

City of Sandy Urbanization Study

Prepared for

City of Sandy

by

ECONorthwest

99 W. Tenth, Suite 400
Eugene, OR 97401
(541) 687-0051

Final Report

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Written by:

Robert Parker AICP, Project Director

Lorelei Juntunen, Project Manager

Beth Goodman, Planner

Kate Coddington, Research Assistant

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ECO Project Number 7082

ECONorthwest

99 W. Tenth, Suite 400

Eugene, OR 97401

(541) 687-0051

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Executive Summary

The *Sandy Urbanization Study* is intended to provide technical analysis supporting the 2009 update of the Sandy Comprehensive Plan. The purpose of this report is to provide the technical analysis required to determine if an Urban Growth Boundary (UGB) expansion is justified. It includes data that the City can use to update the Goal 9, 10, and 14 factual components of the Sandy Comprehensive Plan including the buildable lands inventory. The Executive Summary provides key findings from the Sandy Urbanization Study.

The purpose of the Urbanization Study is to (1) present growth forecasts, (2) inventory how much buildable land the City has, (3) identify housing needs, (4) identify land needed for housing, employment, and other uses, and (5) determine how much land the City will need to accommodate growth between 2009 to 2029.

HOW MUCH GROWTH IS SANDY PLANNING FOR?

Population and employment forecasts provide the foundation for assessing land needs. Table S-1 summarizes population and employment forecasts for the Sandy UGB.

The forecast for 2009 to 2029, developed by the City and coordinated by Clackamas County, projects that the Sandy UGB will grow from 8,034 to 11,023 residents, an increase of 2,989 people at an average annual growth rate of 1.6%. The Goal 14 population safe harbor gives the City (and County) authority to adopt an updated forecast. OAR 660-024-0030 (4) allows the City to forecast to a 20-year period "...by assuming that the urban area's share of the forecasted county population ... will be the same as the urban area's current share of county population."

The employment forecast assumes employment will grow at a rate of 1.6% annually during the 2009-2029 period. The employment forecast was developed using the safe harbor in OAR 660-024-0040 (8) (a) (ii), which allows the City to determine employment land needs based on "The population growth rate for the urban area in the adopted 20-year coordinated population forecast..." The ratio of population to employment will remain stable at 1.83 persons per job over the twenty-year period.

Table S- 1. Population and employment forecasts, Sandy UGB, 2009-2029

Year	Population	Employment	Pop/Emp
2009	8,034	4,394	1.83
2014	8,718	4,757	1.83
2019	9,451	5,150	1.84
2024	10,228	5,575	1.83
2029	11,023	6,036	1.83
Change 2007-2027			
Number	2,989	1,642	
Percent	37%	37%	
AAGR	1.6%	1.6%	

Source: City of Sandy; ECONorthwest

HOW MUCH BUILDABLE LAND DOES SANDY CURRENTLY HAVE?

Sandy has 2,135 acres in tax lots and 998 acres of buildable land within the Urban Growth Boundary (UGB). ECO estimates that about 203 acres of Sandy's buildable land is constrained. The City has about 760 acres of unconstrained buildable commercial, industrial, and residential land within its UGB. The City has 140 vacant unconstrained acres in Commercial Plan Designations, 83.6 vacant unconstrained acres in Industrial Plan Designations, and 536 vacant unconstrained acres in Residential Plan Designations.

Table S- 2. Vacant and partially vacant land by Plan Designation, gross acres, Sandy UGB, 2007

Plan Designation	Tax Lots	Total Acres	Developed Acres	Const. Acres	Buildable Acres	Percent of Total
LDR	191	392.2	13.6	119.6	254.6	33.5%
MDR	43	69.2	1.5	19.3	48.4	6.4%
HDR	29	62.3	0.8	19.2	42.4	5.6%
V	202	232.3	12.1	19.7	200.5	26.4%
V - C	5	11.2	0.8	0.0	10.4	1.4%
V - R-1	133	189.3	10.3	17.5	161.5	21.3%
V - R-2	11	23.8	0.5	2.1	21.1	2.8%
V - R-3	45	7.2	0.3	0.1	6.8	0.9%
C	39	146.5	0.5	15.8	130.1	17.1%
I	30	95.4	2.3	9.6	83.6	11.0%
Subtotal	534	997.9	30.6	203.3	759.5	100.0%

Source: City of Sandy GIS data; analysis by ECONorthwest

HOW MUCH HOUSING WILL THE CITY NEED?

Sandy will need to provide about 1,156 new dwelling units to accommodate growth between 2009 and 2029. About 867 dwelling units (75%) will be single-

family types, which includes single-family detached, manufactured dwellings, townhomes, and condos. About 289 units (25%) will be multi-family housing.

HOW MUCH LAND WILL BE REQUIRED FOR HOUSING?

Table S- 3 shows land demand for residential and other land needs for the 2009 to 2029 period. “Other” land needs are semi-public uses that will locate within land designated for residential uses. The results lead to the following findings:

- The City will need about 226 gross acres for housing uses between 2009 and 2029.
- The City will need about 17 gross acres for public and semi-public uses between 2009 and 2029. These uses often locate on land zoned for residential uses.

Table S- 3. Estimated total residential land need, Sandy UGB, 2009-2029

Land Use	Needed DU	Land Need (Net Acres)	Land Need (Gross Acres)	Percent of Gross Acres
Residential				
Single-family detached	740	134.5	179.3	74%
Manufactured in Parks	12	1.4	1.9	1%
Single-family attached	115	11.5	15.3	6%
Multifamily	289	22.2	29.6	12%
Subtotal - Residential	1,156	169.6	226.1	93%
Other (Semi-Public)			17.4	7%
Total Land Need			243.5	100%

Source: ECONorthwest

Notes: Land need in gross acres uses the OAR 660-024-0040(9) safe harbor assumption of 25%.

Sample net to gross calculation for single-family detached: Gross acres = net acres / (1-0.25). For example: 179.3 gross acre = 134.5 net acres (179.3*(1-.25)). To convert from net to gross: 134.5 net acres = 179.3 gross acre (134.5/(1-0.25)).

Table S- 4 shows the capacity for residential development by plan designation (e.g., the number of dwelling units that can be accommodated by vacant and partially-vacant residential land in the UGB). The results lead to the following findings:

- Sandy has a need for additional residential land. The Sandy UGB has enough land for 3,114 new dwelling units. The housing needs forecast in Chapter 4 projected a need for 1,156 dwelling units.
- The Low Density Residential designation has a surplus of approximately 180 gross acres (895 dwelling units).
- The Medium Density Residential designation has a surplus of approximately 17 gross acres (96 dwelling units).

- The High Density Residential designation has a surplus of approximately 19 gross acres (192 dwelling units).
- The Village designation has a surplus of approximately 144 gross acres (722 dwelling units) in areas zoned for R-1 development.
- The Village designation has a deficit of 6 gross acres (57 dwelling units) in areas zoned for R-3 development. This deficit can be accommodated within the 18-acre surplus of other lands designated High Density Residential.

Table S- 4. Residential capacity for needed dwelling units by plan designation, Sandy UGB, 2009-2029

Plan Designation	Title	Capacity (Dwelling Units)	Needed Units	Surplus (Deficit) DU	Gross Acres Surplus (Deficit)
LDR	Low Density Residential	1,311	416	895	179.7
MDR	Medium Density Residential	316	220	96	16.6
HDR	High Density Residential	388	196	192	19.1
V	Village	1,099	324		
	Village - R-1	889	167	722	144.9
	Village - R-2	143	39	104	18.0
	Village - R-3	61	118	(57)	(5.7)
Total		3,114	1,156	1,952	372.6

Source: ECONorthwest

HOW MUCH LAND WILL BE REQUIRED FOR EMPLOYMENT

Employment forecasts indicate that Sandy will add 1,642 jobs between 2009 and 2029. The results show that Sandy has a surplus of employment land for the 2009-2029 period. Following are a few implications:

- The City will need about 108 gross acres for all employment uses between 2009 and 2029.
- The City will need about 94 gross acres for retail and services between 2009 and 2029.
- The City will need about 14 gross acres for industrial development between 2009 and 2029.

Table S-5. Forecast of land needed for employment, Sandy UGB, 2009-2029 (gross acres)

Plan Designation	Land Demand	Supply 2007	Surplus (deficit)
Village Commercial	9.4	10.4	1.0
Commercial	84.6	134.2	49.6
Industrial	14.4	83.6	69.2
Total	108.4	228.2	119.8

Source: ECONorthwest

HOW MUCH LAND WILL BE REQUIRED FOR PUBLIC AND SEMI-PUBLIC USES?

Sandy will need to provide land for uses other than housing and employment. Public facilities such as government, churches, parks, hospitals, and other non-profit organizations will expand as population increases. Based on expected population growth, current public and semi-public uses, and established level-of-service for parks, Sandy will need an additional 17.4 gross acres (6.0 acres per 1,000 persons) for public and semi-public uses over the planning period.

IS THERE JUSTIFICATION FOR A UGB EXPANSION?

The City does not have a demonstrated need to expand its UGB for each type of land within the UGB. Table S- 6 provides a summary of land needed by land-use type. The results lead to the following findings:

- Sandy has a surplus of 376.7 gross acres of residential land.
- Sandy has a need for 17.4 gross acres for semi-public uses. Many of these uses, such as churches, may be accommodated on land zoned for residential uses. Some of these uses may be accommodated on land zoned for commercial uses, such as nonprofits. Sandy has sufficient land in other designations to meet this need.
- Sandy has a surplus of 119.8 gross acres of employment land. The site needs analysis in Chapter 5 identified a need for more smaller employment sites. That need can be met through parcelization of larger sites, better use of underutilized sites (infill), and redevelopment).

Table S- 6. Estimate of land needs by land-use type, gross acres, Sandy, 2009-2029

Land use type	Land Need Surplus (deficit)
Residential	376.7
Residential	
Low Density Residential	179.7
Medium Density Residential	20.5
High Density Residential	19.1
Village	
Village - R-1	145.0
Village - R-2	18.0
Village - R-3	(5.7)
Public and semi-public needs	(17.4)
Employment	119.8
Village Commercial	1.0
Commercial	49.6
Industrial	69.2
Total	479.1

Source: ECONorthwest

The results suggest Sandy does not have a demonstrated need to expand its Urban Growth Boundary at this time. The City should also explore approaches to better utilize existing lands in the UGB. Following are a few policy options the City could explore:

- Restricting the supply of commercial land to encourage infill and redevelopment
- Encouraging higher density development on employment lands
- Redesignation of lands within the UGB to plan designations that have deficits

The *Sandy Urbanization Study* provides technical analysis and data to update the Goals 9, 10, and 14 factual components of the Sandy Comprehensive Plan (including the buildable lands inventory).

PURPOSE AND METHODS

The purpose of this technical report is to provide the technical analysis required to determine if an Urban Growth Boundary (UGB) expansion and designation of Urban Reserve Areas (URAs) are necessary. It includes data that the City can use to update the Goal 9, 10, and 14 factual components of the Sandy Comprehensive Plan including the buildable lands inventory. Specifically, this report presents:

- A forecast of population and employment
- A housing needs analysis consistent with Goal 10, OAR 660-008, and Goal 14
- An economic opportunities analysis consistent with Goal 9 and OAR 660-009
- A buildable lands inventory consistent with Goal 9, 10, 14 and OAR 660-024 requirements

This report also compares demand for land with the supply of land. This analysis is required by statewide Planning Goals 9, 10, and 14 to determine if the City has sufficient buildable land to meet the 20-year demand.

In general, a Land Need Assessment contains a *supply* analysis (buildable and redevelopable land by type) and a *demand* analysis (population and employment growth leading to demand for more built space: residential and non-residential development). The geographic scope of the Land Need Assessment is all land inside the Sandy Urban Growth Boundary.

POPULATION AND EMPLOYMENT FORECASTS

Forecasts for population and employment growth are essential to the estimate of demand for buildable land for residential and non-residential needs. Expected population growth will influence economic opportunities and employment growth in Sandy, which will have implications for demand for non-residential land and public services.

The population and employment forecasts use safe harbor methods from OAR 660-024 to estimate growth for the 2009-2029 period.

- The population forecast uses the safe harbor from 660-024-0030 (3), which allows the City to extend Clackamas County’s existing coordinated population forecast from 2017 to 2027, creating a 20-year planning period.
- The employment forecast uses confidential covered employment data from the Oregon Employment Department to estimate employment in Sandy in 2007. ECO forecast employment growth using OAR 660-024-0040 (8) (a) (ii), which allows the City to determine employment land needs based on “The population growth rate for the urban area in the adopted 20-year coordinated population forecast...”

BUILDABLE LANDS INVENTORY

The general structure of the buildable land (supply) analysis is based on the DLCDCD HB 2709 workbook “*Planning for Residential Growth – A Workbook for Oregon’s Urban Areas*,” which specifically addresses residential lands. The buildable lands inventory uses methods and definitions that are consistent with OAR 660-009 and OAR 660-024. The steps and sub-steps in the supply inventory are:

- Calculate the gross vacant acres by plan designation, including fully vacant and partially vacant parcels.
- Calculate gross buildable vacant acres by plan designation by subtracting unbuildable acres from total acres.
- Calculate net buildable acres by plan designation, subtracting land for future public facilities from gross buildable vacant acres.
- Calculate total net buildable acres by plan designation by adding redevelopable acres to net buildable acres.

The supply analysis builds from a parcel-level database to estimates of buildable land by plan designation and zoning.¹ For other generalized land use types, each parcel was classified into one of the following categories:

- Vacant land
- Partially Vacant land
- Undevelopable land
- Developed land
- Potentially Redevelopable land

The City identifies areas in steep slopes, floodplains, wetlands identified in the National Wetlands Inventory (NWI), and land identified for future public

¹ The parcel-level database was based on information from the Clackamas County Assessor.

facilities as constrained or committed lands. These areas were deducted from lands that were identified as vacant or partially vacant. Definitions of these characteristics and the results of the buildable residential lands inventory are presented in Chapter 3.

HOUSING

Demand for land is characterized through analysis of national, regional, and local demographic and economic data. For residential uses, population and households drive demand. For the residential sector, for example, information about the characteristics of households is used to identify types of housing that will be sought by households.

The method used in this analysis is generally consistent with the method described in the DLCD document *Planning for Residential Growth* (DLCD, 1997). The Workbook describes six steps in conducting a residential needs assessment:

1. Project the number of new housing units needed in the next 20 years.
2. Identify relevant national, state, and local demographic trends that will affect the 20-year projection of structure type mix.
3. Describe the demographic characteristics of the population, and household trends that relate to demand for different types of housing.
4. Determine the types of housing that are likely to be affordable to the projected households.
5. Estimate the number of additional needed units by structure type.
6. Determine the needed density ranges for each plan designation and the average needed net density for all structure types.

Chapter 4 presents the housing needs analysis which provides estimates of needed housing by type, density, and price. It also provides estimates of land that will be required to accommodate future population growth.

ECONOMY

Oregon Planning Goal 9 and its Administrative Rule (OAR 660-009) require jurisdictions to provide an adequate supply of buildable lands for a variety of commercial and industrial activities. In addition, Goal 9 requires plans to be based on an analysis of the comparative advantages of a planning region. Comparative advantage is defined in terms of the relative availability of factors that affect the costs of doing business in the planning region; Goal 9 specifies many geographic, economic, and institutional factors that an analysis of comparative advantage should consider.

The analysis of comparative advantage in this report includes the locational factors specified by Goal 9 and OAR 660-009. It assesses qualitatively the availability of these factors in Sandy relative to Clackamas County, and to Oregon.

ORGANIZATION OF THIS REPORT

The remainder of this report is organized as follows:

- **Chapter 2, Context for Growth in Sandy: Population and Employment Forecasts**, presents population and employment forecasts for the Sandy urban growth boundary.
- **Chapter 3, Buildable Land Supply**, describes the supply of residential, commercial, industrial, and public land available to meet forecast population and employment growth.
- **Chapter 4, Housing Needs Analysis**, presents a housing needs analysis consistent with Goal 10. Included in the housing needs analysis is an evaluation of the public facilities needed to accommodate new growth, and needed housing segments that have specific siting requirements.
- **Chapter 5, Economic Opportunities Analysis**, describes national and state economic factors that may affect Sandy, an overview of Sandy's economy, and an evaluation of the comparative economic advantages of Sandy.
- **Chapter 6, Conclusions**, compares buildable land supply with estimated housing need.

This report also includes four appendices:

- **Appendix A, National Housing Trends**
- **Appendix B, HCS Housing Needs Model**
- **Appendix C, Summary of National and State Economic Trends**
- **Appendix D, Factors Affecting Economic Development in Sandy**

Population and Employment Forecasts

A forecast of expected population growth in Sandy is essential to estimate the demand for buildable land and to assess housing needs. Expected population growth will also influence economic opportunities and employment growth in Sandy, which will have implications for demand for non-residential land and public services. The remainder of this chapter is organized as follows:

- The **population forecast** section presents a “safe harbor” coordinated population forecast for Sandy using the methods described in OAR 660-024-0030(4). This section also presents the population forecasts for Clackamas County to provide context for growth in Sandy. This section identifies the methods and assumptions used to develop these forecasts.
- The **employment forecast** section presents a 20-year projection of employment growth for Sandy using the OAR 660-024-0040(8)(a).
- The **summary** section compares population and employment growth for the Sandy UGB. This section concludes with recommended population and employment forecasts that will be used in the remainder of the *Sandy Urbanization Study*.

This study uses the 2009-2029 timeframe for the 20-year planning period. This time frame is based on the expected adoption of the Sandy Urbanization Report in late 2008 or early 2009.

The population forecasts are based on the Oregon Office of Economic Analysis long-range forecasts prepared in 2004 and Clackamas County’s and Sandy’s 2007 population estimate developed by the Population Research Center at Portland State University. The employment forecasts use the same growth rate assumptions as the population forecasts consistent with the safe harbor assumptions allowed by OAR 660-024-0040(8)(a).

