	76,639
Change	---	1,747	3,553	3,206	31,560	24,610
% Change	---	5%	26%	19%	154%	47%

*Deschutes County excluding the Bend population total. Source: US Census Bureau (data for 1960, 1970, 1980, 1990, 2000 and 2010).

Since the late 1990s, the trend of regional population growth being driven by in-migration has continued as demonstrated in Table 5-2. Deschutes County's rate of growth from in-migration has exceeded neighboring counties by growing at a rate of 10 percent over the seven year period. This illustrates that in-migrants play an important role in population growth and will likely play an equally important role in future economic growth.

Table 5-2: Population Change and In-migration trends for Deschutes and neighboring Counties (2000-2007)[1]

County	Total Population change	Natural Increase (births over deaths)	Net Migration (in-migrants over out migrants)
Crook	6,703	284	6,419
Jefferson	3,021	22,770	1,959
Deschutes	45,443	4,805	40,638

Supporting the observation regarding in-migration in Deschutes County, Bend's population is composed mostly of people born in a different state. In 2012[2], only 40.2% of Bend's population was estimated to be born in Oregon. Whereas, in the U.S. and the State of Oregon, 60% and 46% currently reside in the same state they were born. The ACS 2012 data also shows that 53% of in-migration is from people born in other states and 6% from foreign born in-migration. From this, it can be concluded that in-migration to Bend is driven by out-of-state residents, not residents born in Oregon.

One aspect of particular interest to the future transportation needs of the region is the growth in the population of people age 65 and over. The central Oregon region is an attractive location for retirees. Between 2000 and 2010, this age group grew by

[1] City of Bend, Economic Opportunities Analysis, 2008.
[2] American Community Survey, 2012, (Table ACS12:C05002)

approximately 50% in Deschutes County (from 15,089 people to 23,491 people). In Bend, the 65 and over group comprises 12.5% of the population as of 2010.[3]

County Population Forecasts to 2040

In 1997, the Oregon Office of Economic Analysis (OEA) released their long-term population and non-agricultural payroll employment forecasts. The statewide population forecasts are linked to the national projections of population growth, but with a slightly higher rate for Oregon than the nation as a whole. Later that year representatives from Deschutes County, Bend, Redmond, and Sisters – in cooperation with OEA – agreed upon a coordinated County population forecast through the year 2020. In the fall of 2001, the Deschutes County Community Development Department led an effort to coordinate a local population forecast to year 2025. This effort was completed in 2004. The City of Bend then applied average annual growth rates to generate a forecast through year 2030 for use in the transportation analysis for the urban growth boundary expansion process[4]. The long-range population forecasts are shown in Table 5-2.

Table 5-2: Deschutes County 2000-2025 Coordinated Population Forecast

Year	Bend UGB	Redmond UGB	Sisters UGB	Unincorporated County	Total County
2000	52,800	15,505	975	47,320	116,600
2005	69,004	19,249	1,768	53,032	143,053
2010	81,242	23,897	2,306	59,127	166,572
2015	91,158	29,667	2,694	65,924	189,443
2020	100,646	36,831	3,166	73,502	214,145
2025	109,389	45,724	3,747	81,951	240,811
2030	119,009	---	---	---	---

In 2008, an updated Economic Opportunities Analysis (EOA) by the OEA was released. In this update, the EOA made predictions over a 20-year time period ending in 2028 based on Bend's recent economic and demographic trends. The EOA based the forecast based on many factors. Bend's population has grown at approximately 6 percent per year from 1990 to 2008, driven mostly by in-migration from people born in states other than Oregon. Population growth is not driven solely by in-migration from retired persons, but by working-age persons expected to be a part of the economy for decades to come. Baby-boomers will continue to represent the largest peak of population age structure in Deschutes County in the near future, but this peak is followed by a sizable wave of children and grandchildren who will be part of the workforce over the planning period. EOA concluded that population growth in Bend is expected to grow from 69,004 persons in 2005 to 115,063 persons in 2028.