POPULATION FORECAST

Before determining whether the City has sufficient land for 20-year’s growth, the City must have a coordinated population forecast that extends to 2029. OAR 660-024-0030 (4) presents a safe harbor for extending Sandy’s existing forecast until 2029. It says:

“(4) As a safe harbor, a city and county may adopt a 20-year forecast for an urban area consistent with this section. The forecast is deemed to comply with applicable goals and laws regarding population forecasts for

purposes of the current UGB evaluation or amendment provided the forecast:

(a) Is adopted by the city and county in accordance with the notice, procedures and requirements described in section (1) of this rule;

(b) Is based on OEA's population forecast for the county for a 20-year period commencing on the date determined under OAR 660-024-0040(2); and

(c) Is developed by assuming that the urban area's share of the forecasted county population determined in subsection (b) of this rule will be the same as the urban area's current share of county population based on the most recent certified population estimates from Portland State University and the most recent data for the urban area published by the U.S. Census Bureau.”

The safe harbor gives the City (and County) authority to adopt an updated forecast.

The safe harbor uses a “ratio” method that assumes that Sandy’s share of the County’s population will remain constant throughout the 20-year forecast period. The forecast uses the most recent population estimates (2007) for Sandy and Clackamas County. Because the safe harbor methodology uses the “urban area” (defined as the UGB in 660-024-0010(4)) as the base, population in the unincorporated areas of the Sandy UGB was estimated using GIS to develop a dwelling unit count. The dwelling unit count (64 dwellings) was then multiplied by the average household size from the 2000 Census (2.7 persons) to develop the population estimate (173 persons). In summary, the ORS 195.034(2) safe harbor forecast that follows is based on:

- The Clackamas County 2007 population estimate of 372,270 as reported by the Population Research Center at Portland State University.
- The OEA’s forecast of 536,123 people in Clackamas County by 2030. See http://www.oregon.gov/DAS/OEA/docs/demographic/pop_components.xls for 2004 OEA population forecasts.
- Portland State University’s (PSU) estimate of 7,595 people in the Sandy city limits in 2007.
- ECONorthwest’s estimate of 64 dwelling units and 173 persons in the unincorporated area of the Sandy UGB. The dwelling unit count is from analysis of data from the Clackamas County Assessor and the City’s GIS database. The population count assumes an average household size of 2.7 persons as reported in the 2000 Census for the City of Sandy. Thus, the estimated UGB population in 2007 for Sandy was 7,768.

The ORS 195.034(2) safe harbor uses a ratio method to forecast population. The safe harbor requires deriving the percentage of Clackamas County's population that Sandy accounts for in the base year (2007).

Table 2-1 shows the safe harbor population ratio for Sandy in 2007. Sandy accounted for about 2.1% of the County's population in 2007.

Table 2-1. Estimate of Sandy UGB share of County population, 2007

Area	2007 Population
Clackamas County (PSU)	372,270
Sandy	
City Limits (PSU)	7,595
UGA (GIS estimate)	173
Total Sandy UGB	7,768
Sandy share of County	2.1%

Source: Population Research Center at Portland State University; City of Sandy GIS; US Census; calculations by ECONorthwest.

Table 2-2 shows that in 2007 Sandy accounted for 2.1% of the County's population. Extrapolating this to 2028 yields a UGB population of 10,861. This equates to an average annual growth rate of 1.6%.

Table 2-2. City of Sandy ORS 195.034(2) Safe Harbor Population Forecast

Year	Clackamas	Sandy UGB	
	County	Population	% of County
2007	372,270	7,768	2.1%
2025	497,926	10,390	2.1%
2026	505,341	10,544	2.1%
2027	512,867	10,701	2.1%
2028	520,505	10,861	2.1%
2029	528,256	11,023	2.1%
2030	536,123	11,187	2.1%
2031	543,915	11,349	2.1%
2032	551,820	11,514	2.1%
2033	559,840	11,682	2.1%
2034	567,977	11,851	2.1%
2035	576,231	12,024	2.1%

Source: Calculations by ECONorthwest; 2007 County and City Limits Population from Portland State University; 2007 unincorporated population estimated by ECONorthwest.

Table 2-3 presents the population forecast for the City of Sandy for the period 2007 to 2030. The forecast for 2009-2029 (the forecast period for this analysis), projects that Sandy will grow from 8,034 to 11,023 residents, an increase of 2,989 people at an average annual growth rate of 1.6%.

Table 2-3. Sandy UGB population forecast, 2007-2030

Year	UGB Population	Increase	% Change
2007	7,768	--	
2008	7,900	132	1.7%
2009	8,034	134	1.7%
2010	8,170	136	1.7%
2011	8,304	134	1.6%
2012	8,439	136	1.6%
2013	8,578	138	1.6%
2014	8,718	140	1.6%
2015	8,861	143	1.6%
2016	9,005	144	1.6%
2017	9,151	146	1.6%
2018	9,300	149	1.6%
2019	9,451	151	1.6%
2020	9,605	154	1.6%
2021	9,757	152	1.6%
2022	9,912	154	1.6%
2023	10,068	157	1.6%
2024	10,228	159	1.6%
2025	10,390	162	1.6%
2026	10,544	155	1.5%
2027	10,701	157	1.5%
2028	10,861	159	1.5%
2029	11,023	162	1.5%
2030	11,187	164	1.5%
Change (2009-2029)			
Number	2,989		
Percent	37%		
AAGR	1.6%		

Source: Forecast by ECONorthwest August 2008.

EMPLOYMENT FORECAST

To provide for an adequate supply of commercial and industrial sites consistent with plan policies, Sandy needs an estimate of the amount of commercial and industrial land that will be needed over the planning period. Demand for commercial and industrial land will be driven by the expansion and relocation of existing businesses and new businesses locating in Sandy. The level of this business expansion activity can be measured by employment growth in Sandy. This section presents a projection of future employment levels in Sandy for the purpose of estimating demand for commercial and industrial land.

The projection of employment has two major steps:

1. **Establish base employment for the projection.** We start with the estimate of covered employment in Sandy's UGB presented in Chapter 5. Covered employment does not include all workers, so we adjust covered employment to reflect total employment in Sandy. Employment by sector will be summarized into employment by land use type for the purposes of estimating land demand by type.

2. **Project total employment.** The projection of total employment will be calculated using the safe harbor method suggested in the Oregon Revised Statutes.

The remainder of this chapter is organized by headings that correspond to these four major steps for the projection.

EMPLOYMENT BASE FOR PROJECTION

To forecast employment growth in Sandy, we must start with a base of employment growth on which to forecast. Table 2-3 shows ECO's estimate of total employment in the Sandy UGB in 2005. To develop the figures, ECO started with estimated covered employment in the Sandy UGB from confidential QCEW (Quarterly Census of Employment and Wages) data provided by the Oregon Employment Department. Covered employment, however, does not include all workers in an economy. Most notably, covered employment does not include sole proprietors. Analysis of data shows that covered employment reported by the Oregon Employment Department for Clackamas County is only about 71% of total employment reported by the U.S. Department of Commerce. We made this comparison by land use type for Clackamas County and used the resulting ratios to convert covered employment to total employment in Sandy.

Table 2-3 shows Sandy had an estimated 4,124 employees within its UGB in 2005. This figure results in a relatively low population-to-employment ratio of 1.6 persons per employee. The statewide average is about 1.9 persons per employee.

The next step in the analysis was to use the 2005 employment base to extrapolate 2009 employment—the base year for the employment forecast. The QCEW data are from 2005, thus the need to create a 2009 base year estimate. The 2009 base year estimate assumes the same growth rate for employment as population: 1.6% annually. This assumption is consistent with the OAR 660-024-0040(8)(a) safe harbor provisions for the employment forecast. Applying this growth rate results in a 2009 employment base of 4,395 employees.

Table 2-3. Estimated total employment in the Sandy UGB by land use type, 2009

Land Use Type / Sector	Covered Employment		Total Employment		
	2005	% of 2005 Total Emp.	2005	2009	% of All 2009 Emp.
Retail and Services	1,877	64%	2,915	3,106	71%
Industrial	542	78%	696	742	17%
Government	499	97%	513	547	12%
Total Employment	2,918	71%	4,124	4,395	100%

Source: 2005 covered employment from confidential Quarterly Census of Employment and Wage (QCEW) data provided by the Oregon Employment Department. Employment summarized by land use type by ECONorthwest. Covered employment as a percent of total employment calculated by ECONorthwest using data for Clackamas County employment from the U.S. Department of Commerce, Bureau of Economic Analysis (total) and the Oregon Employment Department (covered). 2005 total employment converted to 2007 total employment by ECONorthwest using an annual growth rate of 1.6% over four years.

PROJECTION OF EMPLOYMENT

OAR 660-024-0040 (8) (a) (ii) allows the City to determine employment land needs based on “The population growth rate for the urban area in the adopted 20-year coordinated population forecast...” Based on this safe harbor, employment in Sandy can be assumed to grow at 1.6% annually (see Table 2-2 for the safe harbor population forecast). Table 2-4 shows the result of applying this growth rate to the total employment base in Sandy estimated in Table 2-3.

To estimate employment growth by land use type in the Sandy UGB, the forecasted level of total employment in 2029 (6,036) was distributed among the three categories of land use types shown in Table 2-4. Table 2-4 shows the share of employment by land use type in 2009 and the assumed share in 2029. Employment is organized into groupings of industries that have similar land needs (e.g., topography, building types, average employment densities, etc.) The sectors included in each land use types include:

- **Retail and Services.** Retail Trade; Information; Finance and Insurance; Real Estate and Rental and Leasing; Professional, Scientific, and Technical Services; Management of Companies and Enterprises; Administrative and Support and Waste Management and Remediation Services; Private Education Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; and Other Services (except Public Administration)
- **Industrial.** Agriculture, Forestry, Fishing, and Hunting; Construction; Manufacturing; Utilities; Wholesale Trade; and Transportation and Warehousing
- **Government.** Public Administration

The forecast by land use category assumes that the share of employment needing land types used by will not change between 2009 and 2029.

The forecast assumes that the share of employment in Industrial firms will decrease from 17% to 15%, the share of employment in Retail and Services firms will increase from 71% to 75%, and the share of employment in Government will decrease from 12% to 10%. These changes are consistent with State and regional forecasts.

Table 2-4. Employment growth by land use type in Sandy's UGB, 2009–2029

Land Use Type	2009 Total	% of Total	2029' Total	% of Total	2009-2029 Growth
Retail and Services	3,106	71%	4,527	75%	1,421
Industrial	742	17%	905	15%	163
Government	547	12%	604	10%	57
Total Employment	4,395	100%	6,036	100%	1,641

Source: ECONorthwest.

Note: shaded cells indicate assumptions by ECONorthwest.

SUMMARY

Table 2-5 summarizes the safe harbor population and employment forecasts for the Sandy UGB. The coordinated population forecasts for the Sandy UGB indicate that population will increase by 2,989 persons between 2009 and 2029 at an average annual rate of 1.6%. Employment is forecast to grow at the same rate, increasing by 1,642 jobs between 2009 and 2029.

Table 2-5. Forecast population and employment, Sandy UGB, 2009-2029

Year	Population	Employment	Pop/Emp
2009	8,034	4,394	1.83
2014	8,718	4,757	1.83
2019	9,451	5,150	1.84
2024	10,228	5,575	1.83
2029	11,023	6,036	1.83
Change 2007-2027			
Number	2,989	1,642	
Percent	37%	37%	
AAGR	1.6%	1.6%	

Source: City of Sandy; ECONorthwest

The buildable lands inventory is intended to identify lands that are available for development within the UGB. The inventory is sometimes characterized as *supply* of land to accommodate growth. Population and employment growth drive *demand* for land. The amount of land needed depends on the density of development.

This chapter presents the buildable lands inventory for the City of Sandy. The results are based on analysis of Geographic Information System data provided by City of Sandy GIS and Clackamas County Assessment data. The analysis also used aerial orthophotographs for verification.

METHODS, DEFINITIONS, AND ASSUMPTIONS

The first step in the buildable inventory is to develop working definitions and assumptions. ECO initially classified land using a rule-based methodology. The rules applied by ECO to classify land are described below. The accompanying maps show the results of the application of those rules, with some adjustments made based on review of 2003 aerial photos, and building permit data, and verification by City staff.

ECO began the buildable lands analysis with a tax lot database provided by the City's GIS Department. The tax lot database was current as of June 2007. The supply analysis builds from the tax lot-level database to estimates of buildable land by plan designation.

A key step in the buildable lands analysis was to classify each tax lot into a set of mutually exclusive categories. Consistent with the DLCD *Residential Lands Workbook*, as well as applicable administrative rules, all tax lots in the UGB are classified into one of the following categories:

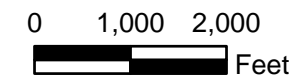
- *Vacant land.* Tax lots that have no structures or have buildings with very little value. For the purpose of this inventory, residential lands with improvement values under \$10,000 are considered vacant (not including lands that are identified as having mobile homes). For industrial and other employment lands, the OAR 600-009-0005(14) definitions are used: "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.
- *Partially vacant land.* Partially vacant tax lots are those occupied by a use but which contain enough land to be further subdivided without need of rezoning. Consistent with OAR 660-024-0050(2), partially vacant residential tax lots must be at least 0.5 acre in area. The inventory used the

half-acre threshold as a preliminary indicator for partially-vacant land, and then reviewed improvement values, aerial photos, and building footprints to verify lands classified as partially-vacant. Partially vacant commercial and industrial tax lots were identified by analysis of GIS data, aerial photographs, building footprints, and fieldwork.

- *Undevelopable land.* Land that has no access or potential access, land that is already committed to other uses by policy, or tax lots that are unbuildable due to Goal 5 or Goal 7 constraints (slopes over 25%, wetlands, riparian areas, floodways, and floodplains).
- *Developed land.* Land that is developed at densities consistent with zoning and improvements that make it unlikely to redevelop during the analysis period. Lands not classified as vacant, partially-vacant, or undevelopable are considered developed.
- *Potentially Redevelopable land.* Land on which development has already occurred but on which, due to present or expected market forces, there exists the potential that existing development will be converted to more intensive uses during the planning period. Redevelopable land is a subset of developed land and was identified using improvement to land value ratios and City input.
- *Public land.* Lands in public ownership are considered unavailable for residential development. This includes lands in Federal, State, County, or City ownership. Public lands were identified using the Clackamas County Assessment property tax exemption codes. The review of public lands included one site in city ownership as buildable as the City intends to sell the site at some point during the planning period.
- *Semi-Public Lands.* Other exempt lands not in public ownership were classified as semi-public lands. Such lands were classified using the same definitions as other private lands (e.g., using the definitions for Vacant, Partially-Vacant, Undevelopable, Developed, or Potentially Redevelopable presented above).

The land classifications result in identification of lands that are vacant or partially vacant. The inventory includes all lands within the Sandy UGB. Public and semi-public lands are generally considered unavailable for development. Figure 3-1 shows lands by plan designation within the Sandy UGB.

Comprehensive Plan Map
 Adopted October 20, 1997
 Ordinance No. 10-97



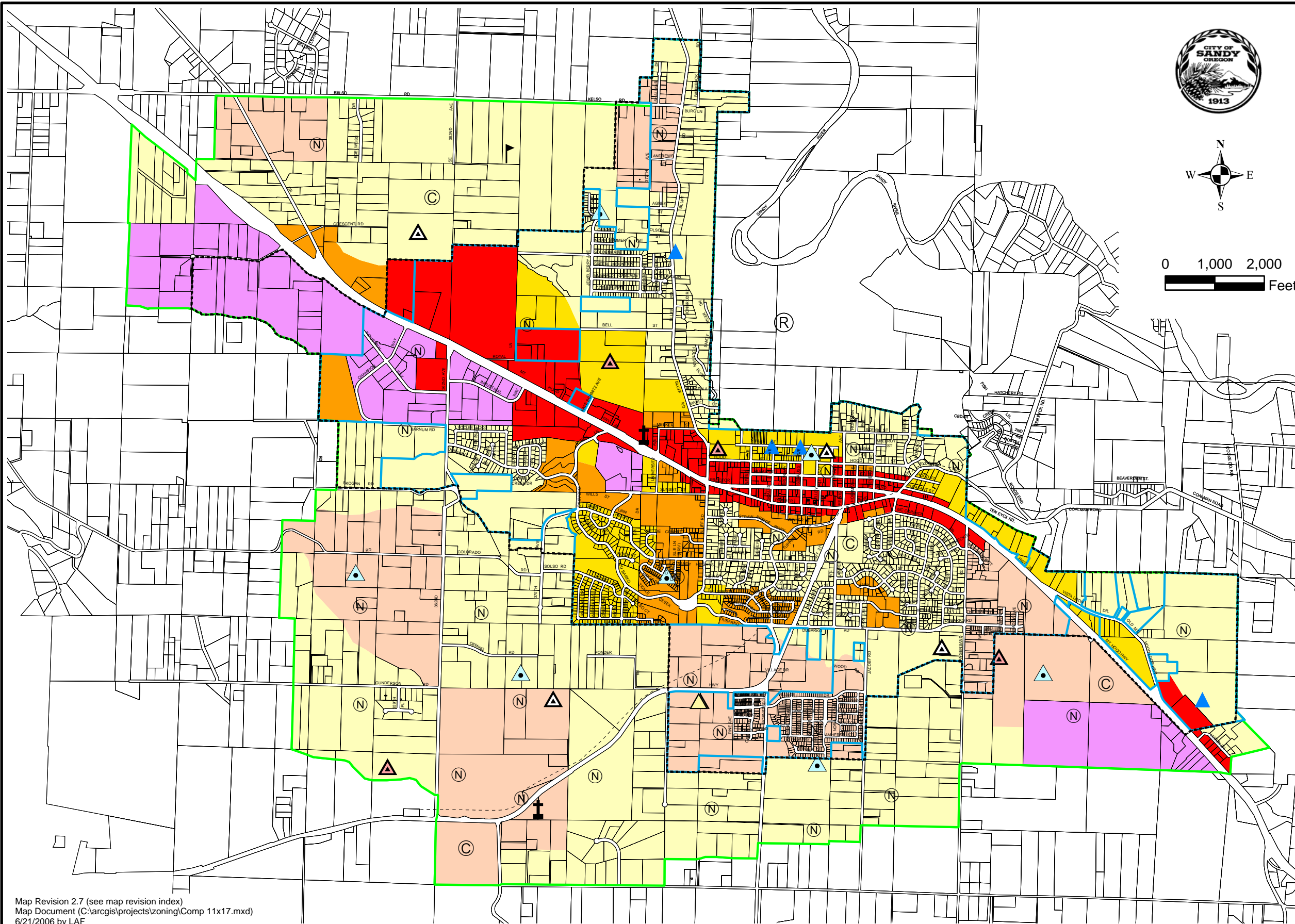
- City Limits
- Urban Growth Boundary
- Urban Reserve Boundary
- Barlow Trail

Comprehensive Plan Designation

- Village
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Commercial
- Industrial

Existing & Proposed Sites
 Locations are approximate

- Elementary School
- Middle School
- High School
- Community College
- View Point
- Neighborhood Park
- Community Park
- Regional Park
- Golf Course
- Cemetery



RESULTS

LAND BASE

Table 3-1 shows acres within the Sandy UGB and city limits in 2007. According to the City GIS data, Sandy had about 2,458 acres within its UGB. Of the 2,458 acres, 2,135 acres (about 87%) were in tax lots. Acres not in tax lots were primarily in streets and waterways. Sandy has about 1,988 acres within its City Limits; of these 1,716 acres (about 86% of total acres in the City Limit) were in tax lots. Additionally, the City has about 470 acres between the City Limits and Urban Growth Boundary (the UGA); of this about 419 acres are in tax lots.

Additionally, Sandy has 2,283 acres within its Urban Reserve Area. The Urban Reserve is a formally established area that is the first priority for expansion of the UGB when the City identifies specific land needs.

Table 3-1. Acres in tax lots in Sandy UGB and City Limit, 2007

Area	Tax Lots	Total Acres	Acres in Tax Lots	Percent in Tax Lots
City Limits	3,527	1,987.8	1,716.0	86%
UGA	85	469.9	418.8	89%
Total	3,612	2,457.7	2,134.8	87%

Source: City of Sandy GIS data; analysis by ECONorthwest

Table 3-2 summarizes acres by plan designation for lands within the Sandy UGB. The results show that about 76% of the land in the Sandy UGB is designated for residential use. About 14% is designated for commercial use, while 10% is designated for industrial uses.

Table 3-2 also shows a breakout of the Village plan designation by use. The Village plan designation is a mixed-use designation that incorporates a variety of housing densities with commercial areas. Table 3-2 aggregates lands by zone in to the City's plan designation categories. Of the 328 acres within the Village designation, about 12 are designated for commercial uses, and the majority of other lands (264 acres) are designated for low density residential uses (e.g., the SFR and R-1 zones).

Table 3-2. Gross acres by plan designation, Sandy UGB, 2007

Plan Designation	Title	Tax Lots	Acres in Tax Lots	Percent of Acres
LDR	Low Density Residential	1,594	865.6	41%
MDR	Medium Density Residential	434	244.3	11%
HDR	High Density Residential	396	185.2	9%
V	Village	776	328.3	15%
	Village Commercial	6	11.9	1%
	R-1	557	263.9	12%
	R-2	126	41.4	2%
	R-3	74	10.2	0%
C	Commercial	328	291.7	14%
I	Industrial	69	219.7	10%
Total		3,597	2,134.8	100%

Source: City of Sandy GIS data; analysis by ECONorthwest

Table 3-3 shows acres by classification and constraint status for the Sandy UGB in 2007. Analysis by constraint status (the table columns) shows that about 952 acres were classified as built or committed (e.g., unavailable for development), 418 were constrained in some manner, and 759 were vacant and buildable. Two tax lots were identified as redevelopable.

Table 3-3. Gross acres by classification, Sandy UGB, 2007

Classification	Number of Tax		Developed Acres	Constrained Acres	Unconstrained Acres
	Lots	Total Acres			
Developed	2,904	807.9	715.0	92.9	0.0
Redevelopable	2	24.9	24.9	0.0	0.0
Public	141	256.1	180.8	75.3	0.0
Undevelopable	16	48.1	1.2	46.9	0.0
Partially Vacant	129	447.9	30.6	96.8	316.1
Vacant	405	549.9	0.0	106.5	443.4
Subtotal	3,597	2,134.8	952.4	418.4	759.5

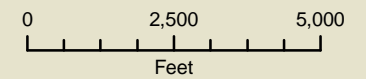
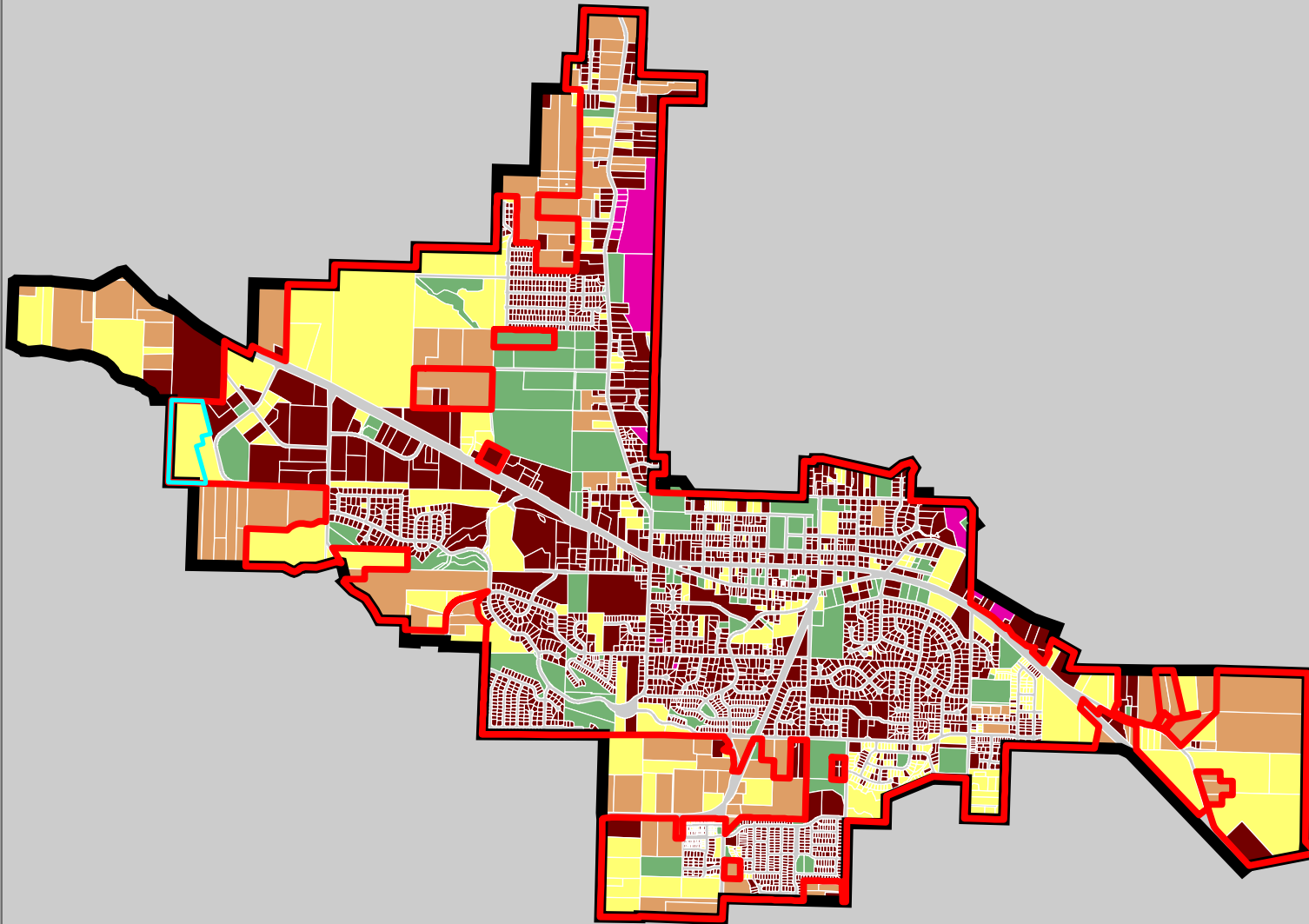
Source: City of Sandy data; analysis by ECONorthwest

Map 3-2
Tax Lots by Classification
Buildable Land Inventory
City of Sandy
Oregon

Legend

- Developed
- Unbuildable
- Public
- Partially Vacant
- Vacant

- UGB
- City Limits
- Tax Lots



Cartography/GIS: ECONorthwest, June 2007.

VACANT BUILDABLE LAND

The next step in the buildable land inventory is to net out portions of vacant and partially vacant tax lots that are unavailable for development. Areas unavailable for development fall into two categories: (1) developed areas of partially vacant tax lots, and (2) areas with physical constraints (in this instance areas with steep slopes, waterway buffers, or wetlands).

Table 3-4 shows vacant and partially vacant land by development and constraint status. The data show that about 234 acres within vacant or partially vacant tax lots are unavailable for development (e.g., they are either developed portions of partially vacant lots, or constrained), leaving about 760 vacant buildable acres within the UGB.

Table 3-4. Vacant and partially vacant land by development and constraint status, Sandy UGB, 2007

Area	Acres in Tax Lots by Constraint Status			
	Total	Developed	Constrained	Buildable
Partially Vacant	447.9	30.6	96.8	316.1
Vacant	549.9	0.0	106.5	443.4
Subtotal	997.9	30.6	203.3	759.5

Source: City of Sandy GIS data; analysis by ECONorthwest

Table 3-5 shows vacant and partially vacant land by plan designation. The results show that about 72% the land available in the Sandy UGB is zoned for residential uses. Map 3-3 shows the location of vacant and partially vacant land by plan designation. Table 3-5 also shows a breakdown of vacant land by plan designation in the Village designation.

Table 3-5. Vacant and partially vacant land by plan designation, Sandy UGB, gross acres, 2007











Plan Designation	Tax Lots	Total Acres	Developed Acres	Const. Acres	Buildable Acres	Percent of Total
LDR	191	392.2	13.6	119.6	254.6	33.5%
MDR	43	69.2	1.5	19.3	48.4	6.4%
HDR	29	62.3	0.8	19.2	42.4	5.6%
V	202	232.3	12.1	19.7	200.5	26.4%
V - C	5	11.2	0.8	0.0	10.4	1.4%
V - R-1	133	189.3	10.3	17.5	161.5	21.3%
V - R-2	11	23.8	0.5	2.1	21.1	2.8%
V - R-3	45	7.2	0.3	0.1	6.8	0.9%
C	39	146.5	0.5	15.8	130.1	17.1%
I	30	95.4	2.3	9.6	83.6	11.0%
Subtotal	534	997.9	30.6	203.3	759.5	100.0%

Source: City of Sandy GIS data; analysis by ECONorthwest

Map 3-3
Vacant and Partially
Vacant Tax Lots by
Plan Designation
Buildable Land Inventory
City of Sandy
Oregon

Legend

Plan Designation

-  C
-  HDR
-  I
-  LDR
-  MDR
-  V
-  Constraints
-  UGB
-  City Limits
-  Tax Lots

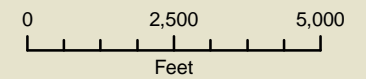
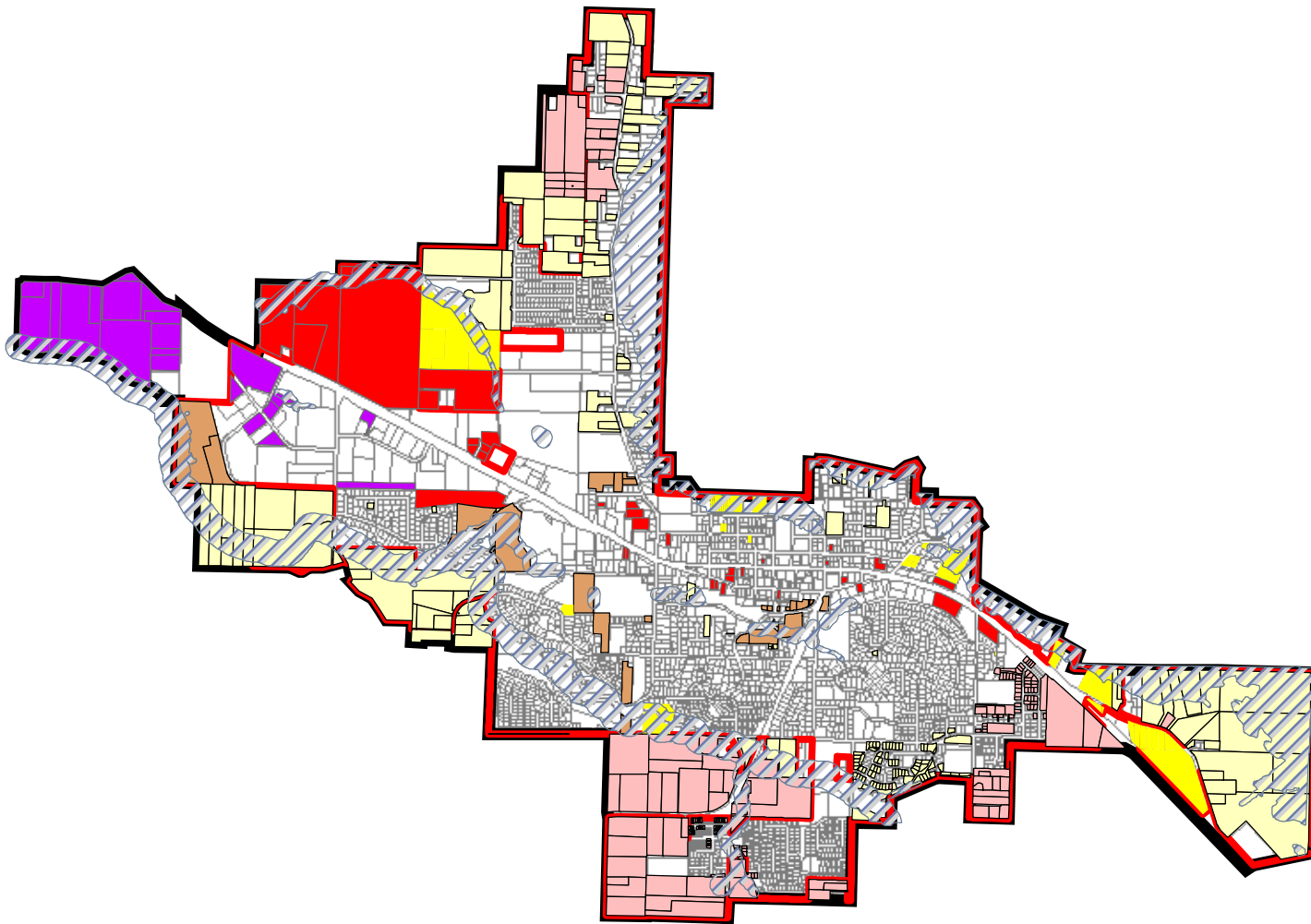


Table 3-6 shows vacant land by plan designation by parcel size.² This analysis is useful in that it shows the distribution of vacant land by parcel size, which allows an evaluation of whether a sufficient mix of parcels by size are available. The distribution of buildable land by parcel size varies by plan designation, with the results showing the City has very few parcels (2) over 20 acres.

Table 3-6. Buildable acres in vacant and partially vacant tax lots by plan designation and parcel size, Sandy UGB, 2007

Zone	Lot Size (Buildable Acres)									Total
	<0.25	0.25-0.49	0.50-0.99	1.00-1.99	2.00-4.99	5.00-9.99	10.00-19.99	20.00-50.00	50+	
Buildable Acres										
LDR	11.7	5.2	13.2	30.8	70.4	60.5	42.1	20.7		254.6
MDR	1.2	1.7	6.2	2.9	8.0	17.5	10.9			48.4
HDR	1.0	0.9	2.6	4.3	22.5		11.0			42.4
V	9.5	2.8	13.9	31.2	70.0	60.3	12.8			200.5
C	1.8	3.3	3.4	4.7	4.6	24.8	28.2		59.3	130.1
I	0.0		2.2	8.2	21.0	25.9	26.2			83.6
Total Acres	25.2	13.9	41.5	82.1	196.6	189.0	131.2	20.7	59.3	759.5
Number of Tax Lots										
LDR	102	15	19	22	20	9	3	1		191
MDR	22	5	8	2	2	3	1			43
HDR	12	3	4	3	6		1			29
V	135	7	16	17	18	8	1			202
C	14	9	5	3	2	3	2		1	39
I	9		3	6	7	3	2			30
Total Tax Lots	294	39	55	53	55	26	10	1	1	534
Percent of Total										
Buildable Acres	3%	2%	5%	11%	26%	25%	17%	3%	8%	100%
Tax Lots	55%	7%	10%	10%	10%	5%	2%	0%	0%	100%

Source: City of Sandy GIS data; analysis by ECONorthwest

REDEVELOPMENT POTENTIAL

Redevelopment potential addresses land that is classified as developed that may redevelop during the planning period. While many methods exist to identify redevelopment potential, a common indicator is improvement to land value ratio. A threshold used in some studies is an improvement to land value ratio of 1:1. Not all, or even a majority of parcels that meet this criterion for redevelopment *potential* will be assumed to redevelop during the planning period.

City staff identified two commercial parcels with redevelopment potential. Redevelopment potential only applies to lands classified as “developed.” The redevelopment analysis used the following parameters:

² The table shows vacant, buildable acres in vacant and partially vacant parcels.

- Residential: lands in low-density residential zones (SFR and R-1) were not considered redevelopable because (1) parcels over 0.5 acre with a single dwelling are classified as partially vacant, and (2) parcels under that size would typically be seeing replacement dwellings. Thus, no capacity is added. For the MDR and LDR designations, any tax lot with a single-family unit with an improvement to total value ratio of less than 0.3 are considered to have significant redevelopment potential; tax lots with ratios between 0.3 and 0.5 are considered to have moderate redevelopment potential.
- Commercial: Tax lots with improvement to total value ratios under 0.3 are considered to have significant redevelopment potential; tax lots with ratios between 0.3 and 0.5 are considered to have moderate redevelopment potential.
- Industrial: Tax lots with improvement to total value ratios under 0.3 are considered to have significant redevelopment potential; tax lots with ratios between 0.3 and 0.5 are considered to have moderate redevelopment potential.

Table 3-7 summarizes redevelopment potential based on the assumptions described above.