Based on these trends, the Bend Metropolitan Planning Organization (BMPO) and the City of Bend made population forecasts for 2040. By 2040, the population is expected to grow to 140,861 persons within the Bend UGB.

[3] Source: US Census Bureau (data for 2000 and 2010)
[4] The City used annualized growth rates for Deschutes County that were developed by OEA.

The following table summarizes the 2000-2040 updated population forecast from the Office of Economic Analysis and utilized by BMPO and the City of Bend:

Table 5-3: Bend UGB 2000-2040 Population Forecast

Year	Bend UGB	Pop. Growth	%Pop. Growth
2010	76,639		
2028	115,063	38,424	50.1%
2040	140,861	64,222	83.8%

Employment Trends

In recent years, the central Oregon region has undergone a dramatic shift in its economic structure. Due to a reduction in commercial timber available from federal lands, employment in the lumber industry has declined sharply. The region, however, has seen a sizable increase in overall employment. The employment base has greatly diversified over the past 10 years.

Growth in tourism has had a significant impact on both the statewide and local economies. Central Oregon is a major tourist destination. In 2004, Deschutes County ranked fifth in the state for total travel expenditures. Because of its central location to many cultural and recreational activities, the MPO area frequently serves as the home base for tourists during their stay in Central Oregon.

Structural changes in the local economy impact the demand placed on the transportation system. For example, industrial employment generates very few trips per employee while retail employment generates a large number of trips per employee. If, for example, 100 industrial employees are shifted to new retail sector positions, there would be a large increase in trips placed on the transportation system.

In addition, the geographic distribution of retail and service employment is typically more dispersed than traditional, large industrial sites. Because of these factors, future travel demand will change significantly as the economy continues to evolve.

The updated Economic Opportunities Analysis (EOA), released by OEA in 2008, also forecasted employment growth. In this update, the EOA concluded that job growth in Deschutes County is expected to be some of the highest in the state over the next 10 years. Manufacturing is expected to grow statewide and in Deschutes County, but not at levels seen during the 1990s through 2007. Bend is well positioned to grow employment in its targeted economic sectors including: hospitality, higher education, health care, secondary wood products, renewable energy resources, aviation, recreational equipment manufacture, specialty manufacturing, and information technologies. Threats to Bend's economic success include limited land supplies, high housing costs, and lack of workforce housing.

Growth in total employment within the Bend urbanized area is forecast to increase steadily over the next 30 years. Much of this growth is expected to occur in the trade and service sectors. Employment in retail trade is expected to double and growth in wholesale trade is expected to triple by 2040. By far, the maximum growth in employment is expected in Transportation, Communications, Utilities sector (250% growth) and in the Construction industry (228% growth). Service industry employment is projected to grow by 83 percent. Additionally, manufacturing employment is forecast to grow 63% and F.I.R.E. (Finance, Insurance, Real Estate) is forecast to grow 64%. The long-range employment forecasts are shown in Table 5-3.

Table 5-4:

Year	Agriculture/ Forestry	Mining	Construction	Manufacturing	Transportation, Communications, Utilities	Wholesale Trade
2010	406	46	2,311	3,178	1,002	1,001
2040	655	367	7,596	5,197	3,543	3069
Change	+249	+321	+5,285	+2,019	+2,541	+2,068

(cont)

Retail Trade	FIRE	Service	Government	Total Employment
6,288	2,276	22,708	1,547	40,763
12,958	3,741	41,666	1,991	80,783
+6,670	+1,465	+18,958	+444	+40,020

Source: 2010 data from Oregon Department of Transportation (ODOT)

Further details on population and employment data and projection methods are available from the Bend MPO.

Vehicular Travel Demand

Locations with high traffic volumes today are expected to be the locations with the highest traffic volumes in the future. The highest traffic volumes in the region are forecast to occur on Highway 97 (the Parkway). High traffic-volumes are also expected on Highway 20 (3rd Street/Greenwood Avenue), Reed Market Road, 18th Street, O.B. Riley Road, Empire Avenue, and 27th Street. Vehicle miles of travel (VMT) in the MPO are currently (year 2010) estimated to be approximately 108,000 miles during the PM peak hour. By 2040, PM peak hour VMT within the MPO is expected to be approximately 171,500 miles (a 59 percent increase).