Table 3-7. Redevelopment potential











Land Use	Tax Lots	Acres
Residential		
Significant potential	8	1.8
Moderate potential	55	16.2
Commercial		
Significant potential	54	29.2
Moderate potential	46	13.7
Industrial		
Significant potential	7	16.7
Moderate potential	5	17.6

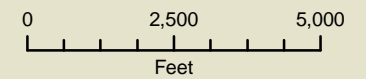
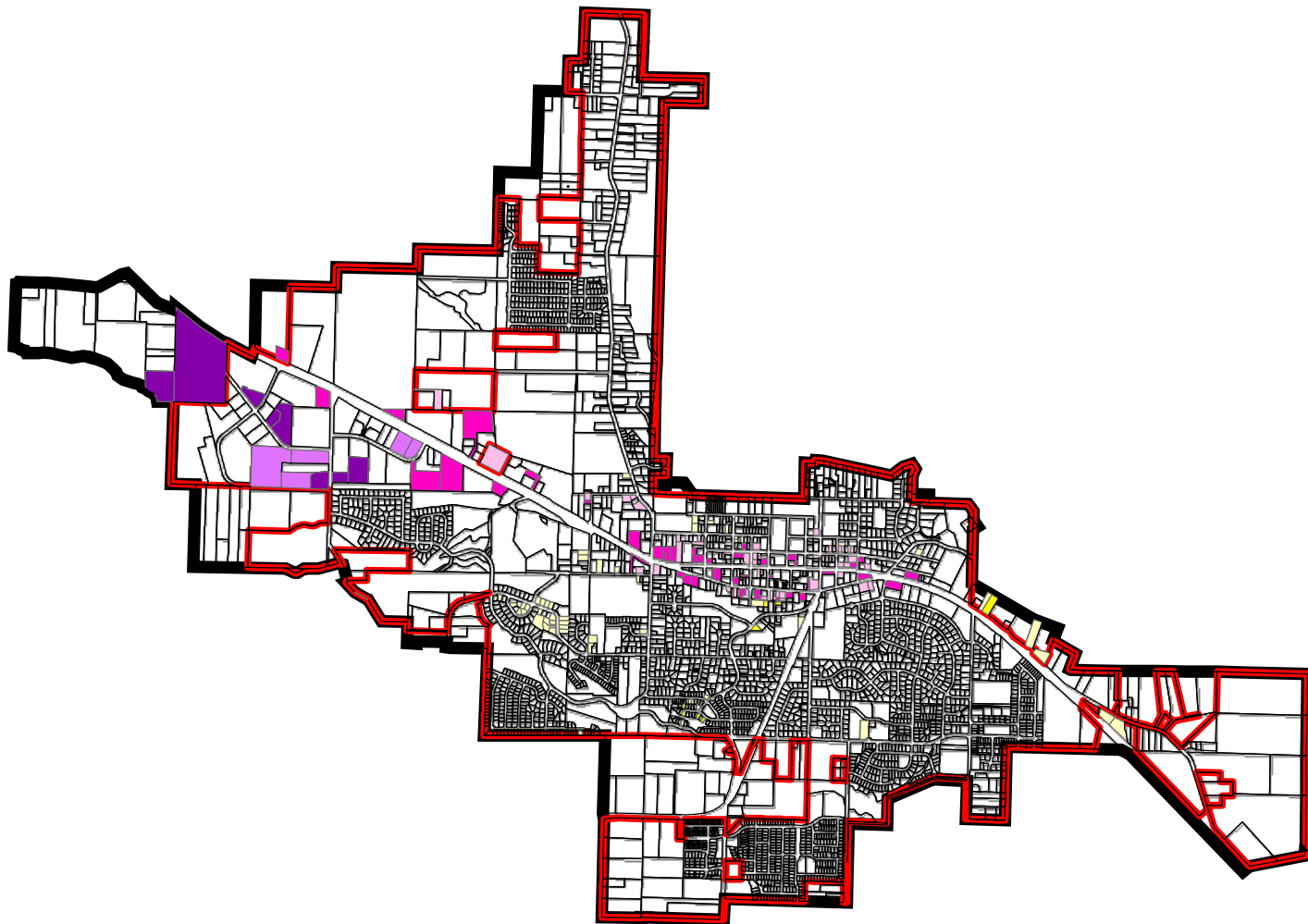
Source: City of Sandy GIS data; analysis by ECONorthwest

Map 3-4
Potentially Redevelopable
Tax Lots
Buildable Land Inventory
City of Sandy
Oregon

Legend

Plan Designation

-  C
-  HDR
-  I
-  LDR
-  MDR
-  V
-  Constraints
-  UGB
-  City Limits
-  Tax Lots



RESIDENTIAL CAPACITY

The final step in a residential buildable lands inventory is to estimate the holding capacity of buildable land. The holding capacity of residential land is measured in dwelling units and is dependent on densities allowed in specific zones. The holding capacity of employment land is dependent on the type of business and the assumed number of employees per acre. In short, land capacity is a function of buildable land and density.

The buildable lands inventory indicates that Sandy has about 760 acres of vacant and partially vacant land. Table 3-8 provides a general estimate of how much housing could be accommodated by those lands. ECO estimates that Sandy has capacity for 3,114 dwelling units within the existing UGB.

Table 3-8. Estimated development capacity, Sandy UGB, 2007

Plan Designation	Title	Capacity (in Dwelling Units)
LDR	Low Density Residential	1,311
MDR	Medium Density Residential	316
HDR	High Density Residential	388
V	Village	1,099
	Village - R-1	889
	Village - R-2	143
	Village - R-3	61
Total		3,114

Source: City of Sandy GIS data; analysis by ECONorthwest

Housing Needs Analysis

This chapter provides the technical analysis to update the Housing (Goal 10) element of the Sandy Comprehensive Plan. Statewide Planning Goal 10 addresses housing in Oregon and provides guidelines for local governments to follow in developing their local comprehensive land use plans and implementing policies.

At a minimum, local comprehensive plans and policies that address housing must meet the requirements of Goal 10. Goal 10 requires incorporated cities to complete an inventory of buildable residential lands and to encourage the availability of adequate numbers of housing units in price and rent ranges commensurate with the financial capabilities of its households.

Goal 10 defines needed housing types as “housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels.” This definition includes government-assisted housing and mobile home or manufactured dwelling parks as provided in ORS 197.303 and ORS 197.475 to 197.490. For communities with populations greater than 2,500 and counties with populations greater than 15,000, needed housing types include (but are not limited to):

- Attached and detached single family housing and multiple-family housing for both owner and renter occupancy; and
- Manufactured homes on individual lots planned and zoned for single-family residential use.

Sandy meets the population threshold for these statutory requirements; Goal 10 requires all incorporated cities to address housing need in their comprehensive plans. The housing needs analysis in this chapter addresses these housing types.

METHODS

In completing the housing needs analysis for Sandy, ECONorthwest generally followed the methodology described in the DLCDC report *Planning for Residential Development*, referred to as the “workbook.” The workbook generally describes seven steps in conducting a housing needs analysis:

1. Determine the number of new housing units needed in the next 20 years.
2. Identify relevant national, state, and local demographic trends that will affect the 20-year projection of structure type mix.
3. Describe the demographic characteristics of the population, and household trends that relate to demand for different types of housing.

4. Determine the types of housing that are likely to be affordable to the projected households.
5. Estimate the number of additional new units by structure type.
6. Determine the density ranges for all plan designations and the average net density for all structure types.
7. Evaluate unmet housing needs and the housing needs of special populations (Goal 10 needs).

While the housing need analysis presented in this chapter generally follows the methodology described in the *Workbook*, it does not include as much detail as an analysis that would be required under ORS 197.296.³

The remainder of this chapter is organized into three sections. The first section describes residential development trends in Sandy, the second describes demand for new housing units over the 20-year planning period; and the third addresses housing needs.

RESIDENTIAL HOUSING DEVELOPMENT TRENDS

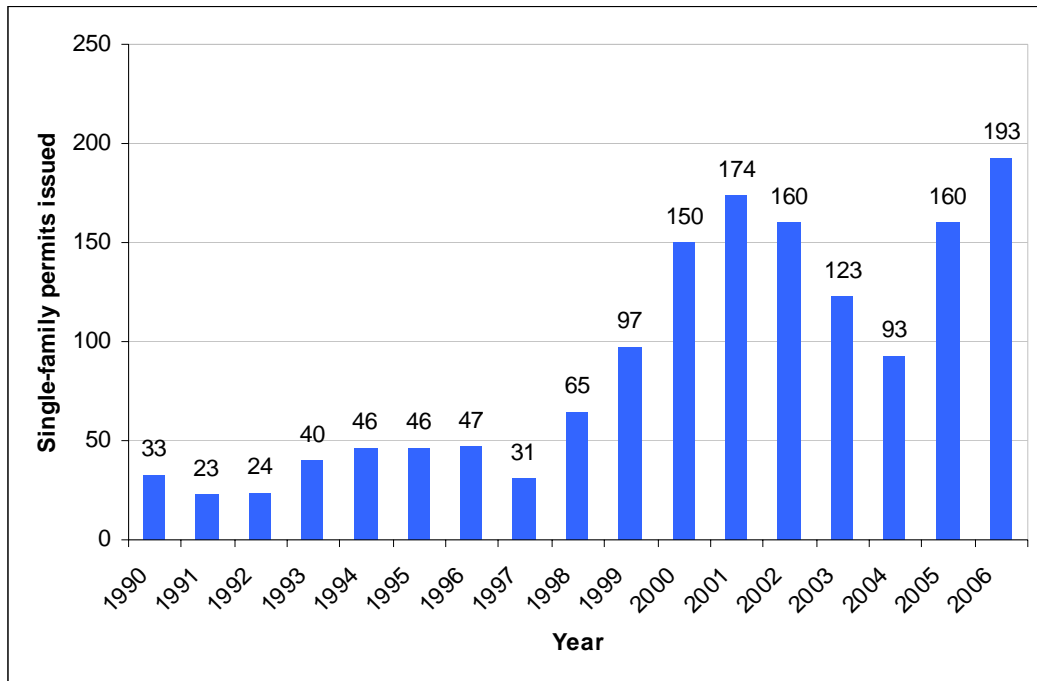
An evaluation of recent development trends is useful in developing a better understanding of development trends in the local housing market. This section presents data from a range of sources that document local and regional residential development trends. It starts with a discussion of regional housing development trends and then focuses on development trends in Sandy.

Figure 4-1 shows building permits issued for single-family residential dwelling units in Sandy from 1990 through 2006.⁴ Between 1990 to 1997, Sandy issued 23 to 47 permits for single-family dwelling units annually. The number of permits issued for single-family dwelling units began to increase in 1998, peaking in 2000 to 2002 and 2005 and 2006. Over the nearly 16-year period, the City issued an average of 89 permits per year for single-family dwellings. Since 1998, the City has issued an average of 135 permits annually.

³ Sandy is not required to examine the needs of special populations; such an analysis is not included in this report.

⁴ This study was initiated in 2007 when data were not available for all of 2007 and any of 2008.

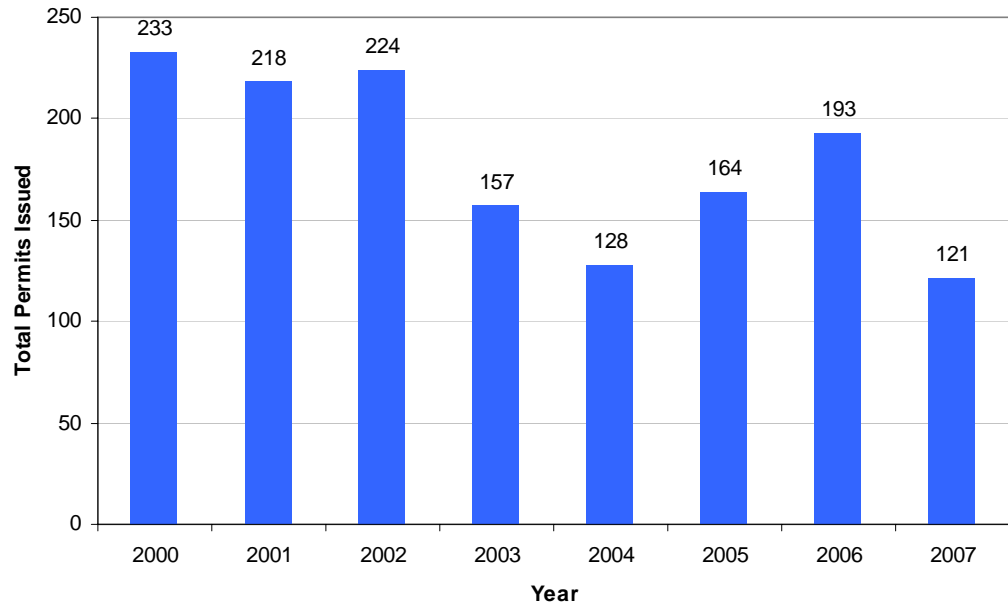
Figure 4-1. Building permits issued for single-family dwelling units, Sandy, 1990 through 2006



Source: City of Sandy

Figure 4-2 shows building permits issues for new residential housing units annually in Sandy from 2000 to May 2007. Figure 4-2 shows that the number of dwelling units approved varies from year to year and peaked at over 200 in the 2000 to 2002 period. The number of dwellings approved was slower during 2003 to 2005.

Figure 4-2. Building permits issued for new residential construction, Sandy, 2000 to May 2007



Source: City of Sandy

Note: The City of Sandy did not have an estimate for the number of multifamily units permitted in 2000. The U.S. Census Bureau reported that Sandy issued permits for 80 multifamily units in 2000.

Table 4-1 shows dwelling units approved through building permits issued for new residential construction by type within Sandy. In a seven year period (between 2000 and 2007), the data indicate that about 79% of residential dwellings approved were for single-family detached dwellings, while about 20% were for multiple family dwellings.

The number of permits for new manufactured housing decreased over the 2000 to 2007 period. Six permits were issued for manufactured dwellings. Data from the City show that the number of permits issued for manufactured housing decreased since 1998. Between 1989 and 1998, Sandy issued an average of 10 permits annually for new manufactured homes, peaking with 23 permits for new manufactured dwellings issued in 1992.

Table 4-1. Dwelling units approved through building permits issued for new residential construction by type, Sandy, 2000 to May 2007

Year	Single Family	Manufactured Home	Multifamily	Total
2000	150	3	80	233
2001	174	2	42	218
2002	160	1	63	224
2003	123	-	34	157
2004	93	-	35	128
2005	160	-	4	164
2006	193	-	-	193
2007	88	-	33	121
Total	1,141	6	291	1,438
Average Annual	143	2	36	180
Percent of Total	79%	0%	20%	100%

Source: City of Sandy

Note: The City of Sandy did not have an estimate for the number of multifamily units permitted in 2000. The U.S. Census Bureau reported that Sandy issued permits for 80 multifamily units in 2000.

The housing mix by type (i.e., percentage of single family, multi-family, and mobile/manufactured home units) is an important variable in any housing needs assessment. Distribution of housing types is influenced by a variety of factors, including the cost of new home construction, area economic and employment trends, demographic characteristics, and amount of land zoned to allow different housing types and densities.

Table 4-2 shows changes in Sandy's housing mix from 1990-2000. Between 1990 and 2000, Sandy increased its housing stock by 35%, adding 543 dwelling units. The mix of housing changed. In 1990, 63% of dwelling units were single-family (detached and attached) units and 67% of Sandy's dwelling units were single-family units in 2000.

Twenty-four percent of new dwellings added between 1990 to 2000 were multifamily or manufactured. The share of these more affordable housing types decreased over the ten-year period. In 1990, these housing types accounted for 37% of the housing stock and in 2000 they accounted for 34% of the housing stock.

Table 4-2. Dwelling units by type, Sandy city limits, 1990 and 2000

	1990		2000		1990-2000	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	1,536	100%	2,079	100%	543	35%
Single-family	975	63%	1,387	67%	412	42%
Multifamily	368	24%	473	23%	105	29%
Manufactured/Mobile	193	13%	219	11%	26	13%
Occupied Housing Units	1,491	100%	1,963	100%	472	32%
Owner Occupied	913	61%	1,346	69%	433	47%
Renter Occupied	578	39%	617	31%	39	7%

Source: U.S. Census of Population and Housing; SF-3 1990 and 2000.

Table 4.3 shows type of dwelling by tenure (owner/renter-occupied) in 2000. The results show that single-family and manufactured (mobile home) housing types have a much higher ownership rate than other housing types—about 98% of owner-occupied units were in these housing types. Multifamily housing types, including duplexes were predominately renter occupied. It is also notable that 100% of the single-family attached dwellings were renter occupied. By contrast, 13% of single-family detached and no mobile homes were renter occupied in 2000.

Table 4-3. Housing units by type and tenure, Sandy city limits, 2000

Housing type	Owner Occupied			Renter Occupied			Total	
	Number	% by Tenure	% by Type	Number	% by Tenure	% by Type	Number	% by Type
Single-family detached	1,124	84%	87%	163	26%	13%	1,287	66%
Single-family attached	-	0%	0%	51	8%	100%	51	3%
Duplex	29	2%	16%	152	25%	84%	181	9%
Multifamily	-	0%	0%	251	41%	100%	251	13%
Mobile Home	193	14%	100%	-	0%	0%	193	10%
Total	1,346	100%	69%	617	100%	31%	1,963	100%

Source: US Census 2000, Summary File 3; Percentages calculated by ECONorthwest.

Table 4-4 shows changes in Sandy's housing mix from 2000-2007 based on 2000 Census and residential building permit data. Between 2000 and 2007, Sandy increased its housing stock about 69%, adding 1,438 dwelling units. The mix of housing changed, with single-family dwellings accounting for about 5% greater share in 2007 than 2000.

Table 4-4. Estimated dwelling units by type, Sandy, 2000 and May 2007

	2000		2007		New DU 2000-2007		
	Number	Percent	Number	Percent	Number	Percent	% Increase
Single-family	1,387	67%	2,528	72%	1,141	79%	82%
Multifamily	473	23%	764	22%	291	20%	62%
Manufactured/Mobile	219	11%	225	6%	6	0%	3%
Total Housing Units	2,079	100%	3,517	100%	1,438	100%	69%

Source: U.S. Census of Population and Housing; SF-3 1990 and 2000; City of Sandy, 2007.

Table 4-5 shows actual density by comprehensive plan designation in Sandy between 1998 and 2006. The density estimates are based on data from the City of Sandy building permits database.

The results show that Sandy achieved a density of 6.9 dwelling units per gross acre between 1998 and 2006. Housing densities ranged from 5.4 dwellings per gross acre in the Low Density Residential plan designation to 6.8 dwellings per gross acre in the Medium Density Residential plan designation to a high of 9.6 dwellings per gross acre in the High Density Residential plan designation. The Village plan designation, which allows a mixture of housing types, achieved a density of 7.9 dwellings per gross acre

Table 4-5. Actual density by plan designation, Sandy 1998-2006

Plan Designation	Gross Acres	Dwelling Units (DU)	DU/Gross Acre
Low Density Residential	148.9	798	5.4
Medium Density Residential	47.3	320	6.8
High Density Residential	49.2	473	9.6
Village	85.2	676	7.9
Low Density Residential	57.7	353	6.1
Medium Density Residential	15.5	124	8.0
High Density Residential	11.9	199	16.7
Total	330.5	2,267	6.9

Source: City of Sandy building permits database, analysis by ECONorthwest

NEW DWELLING UNITS NEEDED, 2009-2019 AND 2009-2029

Estimating total new dwelling units needed during the planning period is a relatively straightforward process. Demand for new units is based on the county coordinated population forecast as required by ORS 195.036 and ORS 197.296. Persons in group quarters are then subtracted from total persons to get total persons in households. Total persons in households is divided by persons per household to get occupied dwelling units. Occupied dwelling units are then inflated by a vacancy factor to arrive at total new dwelling units needed.

The following sections step through that logic and describe the basis for the assumptions applied to the estimate of demand for new dwelling units.

POPULATION

Table 4-6 shows forecast population for Sandy between 2009 and 2029. The coordinated population forecast assumes an average annual growth rate of 1.6% for the City of Sandy for the 2009-2029 period. Sandy's 2029 population forecast (e.g., the 20-year forecast) is 11,023 persons. This represents an increase of 2,989 persons between 2009 and 2029.

Table 4-6. Forecast population, City of Sandy, 2009-2029

Year	Population	Change		
		Number	Percent	AAGR
2009	8,034			
2014	8,718	684	9%	1.6%
2019	9,451	733	8%	1.6%
2024	10,228	776	8%	1.6%
2029	11,023	795	8%	1.5%

Source: U.S. Census and Clackamas County coordinated population forecasts

PERSONS IN GROUP QUARTERS

Persons in group quarters do not consume standard housing units: thus, any forecast of new people in group quarters is typically backed out of the population forecast for the purpose of estimating housing demand. Group quarters can have a big influence on housing in cities with colleges (dorms), prisons, or a large elderly population (nursing homes). In general, one assumes that any new requirements for these housing types will be met by institutions (colleges, government agencies, health-care corporations) operating outside what is typically defined as the housing market. Group quarters, however, require land and are typically built at densities that are comparable to multiple-family dwellings.

According to the Census data, 2,878 persons resided in group quarters in Clackamas County and 24 persons resided in group quarters in Sandy in 2000. Between 2000 and 2007, 112 assisted living units have been constructed in Sandy.

About 42% of the County's group quartered population (1,215) resided in nursing homes and no residents of Sandy reside in nursing homes in 2000. The remaining people residing in group quarters were in correctional institutions (610 in the County), other institutions (102 in the County), college dormitories (17 in the County), and other noninstitutional group quarters (934 in the County and 24 in Sandy).

Approximately 0.9% of the County's and 0.4% of Sandy's population resided in group quarters in 2000. The key area where one would expect changes in group quarters are in nursing homes. Consistent with the overall aging of the population, the needs analysis assumes persons in nursing homes to increase at a faster rate

than the overall population. Thus, the analysis assumes that 1.0% of the new population added between 2009 and 2029 will be in group quarters.

If one assumes that the percentage of persons in nursing homes in Sandy remains constant in the future, about 95 persons would reside in nursing homes in 2029. Sandy may need to plan for the development of nursing homes or other retirement facilities.

AVERAGE HOUSEHOLD SIZE

Twenty-five years ago, traditional families (married couple, with one or more children at home) accounted for 29% of all households in Oregon. By 1990 that percentage had dropped to 25%. It is likely to continue to fall, but probably not as dramatically. The average household size has decreased over the past five decades and is likely to continue decreasing. The average household size in Oregon was 2.60 in 1980 and 2.52 in 1990. One and two person households made up the majority of Oregon households in 1990. The direct impact of decreasing household size on housing demand is that smaller households means more households, which means a need for more housing units even if population were not growing.

Table 4-7 shows the average household size for Sandy for owner- and renter-occupied units in 2000. Table 4-7 shows that the average household size in Sandy was 2.70. Owner occupied units in Sandy have larger average household sizes than renter-occupied units.

OAR 660-024 established a “safe harbor” assumption for average household size—which is the figure from the most recent Census. The analysis of needed new uses an average household size assumption of 2.70 persons per household.

Table 4-7. Average household size, Sandy, 2000

	Persons per HH
Average household size	2.70
Owner-occupied units	2.80
Renter-occupied units	2.46
Single-family	2.84
Multifamily	1.82

Source: US Census, 2000

VACANCY RATES

Vacant units are the final variable in the basic housing demand model. Vacancy rates are cyclical and represent the lag between demand and the market’s response to demand in additional dwelling units. Analysts consider a 2%-4% vacancy rate typical for single-family units; 4%-8% is typical for multifamily residential markets.

According to the 2000 Census, about 4% of single-family homes in Sandy were vacant and about 8% of multiple family homes were vacant. In Clackamas County, about 5% of single-family houses were vacant and 11% of multifamily houses were vacant in 2000. The baseline housing needs analysis assumes a vacancy rate of 4% for single-family housing types and 8% for multifamily housing types.

FORECAST OF NEW HOUSING UNITS, 2009-2019 AND 2009-2029

The preceding analysis leads to a forecast of new housing units likely to be built in Sandy for the periods 2009-2019 and 2009-2029. Table 4-8 summarizes the analysis. Based on the assumptions shown in Table 4-8, Sandy will need 535 new dwelling units to accommodate population growth between 2009 and 2019 and 1,156 new dwelling units to accommodate growth between 2009 and 2029. These figures do not include new group quarters. The forecast assumes 75% will be single-family housing types (including single-family detached, single-family attached, and manufactured) and 25% will be multifamily. The rationale for the household mix is presented in the following sections.

The forecast of new units does not include dwellings that will be demolished and replaced. This analysis does not factor those units in; it assumes they will be replaced at the same site and will not create additional demand for residential land.

Table 4-8. Demand for new housing units, Sandy, 2009-2019 and 2009-2029

Variable	Baseline Estimate of Housing Units (2009-2019)	Baseline Estimate of Housing Units (2009-2029)
Change in persons	1,383	2,989
<i>minus</i> Change in persons in group quarters	14	30
<i>equals</i> Persons in households	1,370	2,959
Average household size	2.70	2.70
New occupied DU	508	1,097
Single-family dwelling units		
Percent single-family DU	75%	75%
New occupied single-family DU	385	832
Vacancy rate	4.0%	4.0%
Total new single-family DU	401	867
Multiple family dwelling units		
Percent multiple family DU	25%	25%
New occupied multiple-family DU	123	266
Vacancy rate	8.0%	8.0%
New multiple family DU	134	289
Totals		
<i>equals</i> Total new occupied dwelling units	508	1,098
Aggregate household size (persons/occupied DU)	2.70	2.70
<i>plus</i> Vacant dwelling units	27	58
<i>equals</i> Total new dwelling units	535	1,156
Dwelling units needed annually	53	58

Source: Calculations by ECONorthwest based on County population forecasts and US Census data.

HOUSING NEEDS ANALYSIS

The DLCDC Workbook describes four steps in analyzing housing needs in a community. Specifically, these steps are:

1. Identify relevant national, state, and local demographic and economic trends and factors that may affect the 20-year projection of structure type mix.
2. Describe the demographic characteristics of the population and, if possible, housing trends that relate to demand for different types of housing.
3. Determine the types of housing that are likely to be affordable to the projected households based on household income.
4. Determine the needed density ranges for each plan designation and the average needed net density for all structure types.

The remainder of this section is organized around this four-step process. Appendix B presents the results of the Housing and Community Services housing

model, which was used to estimate the number of additional needed units by structure type.

STEP 1. IDENTIFY RELEVANT NATIONAL, STATE, AND LOCAL DEMOGRAPHIC AND ECONOMIC TRENDS AND FACTORS THAT MAY AFFECT THE 20-YEAR PROJECTION OF STRUCTURE TYPE MIX

The first step in a housing needs assessment is to identify relevant national, state, and local demographic and economic trends and factors that affect local housing markets. The evaluation of housing trends that follows is based on previous research conducted by ECONorthwest for other housing needs studies as well as new research to update the evaluation of trends that may affect housing mix.

Previous work by ECO and conclusions from The State of the Nation's Housing, 2006 report from the Joint Center for Housing Studies of Harvard University inform the national, state, and local housing outlook for the next decade. The Joint Center for Housing Studies of Harvard University's The State of the Nation's Housing, 2006 report summarizes the national housing outlook for the next decade as follows:

“The housing boom came under increasing pressure in 2005. With interest rates rising, builders in many states responded to slower sales and larger inventories by scaling back on production. Meanwhile, the surge in energy costs hit household budgets just as higher interest rates started to crimp the spending of homeowners with adjustable mortgages.

Nevertheless, the housing sector continues to benefit from solid job and household growth, recovering rental markets, and strong home price appreciation. As long as these positive forces remain in place, the current slowdown should be moderate. Over the longer term, household growth is expected to accelerate from about 12.6 million over the past ten years to 14.6 million over the next ten. When combined with projected income gains and a rising tide of wealth, strengthening demand should lift housing production and investment to new highs.”

This evaluation presents a mixed outlook for housing markets and for homeownership, and points to the significant difficulties low- and moderate-income households face in finding affordable housing. Following is a summary of key national housing trends:

- Home prices in many parts of the country have risen considerably faster than household incomes. This rapid appreciation has raised concerns that housing is headed for a crash. Although more locations are now experiencing a home price decline than a year or two ago, a sharp correction is unlikely unless the economy unexpectedly contracts.

- Higher interest rates could greatly impact affordability, bringing home prices under pressure unless employment and income growth are strong enough to offset the increase.
- Despite growing concern over the pace of development, housing construction over the next 10 years is likely to exceed that of the last 10.
- While the short- and medium-term outlook depends on interest rates and the economy, the longer-term prospects for housing rely far more on demographic trends. Baby-boomers are aging into their peak income and wealth years, immigration is increasing, and household growth has been higher than expected. These factors bode well for housing investment over the next decade.
- New housing construction is expected to continue to grow, and will exceed the growth of households. A significant fraction of building activity offsets losses from the existing housing stock, adds to the supply of second homes, and accommodates the greater turnover of units that accompanies a larger household base.
- Because of recession, sagging labor markets, and high demand for homeownership, the demand for rental units has been weak over the past decade. Any imbalances between supply and demand may, however, prove temporary if the economy continues to expand and generate new jobs. Rental demand could surge if interest rates and/or housing prices rise.
- Despite unusually strong income growth in the 1990s, 95 million American experiences housing cost burdens or live in crowded or inadequate housing. More than twice as many people face housing problems as lack insurance.
- Minorities and immigrants play increasingly important role in housing market demand. Nationally, immigrants have accounted for more than a third of household growth since the 1990s. The minority share of households increased from 17% in 1980 to 26% in 2000, and is expected to reach 34% by 2020.
- Though minority homeownership rates still lag behind those of whites, minorities accounted for two out of every 5 net new home sales between 1994 and 2003.
- Women are becoming a more powerful presence in housing markets. Between 1980 and 2000, the number of households headed by unmarried women increased by almost 10 million. Over the same period, the median contribution of wives' earning to the dual-earner households rose from 30% to 37%.

- Though the majority of Americans are well housed, nearly a third of U.S. households spend 30% or more of their incomes on housing. These challenges are most severe among those in the lowest income brackets. These affordability pressures are unlikely to ease; many of the low wage jobs created by the economy do not pay enough for a household to afford to own or rent even a modest home.

A more detailed summary of national housing trends is presented in Appendix A.

STEP 2. DESCRIBE THE DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION AND, IF POSSIBLE, HOUSING TRENDS THAT RELATE TO DEMAND FOR DIFFERENT TYPES OF HOUSING

State and regional demographic and housing trends are important to a thorough understanding of the dynamics of the Sandy housing market. Sandy exists in a regional economy; trends in the region impact the local housing market. This section documents state and regional demographic and housing trends relevant to Sandy.

DEMOGRAPHIC TRENDS

This section reviews historical demographic trends in Clackamas County and Sandy. Demographic trends provide a broader context for growth in a region; factors such as age, income, migration and other trends show how communities have grown and shape future growth. To provide context, we compare the Sandy with Clackamas County and Oregon where appropriate. Characteristics such as age and ethnicity are indicators of how population has grown in the past and provide insight into factors that may affect future growth.

State Demographic Trends

Oregon's *2006-2010 Consolidated Plan* includes a detailed housing needs analysis as well as strategies for addressing housing needs statewide.⁵ 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:

- 11th fastest growing in the United States
- Facing dramatic housing cost increases
- Facing median and adjusted incomes less than those of 1999

⁵ http://www.ohcs.oregon.gov/OHCS/HRS_Consolidated_Plan_5yearplan.shtml

- Growing faster than national rates: 4.0% v. 3.3% and expecting a non-entitlement growth during this consolidated plan of about 6%, 82% of which will come from in-migration.
- Increasingly older
- Increasingly diverse
- Increasingly less affluent⁶

Richard Bjelland, State Housing Analyst at the Housing and Community Services Department of the State of Oregon, analyzed recent demographic changes taking place in Oregon and discussed their implications in a 2006 presentation “Changing Demographics: Impacts to Oregon and the US.” Some of Bjelland’s most significant findings are summarized below:

- Oregon’s **minority population is growing** quickly. Minorities made up 9.2% of the population in 1990 and 16.5% of the population in 2000, a 52% increase.
- **Hispanics and Latinos make up a large share of that population** and their growth rate is higher than non-Hispanics/ Latinos. The growth rate of Oregon’s non-Hispanic/ Latino population between 1990 and 2000 was 15.3% compared to 144.3% for Hispanics and Latinos.
- The **birth rates** of Hispanic/ Latino residents are higher than non-Hispanic/ Latino residents. In 1998, for the US, white non-Hispanic/ Latino residents had a birth rate of 12.3 per 1,000, lower than Asians and Pacific Islanders (16.4 per 1,000), black non-Hispanics (18.2 per 1,000) and Hispanic/ Latino (24.3 per 1,000).
- The share of resident births and deaths in Oregon shows the implications of that birthrate: Hispanic/ Latino residents accounted for 17.4% of births but only 1.4% of deaths in Oregon for 2001. In addition, **Hispanic/ Latino Oregonians are younger than non-Hispanic/ Latino residents**: in 2000, 75.9% of Hispanic/ Latino residents of Oregon are under age 35, compared to 45.7% of non-Hispanic/ Latino residents.
- In Oregon, Hispanic/ Latino **per capita income** in 2005 was only 44% of white per capita income.
- Hispanic/ Latino residents of Oregon become **homeowners** at younger ages than non-Hispanic/ Latino residents. Table 4-9 shows that Hispanic/ Latino Oregonians under 45 have higher homeownership rates than non-Hispanic/ Latino residents.

⁶ State of Oregon Consolidated Plan, 2006-2010, pg. 23.

Table 4-9. Oregon homeownership rates by age of householder, 2000

Age of householder	Non-Hispanic/Latino	Hispanic/Latino
25-34	10.2%	25.7%
35-44	20.6%	31.0%
45 and older	68.1%	39.4%

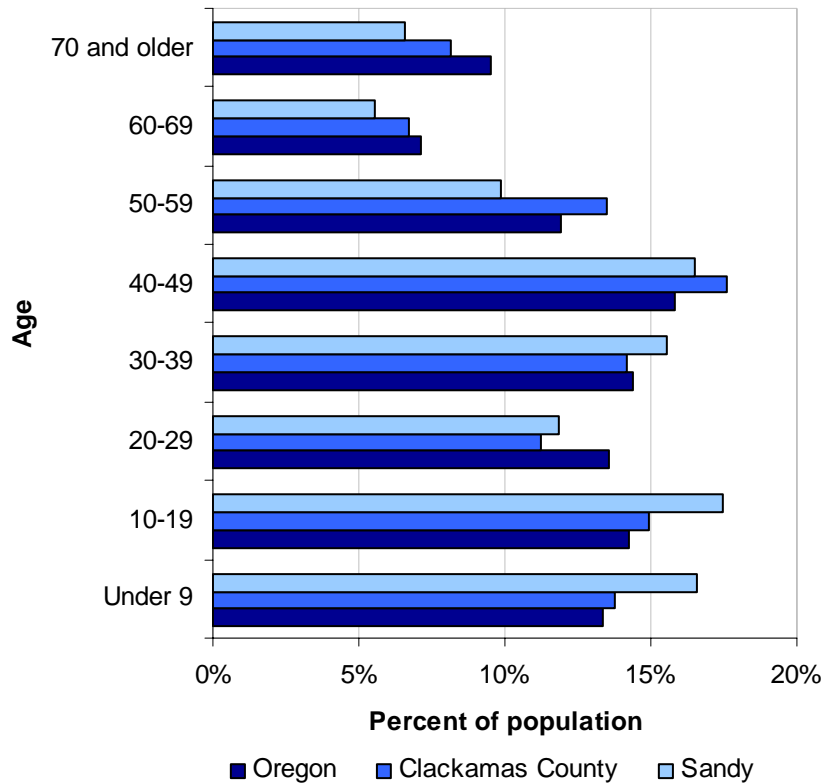
Source: Richard Bjelland, State Housing Analyst at the Housing and Community Services Department of the State of Oregon, "Changing Demographics: Impacts to Oregon and the US" 2006. He obtained his data from US Census 2000.

Regional Demographic Trends

Regional demographic trends largely follow the statewide trends discussed above, but provide additional insight into how demographic trends might affect housing in Sandy.

Figure 4-6 shows the populations of Oregon, Clackamas County, and Sandy by age for 2000. Sandy has a greater proportion of its population less than 30 years old than Oregon and Clackamas County, especially residents under 19 years. Sandy has fewer residents over 50 compared to the County and State averages.