Trends in population and employment in the Bend area mirror those of the nation. A variety of societal changes has had a significant impact on transportation demand. Over the last 30 years, an increasing percentage of women have entered the labor force. This contributes to increased demands on the transportation system. National statistics from the Census indicate that over the last 30 years, many transportation-related factors have grown much more rapidly than has the nation's population, which increased by less than 40 percent. The number of workers increased by almost 80 percent, but the number of vehicles per household increased by almost 180 percent. The number of

vehicles per household increased by more than 60 percent, while the number of persons per household fell by 20 percent[5].

Land Use - Transportation Connection

In recent years, several studies have been undertaken to identify the linkages between transportation and land use issues. These studies have generally focused on changing land use distributions along regional transit networks to help decrease automobile travel and increase the convenience of walking, biking, and public transportation. These studies have demonstrated that projected travel demand could potentially be accommodated through means other than building new freeways and adding lanes to existing roads.

The Oregon Transportation Planning Rule (OAR 660, Division 12) was adopted in 1991 to implement Statewide Planning Goal 12 (Transportation). Specific provisions of the TPR include reducing reliance on the automobile, improving mobility and accessibility for bicyclists, pedestrians, and public transportation users, and avoiding air quality problems associated with traffic congestion[6]. While the overall success of the TPR is still being debated, it has helped provide for a coordinated approach to transportation planning in Oregon. Because of the Transportation Planning Rule, multi-modal needs and land use issues are now routinely part of local transportation planning activities.

In March 2013, the Bend Metropolitan Planning Organization (BMPO) published the *Public Transit Plan and Transit Corridor Land Use Assessment*. The document provides an assessment of land use and public facilities opportunities and constraints along potential transit corridors in Bend. Corridors throughout the city were evaluated for a number of elements that would create future opportunities for transit service expansion or upgrades, including residential and non-residential development potential, existing and planned public facilities, existing and future roadway and multimodal improvements, and projected future traffic congestion. Six corridors identified as having significant future transit potential were selected for additional evaluation and consideration as "primary transit corridors." The plan identifies areas to coordinate transit and land use investments; especially along primary transit corridors.

High-density residential development, commercial and employment opportunities are anticipated around primary transit corridors. The *Public Transit Plan and Transit Corridor Land Use Assessment (2013)* forecasts the extent and development intensity anticipated around high-priority transit corridors (primary transit corridors). The following table summarizes current and projected population and employment characteristics within a quarter-mile walking distance of each corridor:

[5] Source: US Census Bureau (2000 and 2010).
[6] Both Goal 12 and the Transportation Planning Rule (OAR 660-012) are available online through http://www.oregon.gov/LCD/pages/index.aspx.

Table 5-4: Summary Statistics for Land Use Analysis Corridors

Corridor	Area[1]	2010 Population	2030 Population	& Pop. Growth	2010 Employment	2030 Employment	% Empl. Growth
27th Street (Wells Acres to Reed Market)	827	3,991	5,917	48%	3,997	4,495	12%
3rd Street (South) (Hawthorne to Murphy)	640	2,184	3,128	43%	3,504	5,191	48%
3rd Street (North) (Hawthorne to Cascade Village)	773	1,155	2,498	116%	5,323	7,842	47%
Greenwood (3rd to 27th)	711	2,804	4,166	49%	2,782	3,285	18%
Galveston (3rd to NW 14th)	481	2,312	2,796	21%	3,984	4,369	10%
Newport (3rd to NW 14th)	475	2,227	2,779	25%	4,588	4,739	3%

Note: *1- Indicates Area of 1/4 mile walking (network) buffer around the corridor. Area represents gross acres.* ***Source:*** *2010 Population from U.S. Census Bureau. 2010 Employment from Oregon Employment Department and Bend MPO. 2030 Population and Employment Projections from Bend MPO.*