Figure 4-6. Population distribution by age, Oregon, Clackamas County, and Sandy, 2000



Source: U.S. Census, 2000

Table 4-10 shows population by age for Sandy for 1990 and 2000. The data show that Sandy County grew by 1,233 people between 1990 and 2000, which is a 30% increase. The age breakdown shows that the City experienced an increase in population for every age group, except for people 65 years and older. The fastest growing age groups were aged 45 to 64 years, 5 to 17 years, and 25 to 44 years.

Table 4-10. Population by age, Sandy, 1990 and 2000

Age Group	1990		2000		Change		
	Number	Percent	Number	Percent	Number	Percent	Share
Under 5	383	9%	442	8%	59	15%	-1%
5-17	931	22%	1,224	23%	293	31%	0%
18-24	349	8%	446	8%	97	28%	0%
25-44	1,416	34%	1,686	31%	270	19%	-3%
45-64	582	14%	1,116	21%	534	92%	7%
65 and over	491	12%	471	9%	-20	-4%	-3%
Total	4,152	100%	5,385	100%	1,233	30%	0%

Source: U.S. Census, 1990 and 2000

Table 4-11 shows that Clackamas County’s population increased by 31% (86,873 people) between 1990 and 2006. The fastest growing age groups were

aged 45 to 64 years, 5 to 17 years, and 18 to 24 years. The slowest growing groups were under 5 years and 25 to 44 years.

Table 4-11. Population by age, Clackamas County, 1990 and 2006

Age Group	1990		2006		Change 1990 to 2006		
	Number	Percent	Number	Percent	Number	Percent	Share
Under 5	19,394	7%	21,324	6%	1,930	10%	-1%
5-17	55,009	20%	66,243	18%	11,234	20%	-2%
18-24	22,414	8%	33,119	9%	10,705	48%	1%
25-44	93,370	33%	98,875	27%	5,505	6%	-6%
45-64	56,674	20%	104,974	29%	48,300	85%	8%
65 and over	31,989	11%	41,188	11%	9,199	29%	0%
Total	278,850	100%	365,723	100%	86,873	31%	0%

Source: U.S. Census, 1990 and 2000

The data in Figure 4-6 and Tables 4-10 and 4-11 suggest that Clackamas County is attracting people nearing retirement or retirees and families with children. The age distribution in Figure 4-6 suggests that Sandy is attracting families with children, indicating that Sandy's population and age trends are somewhat different from the projections for the county as a whole.

Between 1990 and 1999, almost 70% of Oregon's total population growth was from net migration (in-migration minus out-migration), with the remaining 30% from natural increase (births minus deaths).⁷ Migrants to Oregon tend to have many characteristics in common with existing residents, with some differences—recent in-migrants to Oregon are, on average, younger and more educated, and are more likely to hold professional or managerial jobs, compared to Oregon's existing population. The race and ethnicity of in-migrants generally mirrors Oregon's established pattern, with one exception: Hispanics make up more than 7% of in-migrants but only 3% of the state's population. The number-one reason cited by in-migrants for coming to Oregon was family or friends, followed by quality of life and employment.⁸

Migration is a significant component of population growth in Clackamas County. Seventy-two percent of population growth in Clackamas County between 1990 and 2000 was from in-migration. This figure remained at 71% for the 2000-2006 period.⁹

The U.S. Census collects information about migration patterns. Specifically, it asks households where their residence was in 1995 (5 years prior to the Census count). Table 4-12 shows place of residence in 1995 for Oregon, Clackamas County, and Sandy. The data show that Sandy residents are more mobile than Clackamas County and Oregon residents. Less than half of residents in Oregon, or

⁷ Portland State University, Population Research Center, 2000. *1990-2000 Components of Population Change*

⁸ State of Oregon, Employment Department. 1999. *1999 Oregon In-migration Study*.

⁹ Portland State University, Population Research Center, 2006. *2006 Oregon Population Report and contents*

Sandy lived in the same residence in 1995 as in 2000. Twenty-four percent of Oregonians, 21% of residents of Clackamas County and 30% of residents of Sandy lived in a different county in 1995. Thirteen percent of residents of Sandy and 10% of residents of Clackamas County lived in a different state in 1995, compared with 12% of Oregonians.

Table 4-12. Place of residence in 1995, Oregon, Clackamas County, and Sandy, persons 5 years and over

Location	Oregon		Clackamas County		Sandy	
	Persons	Percent	Persons	Percent	Persons	Percent
Population 5 years and older	3,199,323	100%	316,516	100%	4,886	100%
Same house in 1995	1,496,938	47%	163,895	52%	2,104	43%
Different house in 1995:	1,702,385	53%	152,621	48%	2,782	57%
Same county	863,070	27%	65,830	21%	1,296	27%
Different county:	755,954	24%	80,465	25%	1,467	30%
Same state	356,626	11%	49,042	15%	841	17%
Different state	399,328	12%	31,423	10%	626	13%

Source: U.S. Census, 2000

Table 4-13 shows the number of persons of Hispanic or Latino origin for Oregon, Clackamas County, and Sandy for 1990 and 2000. Sandy has a smaller share of Hispanic residents as Oregon and Clackamas County. In 2000, Sandy's population was 4.1 % Hispanic, compared with 4.9% of residents in Clackamas County and the State average of 8.0%.

The Hispanic population grew slower in Sandy than in Clackamas County or Oregon from 1990 to 2000. Sandy's Hispanic population grew by 116% between 1990 and 2000. During the same period, Clackamas County's Hispanic population grew by 135% and Oregon's Hispanic population grew by 144%.

Table 4-13. Persons of Hispanic or Latino origin, Oregon, Clackamas County, and Sandy, 1990 and 2000

	Oregon	Clackamas County	Sandy
1990			
Total Population	2,842,321	278,850	4,152
Hispanic or Latino	112,707	7,129	102
Percent Hispanic or Latino	4.0%	2.6%	2.5%
2000			
Total Population	3,421,399	338,391	5,385
Hispanic or Latino	275,314	16,744	220
Percent Hispanic or Latino	8.0%	4.9%	4.1%
Change 1990-2000			
Hispanic or Latino	162,607	9,615	118
Percent Hispanic or Latino	144%	135%	116%

Source: U.S. Census, 2000

Table 4-14 shows the number and percent of Hispanic and Latino residents as a percent of the total population between 1990 and 2000. The number of Hispanic

and Latino residents is growing in the eastern Portland region. Hispanic population increased by more than 300% in Portland, Gresham, and Oregon City during the ten-year period.

Table 4-14. Persons of Hispanic or Latino origin, eastern Portland Region, 1990 and 2000

	1990		2000		Change	
	Number	Percent of Total	Number	Percent of Total	Number	Percent
Portland	13,874	3.2%	36,058	6.8%	22,184	159.9%
Gresham	2,284	3.3%	10,732	11.9%	8,448	369.9%
Oregon City	317	2.2%	1,283	5.0%	966	304.7%
Troutdale	251	3.2%	636	4.6%	385	153.4%
Happy Valley	8	0.5%	85	1.9%	77	962.5%

Source: US Census 1990 and 2000

In conclusion: (1) Sandy residents are younger than residents of Clackamas County, even as county-wide age levels are trending older; (2) residents of Sandy are more mobile than the State or County averages; and (3) the Hispanic population has historically grown more slowly in Sandy than in the State or County.

HOUSING TRENDS

Table 4-15 shows the permits issued for new single-family dwellings in selected cities in the eastern part of the Portland Metro Region between 1996 and 2005. Table 4-15 shows that most cities experienced an increase in housing permit activity between 2001 to 2003. The number of building permits issued varied the most in Happy Valley, West Linn, and Troutdale.

Table 4-15. Permits issued for new single-family dwellings, selected eastern Portland Metro Region cities, 1996-2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Portland	-	1,071	1,155	929	866	1,040	1,088	1,093	956	981	9,179
Gresham	342	305	287	443	319	471	461	401	373	350	3,752
Oregon City	347	232	287	465	334	311	250	259	208	214	2,907
Happy Valley	66	153	153	141	87	159	184	224	216	566	1,949
West Linn	169	190	116	94	216	292	183	85	47	76	1,468
Sandy	46	31	65	104	150	176	162	123	93	162	1,112
Lake Oswego	113	67	146	115	96	102	82	76	94	139	1,030
Troutdale	236	118	78	24	20	23	23	20	122	216	880
Gladstone	24	13	15	11	4	26	25	47	-	-	165

Source: www.city-data.com, 2007

SUMMARY OF KEY DEMOGRAPHIC AND HOUSING TRENDS

Sandy has a larger share of young people than Clackamas County as a whole

- **Sandy** has a higher percentage than **Clackamas** County of people under age 30.
- The age structures in Sandy and Clackamas County have experienced similar changes. The fastest growing age groups in both areas were 45 to 64 years, followed by 5 to 17 years. This suggests that both areas are attracting families with school-aged children. However, Clackamas County attracted people over 65 years, while Sandy lost people in that age category.

Migration is an important component of recent growth in Clackamas County and will continue to be a key factor in future population growth.

- In-migration accounted for more than 70% of population growth in **Clackamas** County between 1990 and 2006.
- **Sandy's** population was more mobile than the County's as a whole. Only 43% of the residents of **Sandy** lived in the same house in 2000 as they did in 1995 compared to 52% for all of **Clackamas** County. A greater share of the population in **Sandy** moved within **Clackamas** County during that time period (30%) than for **Lane** County as a whole (25%). A larger share of population in Sandy lived in a different state in 1995 (13%), compared to the County average (10%).

Sandy is becoming more ethnically diverse.

- **Sandy's** Hispanic population grew by 116% between 1990 and 2000, compared with 135% growth in **Clackamas** County's Hispanic population during the same period.
- Other cities in the eastern Portland region experienced triple-digit growth in Hispanic populations. The communities experiencing the largest increase in the Hispanic populations were Portland (22,184), Gresham (8,448), and Oregon City (966).

Hispanic/Latino residents have younger households.

- The birth rates for Hispanic/ Latino residents (1998 data) are 24.3 per 1,000 compared to 12.3 per 1,000 for non-Hispanic/ Latino residents.
- Hispanic/ Latino residents accounted for 17.4% of births and only 1.4% of deaths in Oregon in 2001.
- In 2000, 75.9% of Hispanic/ Latino Oregonians are under 35 compared to 45.7% of non-Hispanic/ Latino residents.

Hispanic/Latino residents typically have lower incomes but become homeowners at younger ages than non-Hispanic/ Latino residents

- Per capita income in Oregon in 2005 for Hispanic and Latino residents was only 44% of white per capita income/
- 56.7% of Hispanic/ Latino residents of Oregon under age 45 are homeowners, compared to 30.8% of non-Hispanic/ Latino residents

Sandy is part of a complex, interconnected regional housing market.

- Development of single-family detached dwellings was greatest in Portland, Gresham, and Oregon City between 1996 and 2005.
- Commuting is typical throughout the region: **the majority of Sandy's** workforce lives in **Clackamas** County, but most do not reside in the City of **Sandy**. About one-third of Sandy's workforce lives in Multnomah County.

Housing types are trending towards larger units on smaller lots.

- Between 1994 and 2004 the median size of new single-family dwellings increased 14%, from 1,900 sq. ft. to 2,169 sq. ft. nationally and 17% in the western region from 1,810 sq. ft. to 2,126 sq. ft. Between 1994 and 2004 the percentage of lots under 7,000 sq. ft. increased 6% from 29% of lots to 35% of lots. A corresponding 6% decrease in lots over 11,000 sq. ft. is seen.¹⁰
- Even when controlling for income and savings, level of education, age, marital status, family size, the housing market in which the unit was located [and other factors], compared to whites both black families and Hispanic families had significantly lower likelihood of homeownership, lower house values (for owners) and lower rents (for renters).¹¹
- Minority households have substantially lower rents than white households.¹²
- Hispanic households, particularly low-income families, have higher levels of mortgage debt than do white households, although their house values are lower than whites. This suggests a substantial difference in borrowing or loan terms for Hispanics.¹³

¹⁰ Joint Center for Housing Studies of Harvard University, "The State of the Nation's Housing," 2006.

¹¹ Boehm, Thomas P. and Alan M. Schlottmann, "Housing Tenure, Expenditure, and Satisfaction Across Hispanic, African American, and White Households: Evidence from the American Housing Survey." US Department of Housing and Urban Development, February 2006.

¹² Boehm, Thomas P. and Alan M. Schlottmann, "Housing Tenure, Expenditure, and Satisfaction Across Hispanic, African American, and White Households: Evidence from the American Housing Survey." US Department of Housing and Urban Development, February 2006.

¹³ Boehm, Thomas P. and Alan M. Schlottmann, "Housing Tenure, Expenditure, and Satisfaction Across Hispanic, African American, and White Households: Evidence from the American Housing Survey." US Department of Housing and Urban Development, February 2006.

STEP 3. DETERMINE THE TYPES OF HOUSING THAT ARE LIKELY TO BE AFFORDABLE TO THE PROJECTED HOUSEHOLDS BASED ON HOUSEHOLD INCOME

Step three of the housing needs assessment results in an estimate of need for housing by income and housing type. This requires some estimate of the income distribution of future households in the community. ECO developed these estimates based on HUD section 8 program data for household income and fair market rents.

A typical standard used to determine housing affordability is that a household should pay no more than 30% of its total monthly household income for housing, including utilities. According to the U.S. Census, 570 households in Sandy—about 27%—paid more than 30% of their income for housing in 2000.

One way of exploring the issue of financial need is to review wage rates and housing affordability. Table 4-16 shows an analysis of affordable housing wage and rent gap for households in Sandy at different percentages of median family income (MFI). The data are for a typical family of four. The results indicate that a household must earn \$14.13 an hour to afford a two-bedroom unit according to HUD's market rate rent estimate.

Table 4-16. Analysis of affordable housing wage and rent gap by HUD income categories, Clackamas County, 2007

Value	Minimum Wage	30% MFI	50% MFI	80% MFI	100% MFI	120% MFI
Annual Hours	2086	2086	2086	2086	2086	2086
Derived Hourly Wage	\$7.80	\$9.18	\$15.29	\$24.47	\$30.58	\$36.70
Annual Wage At Minimum Wage	\$16,271	\$19,140	\$31,900	\$51,040	\$63,800	\$76,560
Annual Affordable Rent	\$4,881	\$5,742	\$9,570	\$15,312	\$19,140	\$22,968
Monthly Affordable Rent	\$407	\$479	\$798	\$1,276	\$1,595	\$1,914
HUD Fair Market Rent (2 Bedroom)	\$737	\$737	\$737	\$737	\$737	\$737
Is HUD Fair Market Rent Higher Than The Monthly Affordable Rent?	Yes	Yes	No	No	No	No
Rent Paid Monthly OVER 30% of Income	\$330	\$259	na	na	na	na
Rent Paid Annually OVER 30% of Income	\$3,963	\$3,102	na	na	na	na
Percentage of Income Paid OVER 30% of Income for Rent	24%	16%	na	na	na	na
Total Spent on Housing	54%	46%	28%	17%	14%	12%
For this area what would the "Affordable Housing Wage" be?	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13
The Affordable Housing Wage Gap IS:	\$6.33	\$4.96	na	na	na	na

Source: HUD, Oregon office; analysis by ECONorthwest
MFI: Median family income; MFI for the region in 2007 was \$63,800

The total amount a household spends on housing is referred to as cost burden. Total housing expenses are generally defined to include payments and interest or rent, utilities, and insurance. HUD guidelines indicate that households paying more than 30% of their income on housing experience “cost burden” and households paying more than 50% of their income on housing experience “severe cost burden.” Using cost burden as an indicator is consistent with the Goal 10 requirement of providing housing that is affordable to all households in a community.

Table 4-17 shows housing costs as a percent of income by tenure for Sandy households in 2000. The data show that about 34% of Sandy households experienced cost burden in 2000. The rate was higher for renters (40%) than for homeowners (30%).

A larger share of Sandy's residents were cost burdened compared to Clackamas County. Thirty percent of Clackamas County residents were cost burdened, compared to 34% of Sandy's households. The share of home owner households cost burdened in Clackamas County was lower than Sandy, 26% compared to 30% of renter households. Rates of cost burden for renters was similar between Sandy and Clackamas County.

Frequency of cost burden was similar between Sandy and Oregon, with 32% of Oregon's households 34% of Sandy's households experiencing cost burden. Sandy had a larger share of home owner households experience cost burden than the state average, 30% compared to the state average of 25%. A smaller share of renters experienced cost burden in Sandy than the state average, 40% compared to 42%.

Table 4-17. Housing cost as a percentage of household income, Sandy 2000

Percent of Income	Owners		Renters		Total	
	Number	Percent	Number	Percent	Number	Percent
Less than 20%	423	39%	164	27%	587	35%
20% - 24%	182	17%	98	16%	280	17%
25% - 29%	149	14%	102	17%	251	15%
30% - 34%	53	5%	38	6%	91	5%
35% or more	273	25%	206	34%	479	28%
Total	1,080	100%	608	100%	1,688	100%
Cost Burden	326	30%	244	40%	570	34%

Source: 2000 Census

Table 4-18 shows a rough estimate of affordable housing cost and units by income levels for Sandy in 2000. Several points should be kept in mind when interpreting this data:

- Because all of the affordability guidelines are based on median family income, they provide a rough estimate of financial need and may mask other barriers to affordable housing such as move-in costs, competition for housing from higher income households, and availability of suitable units. They also ignore other important factors such as accumulated assets, purchasing housing as an investment, and the effect of down payments and interest rates on housing affordability.
- Households compete for housing in the marketplace. In other words, affordable housing units are not necessarily available to low income households. For example, if an area has a total of 50 dwelling units that are affordable to households earning 30% of median family income, 50%

of those units may already be occupied by households that earn more than 30% of median family income.

The data in Table 4-18 indicate that in 2000:

- About 15% of Sandy households could not afford a studio apartment according to HUD’s estimate of \$563 fair market rent.
- Nearly one-third of Sandy households could not afford a two-bedroom apartment according to HUD’s estimate of \$702 fair market rent.
- A household earning a median family income (\$53,700) could afford a home valued up to \$161,100.

A brief comparison of affordability in Sandy to Clackamas County shows that Sandy has a smaller share of households that are unable to afford the fair market rent for a studio apartment. Sandy has a larger share of households that are unable to afford a two-bedroom apartment.

Table 4-18. Rough estimate of housing affordability, Sandy, 2000

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)	Notes
Less than \$10,000	118	6.1%	\$0 to \$250	\$0 to \$25,000	100	69	50	
\$10,000 to \$14,999	124	6.4%	\$250 to \$375	\$25,000 to \$37,000	23	62	(39)	
\$15,000 to \$24,999	263	13.5%	\$375 to \$625	\$37,500 to \$62,500	72	139	(52)	2000 HUD FMR Studio: \$463; 1 bdrm: \$569
\$25,000 to \$34,999	235	12.1%	\$625 to \$875	\$62,500 to \$87,500	65	201	31	HUD FMR 2 bdrm: \$702
\$35,000 to \$49,999	409	21.0%	\$875 to \$1,250	\$87,500 to \$125,000	115	96	(198)	HUD FMR 3 bdrm: \$976; 4 bdrm: \$1,060
\$50,000 to \$74,999	468	24.0%	\$1,250 to \$1,875	\$125,000 to \$187,500	646	31	208	
Clackamas County 2000 MFI:	\$53,700		\$1,343	\$161,100				
\$75,000 to \$99,999	182	9.3%	\$1,875 to \$2,450	\$187,500 to \$245,000	215	8	41	
\$100,000 to \$149,999	99	5.1%	\$2,450 to \$3,750	\$245,000 to \$375,000	65	0	(34)	
\$150,000 or more	50	2.6%	More than \$3,750	More than \$375,000	42	0	(8)	
Total	1,948	100.0%			1,342	606	0	

Source: U.S. Census, 2000, U.S. Department of Housing and Urban Development, and Oregon Housing & Community Services. *Housing Strategies Workbook: Your Guide to Local Affordable Housing Initiatives*, 1993
Notes FMR- Fair Market Rent and MFI – Median Family Income

As a final step in the housing affordability analysis, ECO performed a rough correlation of income with needed housing types as defined by ORS 195.303. This analysis is also consistent with guidance provided in the Workbook.¹⁴ Table 4-19 shows ECO’s evaluation for market segments, incomes, and financially attainable housing products. We use the HUD income guidelines as the market segments and Census data for the income distribution. The table provides an estimate of financially attainable housing types by income and tenure. Households in the upper-middle and high-income segments will be able to afford new housing. The data shown in Table 4-19 suggest that in 2007 Sandy had a need for nearly 634 low-income housing units (units for households with incomes less than \$31,900).

¹⁴ Specifically, Step 4, page 29 and the figure on page D-11.

Table 4-19. Financially attainable housing type by income range, Sandy, 2007

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)	\$76,560 or more	676	29%	All housing types; higher prices	All housing types; higher prices	↑ Primarily New Housing
Upper Middle (80%-120% of MFI)	\$51,040 to \$76,560	536	23%	All housing types; lower values	All housing types; lower values	
Lower Middle (50%-80% of MFI)	\$31,900 to \$51,040	474	20%	Manufactured on lots; single-family attached; duplexes	Single-family attached; detached; manufactured on lots; apartments	↓ Primarily Used Housing
Lower (30%-50% of less of MFI)	\$19,140 to \$31,900	321	14%	Manufactured in parks	Apartments; manufactured in parks; duplexes	
Very Low (Less than 30% of MFI)	Less than \$19,140	313	14%	None	Apartments; new and used government assisted housing	

Source: 2007 income distribution from Oregon Prospector (www.oregonprosepector.com); 2007 Median Family Income from HUD (\$63,800); Estimates by ECONorthwest

Changes in housing cost, 2000-2006

Table 4-20 shows sales prices for single-family dwellings for Clackamas County, Sandy, and selected cities in the eastern Portland Metro Region between 2000 and 2006. Table 4-20 shows that Sandy’s median sales prices have been lower than median sales prices in Clackamas County over the entire time period. Median prices increased at a slower rate in Sandy, with an increase of 58% over the six year period, compared to the County’s 76% increase. In 2006, the median sales price of a single-family dwelling unit in Sandy was \$232,725, 72% of the County median sales price.

Table 4-20. Average and medial sales price for single-family dwellings, Clackamas County, Sandy, and selected cities, 2000-2006

	2000	2006	Change 2000 to 2006		
			Amount	Percent	AAGR
Average Sales Price					
Lake Oswego	\$343,413	\$609,919	\$266,507	78%	10.0%
Happy Valley	\$225,347	\$522,671	\$297,324	132%	15.1%
Clackamas County	\$234,549	\$404,030	\$169,481	72%	9.5%
Damascus	\$222,476	\$383,307	\$160,831	72%	9.5%
Gresham	\$174,780	\$271,441	\$96,661	55%	7.6%
Sandy	\$146,258	\$240,069	\$93,811	64%	8.6%
Median Sales Price					
Lake Oswego	\$282,750	\$525,000	\$242,250	86%	10.9%
Happy Valley	\$216,750	\$489,900	\$273,150	126%	14.6%
Damascus	\$212,900	\$374,900	\$162,000	76%	9.9%
Clackamas County	\$185,000	\$325,000	\$140,000	76%	9.8%
Gresham	\$164,500	\$247,500	\$83,000	50%	7.0%
Sandy	\$147,500	\$232,725	\$85,225	58%	7.9%

Source: Metro RLIS, Analysis by ECONorthwest

Government and Nonprofit Assisted Housing

Governmental agencies and nonprofit organizations offer a range of housing assistance. Government programs that assist low-income households in renting or purchasing a home include:

- **Section 8 voucher system** allows very low-income families (including elderly and disabled) to choose where they want to live by providing rental certificates that limit tenants' rent to 30% of their monthly income. The program is administered by local housing authorities; HUD pays participating landlords the difference between market rent, as determined by HUD, and what the family is able to pay. Qualified Section 8 participants may use their vouchers to pay rent or participate in lease-to-own or homeownership programs.
- **Public housing** are government provided low cost housing in multi-unit complexes that are available to low-income, mostly elderly or disabled, residents. Managed by local housing authorities, typically require tenants to pay no more than 30% of their monthly income for rent.
- **HUD landlord subsidies** give funds directly to apartment owners, who lower the rents they charge low-income tenants. Some units are designed for senior citizens or people with disabilities, others for families and individuals.
- **Section 202** provides housing for low-income senior citizens and often includes services such as meals, transportation, and accommodations

for the disabled. Programs are sponsored on a complex-by-complex basis by non-profit organizations or consumer cooperatives.

- **Subsidized mortgages** programs are state-sponsored programs that reduce the interest rate for homes purchased within the state to qualified low-income first-time homebuyers. Other programs that offer low interest rate loans include:
 - **Rural Housing Section 502 Direct Loans** are loans that are directly funded by the government. These loans are available for low- and very low-income families to obtain homeownership in eligible rural areas. Family adjusted income must be below 80 percent of the area median income. Applicants may obtain 100% financing to purchase an existing dwelling, purchase a site and construct a dwelling, or purchase newly constructed dwellings.
 - **Rural Housing Guaranteed Loans** are loans funded by approved lenders and guaranteed by the US Dept of Agriculture. Family adjusted income must be below 115 percent of the area median income. Applicants may obtain 100% financing to purchase an existing dwelling or purchase newly constructed dwellings.
 - **Veteran's Affairs loans** are home loans offered to eligible veterans, some military personnel, and certain surviving spouses. The VA can guarantee part of a loan from a private lender, and can issue loans for building, repairing, and improving homes, loans for refinancing existing loans, and special grants for retrofitting a home to accommodate a disability.
- **Other homeownership assistance** include a variety of down payment assistance programs run by states, counties, cities, business organizations, and non-profit organizations for low-income families. To be eligible the buyer must qualify for a mortgage with a lender, complete a certified home ownership education program and, in most cases, have some money from their own resources as the match for the down payment assistance.

Nonprofit organizations provide a wide variety of housing assistance to low-income households and individuals. Nonprofits provide assistance with renting or purchasing housing, as well as services (such as emergency food, low-cost medical services, or transportation assistance). The types of housing assistance that nonprofits provide vary by community and may include:

- **Homeless shelters/ temporary housing programs** that serve the temporarily or long-term homeless population and may be run by non-profit organizations, churches, or cities.
- **Rentals with services** may serve special low-income populations, such as the disabled, elderly, chronically homeless, or ex-offender

populations, with housing and associated services, such as meals, assistance finding employment, and alcohol or drug treatment programs.

- **Below market rent rentals** units may be developed as part of a city or county's requirement for developers to rent a certain percentage of units in new development at below market rate prices affordable to lower income renters, and are also developed by non-profit organizations. To be eligible to rent these types of units, a household must meet specific income requirements and units rented through these programs may be subject to resale restrictions.
- **Lease-to-own** programs allow qualified buyers to select a home and lease it, usually from a non-profit organization, then purchase the home and assume the mortgage at the end of the lease term. These programs often lock in the purchase price when the participant begins the lease, and most only allow the participant to lease the home for a limited time.
- **Sweat equity programs** requires the homebuyer's participation in the construction of the housing. The sweat equity and labor contributions by the homebuyers and volunteers significantly reduce the cost of the housing. Sweat equity programs may be run by non-profit organizations such as Habitat for Humanity International, and may be the recipient of HUD SHOP grants, which are provided to national and regional nonprofit organizations that have experience in providing self-help housing to purchase land and make improvements on infrastructure.

Sandy has a variety of publicly and privately assisted housing options. According to the Housing Authority of Clackamas County, Sandy has 40 households with Section 8 vouchers. There is a four year waitlist for Section 8 vouchers in Clackamas County. The Housing Authority also has eight public housing units in Sandy, with a wait list of 18 months to two years. There are five housing complexes operated by nonprofit organizations in Sandy, with approximately 110 units ranging in size from one- to three-bedrooms. Most of the complexes are designed to help a specific group, such as senior or disabled people or migrant farm workers. The long wait list for both Section 8 vouchers and units at the housing complexes suggests that the need for affordable housing is greater than the supply of affordable housing for low-income households.

STEP 4: DETERMINE THE NEEDED DENSITY RANGES FOR EACH PLAN DESIGNATION AND THE AVERAGE NEEDED NET DENSITY FOR ALL STRUCTURE TYPES

As described in the DLCD Workbook, this step results in an estimate of the needed net density range for each plan designation, based on the types of structures that are allowed, and on an estimate of the density at which each

structure type is likely to develop based on development trends and local policies. Allowed structure types are the same as the needed housing types identified in ORS 197.303 and include:

- Single-family detached units – includes stick-built single-family detached units and manufactured homes on individual lots
- Manufactured – includes manufactured or mobile homes in mobile home parks. Manufactured homes on individual lots are treated as single-family detached dwellings.
- Single-family attached dwellings – includes owner-occupied condominiums, townhomes, row houses and other single-family attached units
- Multifamily – includes duplex, tri-plex, four-plex, and apartment buildings with five or more units.

The density and mix analysis does not include an estimate of needed government-assisted housing. ORS 197.303 requires cities to plan for government assisted housing. Government assisted housing can be any of the types listed above. Because the city allows government assisted housing in all of its residential designations, and government assisted housing is similar in character as other housing (with the exception of government subsidies), the City finds that it is not necessary to develop separate density estimates for these housing types.

Table 4-21 shows the forecast of needed housing units in Sandy for the period 2009-2019 and 2009-2029. The forecasts shows land need in net acres.¹⁵ Net acres is the amount of land needed for housing, not including public infrastructure (e.g., roads) or services (e.g., schools or parks). Gross acres is the estimated amount of land needed for housing inclusive of public infrastructure and services.

The forecast indicates that Sandy will need about 79 net residential acres to accommodate housing between 2009 and 2019, and about 170 net residential acres to accommodate new housing between 2009 and 2029. The forecast results in an average residential density of 6.8 dwelling units per net residential acre.

¹⁵ This analysis uses the net-to-gross acre “safe harbor” assumption defined in OAR 660-024-0040 (9): “As a safe harbor during periodic review or other legislative review of the UGB, a local government may estimate that the 20-year land needs for streets and roads, parks and school facilities will together require an additional amount of land equal to 25 percent of the net buildable acres determined for residential land needs under section (4) of this rule. For purposes of this rule, a “Net Buildable Acre” consists of 43,560 square feet of residentially designated buildable land, after excluding present and future rights-of-way, restricted hazard areas, public open spaces and restricted resource protection areas.”

Table 4-21. Forecast of needed housing units by mix and density, Sandy, 2009-2019 and 2009-2029

Housing Type	New DU	Percent	Density (DU/net res ac)	Net Res. Acres
Needed Units, 2009-2019				
Single-family types				
Single-family detached	342	64%	5.5	62.2
Manufactured in parks	5	1%	8.0	0.7
Single-family attached	53	10%	10.0	5.3
Subtotal	401	75%	5.9	68.3
Multi-family				
Multifamily	134	25%	13.0	10.3
Subtotal	134	25%	13.0	10.3
Total	535	100%	6.8	78.5
Needed Units, 2009-2029				
Single-family types				
Single-family detached	740	64%	5.5	134.5
Manufactured in parks	12	1%	8.0	1.4
Single-family attached	115	10%	10.0	11.5
Subtotal	867	75%	5.9	147.4
Multi-family				
Multifamily	289	25%	13.0	22.2
Subtotal	289	25%	13.0	22.2
Total	1,156	100%	6.8	169.6

Source: ECONorthwest

Sandy makes the following findings in support of the density assumptions used in Table 4-21:

- National homeownership trends increased over the past five years to nearly 70%. The homeownership rate in Sandy in 2000 was lower at 69%. It is the policy of the City to provide homeownership opportunities to Sandy residents.
- The City assumes a tenure split of 65% owner-occupied and 35% renter-occupied units. This figure is lower than the 2000 Census which reported that 69% of dwellings were owner-occupied, but higher than the HCS model output which predicts a 62% ownership rate.
- The housing mix in 2000 was 78% single-family housing types (including single-family attached, detached, and manufactured units). In 2007, the percentage of single-family housing was still 78% single-family. However, the percentage of single-family types that were manufactured homes decreased from 11% in 2000 to 6% in 2007.
- The HCS Housing Needs Model run predicts a need for about 75% single-family dwellings. This assumption is supported by data from the 2000 Census and from the HCS model run (see Appendix B). The housing mix assumption is consistent with the HCS model run output of 75% single-

family. About one-half percent of the housing need (12 dwellings) predicted by the HCS model is for manufactured homes in parks. This represents a small shift towards more multifamily dwellings over the planning period.

- Ten percent of the single-family housing need is for single-family attached dwellings. Single-family attached dwellings can be considered an affordable housing type. In fact, the Metropolitan Housing Rule (OAR 660-007-0030(1)) includes single-family attached as part of the 50% multifamily housing mix.¹⁶ If this definition were applied to Sandy, the housing mix would be 65% single-family and 35% multifamily.
- The number of needed new units estimated by ECONorthwest for the 2009-2029 period is 1,156. The HCS model estimates a need for 1,287 new dwellings for the 2009-2029 period. The assumptions and methods ECO used to get to that figure are shown in Table 4-8. ECO was unable to determine how the HCS model calculated future unit needs. To be conservative, the land needs estimates in this study are built from the ECO estimate of needed units. The 153 dwelling unit difference equates to an overall land need of about 25 acres.
- The average density of all housing types between 1998 and 2006 was 6.9 dwellings per gross residential acre. Low-density residential averaged 5.4 dwellings per gross acre, medium-density averaged 6.8 dwellings per gross acre, high-density residential average 9.6 dwellings per gross acre, and the Village designation averaged 7.9 dwellings per gross acre.
- The City assumes the following *net* densities by housing type for the 2009-2029 period:¹⁷

Table 4-22. Needed Net Density by Housing Type, Sandy, 2009-2029

Housing type	Density (DU/Net Acre)	Avg Lot Size (sq. ft.)
Single-family detached	5.5	7,920
Single-family attached	10.0	4,356
Manufactured in parks	8.0	5,445
Multifamily	13.0	3,351

The assumed densities are based on historical densities, local land use policies, and market factors. The average lot sizes are derived from the net

¹⁶ Specifically, OAR 660-007(1) states “Jurisdictions other than small developed cities must either designate sufficient buildable land to provide the opportunity for at least 50 percent of new residential units to be attached single family housing or multiple family housing or justify an alternative percentage based on changing circumstances.”

¹⁷ The City’s adopted housing needs analysis uses *gross* densities. Consistent with guidance provided in the DLCD *Workbook*, ORS 197.296, and OAR 660-024, this analysis uses *net* densities.

density assumptions (e.g., 43,560 sq. ft. per acre divided by net density equals average lot size in sq. ft.).

- Topography, lot configurations, and other factors typically reduce land use efficiency. The assumed average densities account for land use inefficiencies.
- The housing needs analysis identified needs for all housing types at all income levels. This includes lower cost housing affordable to households earning less than 80% of the area median income as well as housing affordable to households earning more than 120% of the area median income.
- The HCS Housing Needs model predicts that 40% of Sandy’s housing needs will be for dwellings valued at \$236,000 or more and rents of more than \$1,143 (in 2006 dollars). The median sales price of single-family homes in Sandy was \$232,000 in 2006. A \$236,000 home in 1999 would be worth approximately \$373,000.
- Based on output from the HCS housing needs model, the City assumes the following needed housing mix: 64% single-family detached, 10% single-family attached, 1% manufactured in parks, and 25% multifamily (all types). Note that the 10% single-family attached units assume a density of 10 dwelling units per net acre—a density that is more typical of multifamily housing types.
- The needed housing mix and density results in an overall average needed density of 6.8 dwellings per net acre.

In summary, the City assumes that net densities will decrease slightly during the planning period in order to meet the identified needs of medium and higher income households.¹⁸ Based on the findings above, the City identifies the following needed density ranges by plan designation:

Plan Designation	Needed Density Range
Low-Density Residential	3 to 8 DU/Net Acre
Medium Density Residential	8 to 14 DU/Net Acre
High Density Residential	10 to 20 DU/Net Acre
Village	5 to 20 DU/Net Acre

The final step in the housing needs analysis is to allocate housing needs by plan designation to determine the number of needed housing units and gross acres required to meet identified housing needs for the 20-year period. Table 4-21 provides an allocation of housing units by Sandy’s four residential plan designations. It also provides an estimate of the net acres required in each zone to

¹⁸ Because the analysis of historical densities is in gross acres, it is not possible to determine the amount of this decrease.

accommodate needed housing units. The acreages are based on the net density assumptions shown in Table 4-22.

Based on the housing needs analysis, ECO made the following allocations of housing by plan designation and type:

- The needed housing mix is 75% single-family (including manufactured and condos and townhomes) and 25% multifamily. Consistent with Table 4-21 and the findings above, the overall needed density is 6.8 dwellings per net acre.
- Thirty-six percent of needed dwelling units will locate in the Low Density Residential designation, which allows single-family detached, single-family attached, manufactured (on lots and manufactured home parks in the R-1 zone)), row houses, and duplexes (subject to siting standards).
- Nineteen percent of needed dwellings will locate in the Medium Density Residential designation, which allows single-family detached, single-family attached, manufactured home parks, row houses, duplexes, and multifamily.
- Seventeen percent of needed dwelling units will locate in the High Density Residential designation, which allows single-family detached (in conjunction with a planned development), single-family attached, manufactured (single detached and manufactured home parks), row houses, duplexes, and multifamily.
- Twenty-eight percent of needed dwellings will locate in the Village designation, which allows single family residential (when identified as part of a specific area plan), low density residential, medium density residential, high density residential. The Village designation allows all housing types allowed in the R-1, R-2, and R-3 zones, including single-family detached, single-family attached, row homes, manufactured homes in parks, duplexes, and multifamily dwellings.
- Manufactured dwellings on lots are allowed in all designations that allow single-family housing.
- Manufactured dwellings in parks are allowed in the Low-Density (R-1 zone), Medium- and High- density designations.

Table 4-23. Allocation of needed housing units by plan designation, 2009-2029

Housing Type	Plan Designation								Total	
	Low Density		Med. Density		High Density		Village			
	DU	Gross Ac	DU	Gross Ac	DU	Gross Ac	DU	Gross Ac	DU	Gross Ac
Single-family										
Single-family detached	404	98.0	116	28.0	23	5.6	197	47.8	740	179.4
Manufactured in parks	0	0.0	12	1.9	0	0.0	0	0.0	12	1.9
Single-family attached	12	1.5	57	7.6	23	3.1	23	3.1	115	15.3
Subtotal	416	99.6	185	37.5	46	8.7	220	50.8	867	196.6
Multi-family										
Multi-family	0	0.0	35	3.6	150	15.4	104	10.7	289	29.6
Subtotal	0	0.0	35	3.6	150	15.4	104	10.7	289	29.6
Total	416	99.6	220	41.1	196	24.1	324	61.5	1,156	226.2
Percent of Acres and Units										
Single-family										
Single-family detached	35%	43%	10%	12%	2%	2%	17%	21%	64%	79%
Manufactured in parks	0%	0%	1%	1%	0%	0%	0%	0%	1%	1%
Single-family attached	1%	1%	5%	3%	2%	1%	2%	1%	10%	7%
Subtotal	36%	44%	16%	17%	4%	4%	19%	22%	75%	87%
Multi-family										
Multi-family	0%	0%	3%	2%	13%	7%	9%	5%	25%	13%
Subtotal	0%	0%	3%	2%	13%	7%	9%	5%	25%	13%
Total	36%	44%	19%	18%	17%	11%	28%	27%	100%	100%

Source: ECONorthwest

To determine needed gross acres, the Sandy housing needs analysis uses the safe harbor assumption defined in OAR 660-024-0040(9):

“As a safe harbor during periodic review or other legislative review of the UGB, a local government may estimate that the 20-year land needs for streets and roads, parks and school facilities will together require an additional amount of land equal to 25 percent of the net buildable acres determined for residential land needs...”

Table 4-24 shows needed net and gross acres for housing within the Sandy UGB for the 2009-2029 period. The results show that Sandy will need about 244 gross residential acres to accommodate housing and other public land needs during the 2009-2029 period.

Table 4-24. Land needed for housing, Sandy UGB, 2009-2029

Land Use	Needed DU	Land Need (Net Acres)	Land Need (Gross Acres)	Percent of Gross Acres
Residential				
Single-family detached	740	134.5	179.3	74%
Manufactured in Parks	12	1.4	1.9	1%
Single-family attached	115	11.5	15.3	6%
Multifamily	289	22.2	29.6	12%
Subtotal - Residential	1,156	169.6	226.1	93%
Other (Semi-Public)			17.4	7%
Total Land Need			243.5	100%

Source: ECONorthwest

SUMMARY

The housing needs analysis for Sandy suggests the city will need to plan for a variety of housing types. Specific housing needs for the 2009-2029 period include:

- Need for all housing types: single-family attached and detached, manufactured homes, apartments, and government assisted housing (which can be any housing type). This includes a need for 1,156 new dwelling units for the 2009-2029 period.
- Need for housing of all types affordable to all income-levels but especially for housing affordable to low-income households.
- Sandy has a needed housing mix of 75% single-family/25% multiple family, a needed tenure of 65% owner-occupied and 35% renter occupied dwellings, and a needed density of 6.8 dwellings per net buildable acre.
- Sandy will need 244 gross acres to accommodate housing and other public land needs during the 2009-2029 period.

Sandy Economic Opportunities Analysis

Chapter 5

This chapter presents an economic opportunities analysis (EOA) for the City of Sandy consistent with the requirements of statewide planning Goal 9 and the Goal 9 administrative rule (OAR 660-009) as revised in December 2005. Chapter 2 includes a 20-year forecast of employment for Sandy and this chapter includes the forecast of demand for employment land. This chapter is intended to provide a summary of technical information that will help determine whether the City has an adequate inventory of industrial sites within its urban growth boundary (UGB) to accommodate employment growth over a 20-year planning period. Appendices B and C provide the complete technical analysis, which is summarized in this chapter.

This chapter, along with the information in Appendices B and C, include the following components of an EOA, as required or suggested in the Goal 9 administrative rule (OAR 660-009):

- A review of national, state, and local economic trends to identify the categories of industrial and commercial uses that can reasonably be expected to locate in the planning area,
- A survey of the expansion plans of major employers,
- Identification of site requirements for industrial and commercial uses that might expand or locate in the planning area, and
- An inventory of buildable land available for industrial and other employment uses in the long-term (20 years) and short-term (1 year).

The assessment of community economic development potential must also consider the planning area's economic advantages and disadvantages of attracting new or expanded development. Relevant economic advantages and disadvantages include:

- Location, size and buying power of markets;
- Availability of transportation facilities for access and freight mobility;
- Public facilities and public services;
- Labor market factors;
- Access to suppliers and utilities;
- Necessary support services;

- Limits on development due to federal and state environmental protection laws; and
- Educational and technical training programs.

OAR 660-009-0025 requires plans to address the long-term supply of land (20 years), short-term supply of serviceable sites (1 years), and sites for uses with special siting requirements. This requirement necessitates the analysis in this chapter to take a 20-year perspective.

FRAMEWORK FOR ECONOMIC DEVELOPMENT IN OREGON

The content of this report is designed to meet the requirements of Oregon Statewide Planning Goal 9 and the administrative rule that implements Goal 9 (OAR 660-009). The analysis in this report is designed to conform to the requirements for an Economic Opportunities Analysis in OAR 660-009.

1. *Economic Opportunities Analysis (OAR 660-009-0015)*. The Economic Opportunities Analysis (EOA) requires communities to identify the major categories of industrial or other employment uses that could reasonably be expected to locate or expand in the planning area based on information about national, state, regional, county or local trends; identify the number of sites by type reasonably expected to be needed to accommodate the expected employment growth based on the site characteristics typical of expected uses; include an inventory of vacant and developed lands within the planning area designated for industrial or other employment use; and estimate the types and amounts of industrial and other employment uses likely to occur in the planning area. Local governments are also encouraged to assess community economic development potential through a visioning or some other public input based process in conjunction with state agencies.
2. *Industrial and commercial development policies (OAR 660-009-0020)*. Cities with a population over 2,500 are required to develop commercial and industrial development policies based on the EOA. Local comprehensive plans must state the overall objectives for economic development in the planning area and identify categories or particular types of industrial and other employment uses desired by the community. Local comprehensive plans must also include policies that commit the city or county to designate an adequate number of employment sites of suitable sizes, types and locations. The plan must also include policies to provide necessary public facilities and transportation facilities for the planning area.
3. *Designation of lands for industrial and commercial uses (OAR 660-009-0025)*. Cities and counties must adopt measures adequate to implement policies adopted pursuant to OAR 660-009-0020. Appropriate implementing measures include amendments to plan and zone map designations, land use regulations, public facility plans, and transportation system plans. More specifically, plans must identify the approximate number, acreage and site characteristics of sites needed to accommodate industrial and other employment uses to implement

plan policies, and must designate serviceable land suitable to meet identified site needs.

In summary, this report is an Economic Opportunities Analysis, the first key element required by Goal 9. This EOA also includes an employment forecast that leads to identification of needed development sites, and an inventory of commercial and industrial land in Sandy.

ECONOMIC CONTEXT FOR GROWTH IN SANDY

This section summarizes national, state, regional, county, and local trends affecting economic growth in Sandy. Each heading in this section represents a key trend that will affect Sandy’s economy and economic development potential. A more detailed analysis of economic trends is presented in Appendix C.

POPULATION GROWTH AND IN-MIGRATION

Population growth in Oregon tends to follow economic cycles. Historically, Oregon’s economy is more cyclical than the nation’s, growing faster than the national economy during expansions, and contracting more rapidly than the nation during recessions. This pattern is show in Table 5-1, which shows changes in population over the 1980-2006 period for the U.S., Oregon, the Willamette Valley, Portland-Vancouver-Beaverton MSA¹⁹, Clackamas County, and Sandy.

Over the 1980 to 2006 period, the Portland Region grew at a faster rate than Oregon or the Willamette Valley, at an average annual rate of 1.81%, adding 796,023 residents over the 26-year period. Clackamas County grew at an average annual rate of 1.62%, adding 125,129 residents. Sandy grew by an average of 3.48% annually and added 4,165 residents over the 26-year period.

Table 5-1 Population in the U.S., Oregon, the Willamette Valley, Portland-Vancouver-Beaverton MSA, Clackamas County, and Sandy, 1980-2006

Area	Population				Change 1980 to 2006		
	1980	1990	2000	2006	Number	Percent	AAGR
U.S.	226,545,805	248,709,873	281,421,906	299,398,484	72,852,679	32%	1.08%
Oregon	2,639,915	2,842,321	3,421,399	3,690,505	1,050,590	40%	1.30%
Willamette Valley	1,788,577	1,962,816	2,380,606	2,566,295	777,718	43%	1.40%
Portland-Van.-Beav. MSA	1,341,542	1,523,741	1,927,881	2,137,565	796,023	59%	1.81%
Clackamas County	241,911	278,850	338,391	367,040	125,129	52%	1.62%
Sandy	2,905	4,152	5,385	7,070	4,165	143%	3.48%

Source: U.S. Census, the Population Research Center at Portland State University

Notes: The Willamette Valley includes Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, Yamhill Counties.

The Portland Region (Portland-Vancouver-Beaverton MSA) includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark and Skamania Counties in Washington

Migration is the largest component of population growth in Oregon. According to information from the Portland State University Population Research

¹⁹ This report refers to the Portland-Vancouver-Beaverton MSA as either the Portland Region or the Portland MSA.

Center, Oregon had net interstate in-migration (more people moved *to* Oregon than moved *from* Oregon) of more than 595,000 people during the period 1990-2006, which accounted for 70% of Oregon's population growth over the period. The share of population growth from in-migration was higher during the 1900's (73% of population growth) than for the 2000-2006 period (65% of population growth). In-migration accounted for 52% of growth in the Oregon portion of the Portland MSA between 2000 and 2006, with nearly 69,657 people moving to the Region during the period. In Clackamas County, in-migration accounted for 71% of population growth (20,454 people) during the six-year period.

Population growth trends and in-migration in the Portland Region and Clackamas County are likely to affect Sandy's population and employment growth over the next 20-years. Sandy's population has historically grown faster than the Region or Clackamas County. Sandy's population is likely to continue growing at a similar rate or faster than the regional growth rates.

AGING POPULATION

The number of people age 65 and older in the U. S. will double by 2050, while the number of people under age 65 will only grow by 12%.²⁰ The economic effects of this demographic change include a slowing of the growth of the labor force, an increase in the demand for healthcare services, and an increase in the percent of the federal budget dedicated to Social Security and Medicare.

The Oregon Department of Employment expects the retirement of the baby-boomers will result in almost twice as many job openings resulting from retirements compared to openings resulting from creation of new jobs. The sectors with the most employment and the largest share of employees 55 years or older include: Education Services; Real Estate; Transportation and Warehousing; Health Care and Social Assistance; Public Administration; and Agriculture, Forestry, Fishing, and Hunting. The State expects little or no growth in Manufacturing employment over the next decade but expects that retirements will create demand for employees in Manufacturing.²¹

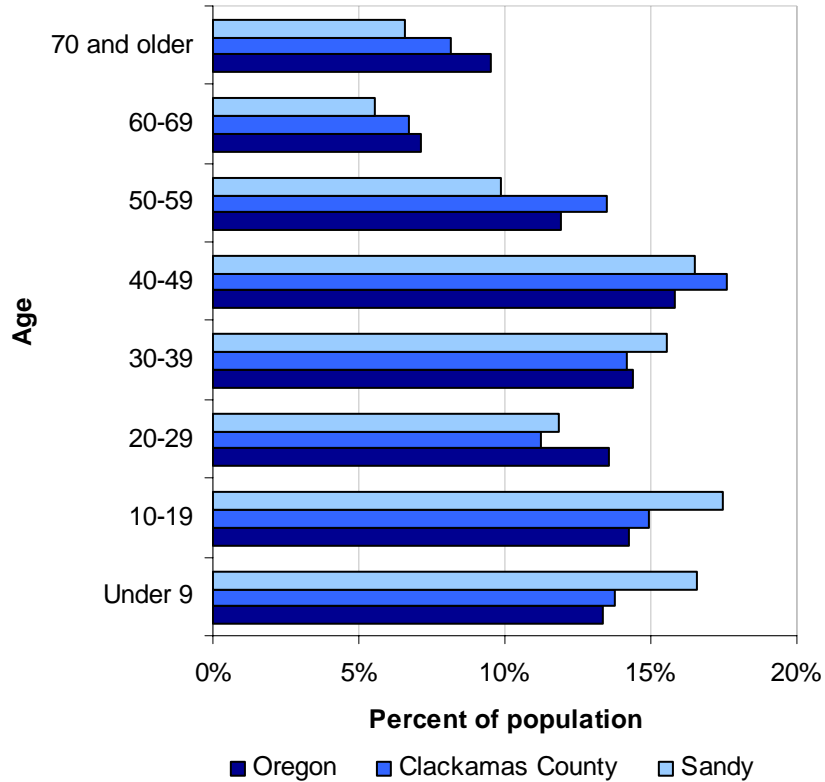
Sandy will be affected by the aging and retirement of the baby-boomers. Figure 5-1 shows that Sandy has a greater share of its population less than 30 years old than Oregon and Clackamas County, especially residents under 19 years. Sandy has fewer residents over 50 compared to the County and State averages. The fact that Sandy had a smaller share of residents over 50-years old may mean that Sandy will be impacted by the expected wave of retirements less than other cities in the Portland Region. However, population mobility may result

²⁰ The Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, 2006, *The 2006 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, May 1; Congressional Budget Office, 2006, *The Budget and Economic Outlook: Fiscal Years 2007 to 2016*, January; and Congressional Budget Office, 2005, *The Long-Term Budget Outlook*, December.

²¹ Oregon Employment Department Workforce Analysis Section, *Will Oregon Have Enough Workers?*, 2007

in further demographic changes in Sandy over the planning period, making it difficult to predict the impact of retirements on Sandy’s labor force.

Figure 5-1. Population distribution by age, Oregon, Clackamas County, and Sandy, 2000



Source: U.S. Census, 2000

LOWER HOUSEHOLD INCOME AND HOUSING COSTS

Household income has historically been higher in the Portland Region compared to the State. The median household income in Sandy in 1999 was approximately \$42,115, which was slightly higher than Oregon’s median household income of \$40,916 and the Portland MSA median household income of \$40,146.²² Sandy’s median household income was about 81% of Clackamas County’s median household income of \$52,080.

Although Sandy’s median household income was lower than the County average, housing costs in Sandy have also been below County averages. Table 4-19 shows housing sales prices in Sandy and Clackamas County for 2000 and 2006. The median sales price in Sandy was about \$233,000 in 2006, compared to

²² The Portland MSA includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark and Skamania Counties in Washington.

the County median of \$325,000. Housing prices were lower in Sandy than Gresham, Happy Valley, Damascus, and Lake Oswego.

COMMUTING PATTERNS

Commuting plays an important role in Sandy's economy. Only 15% of residents of Sandy worked in Sandy. And only 18% of Sandy's workforce live in Sandy. Most residents of Sandy worked in Multnomah County (43%) or Clackamas County (24%, not including workers in Sandy). Workers commuting in also typically lived in Multnomah County (31%) or Clackamas County (38%, not including worker that lived in Sandy).²³

Nearly half of Sandy's workforce (47%) commute for 30 minutes or more, with about one-third of residents commuting 40 minutes or longer. In comparison, about 37% of Clackamas County residents and 26% of Oregon residents commuted 40 minutes or longer.²⁴

The implication of this data is that most people living or working in Sandy commute to Sandy. This commuting pattern gives Sandy access to the labor force in parts of Multnomah County and Clackamas Counties. But the commuting patterns creates demand for automotive transportation, both within Sandy and roads connecting Sandy to the Portland Region.

SHIFTS IN EMPLOYMENT

Over the past few decades, employment in the U.S. has shifted from manufacturing and resource-intensive industries to service-oriented sectors of the economy. Increased worker productivity and the international outsourcing of routine tasks have lead to declines in employment in the major goods-producing industries.

In the 1970s Oregon started to transition away from reliance on traditional resource-extraction industries. A significant indicator of this transition is the shift within Oregon's manufacturing sector, with a decline in the level of employment in the Lumber & Wood Products industry²⁵ and concurrent growth of employment in high-technology manufacturing industries (Industrial Machinery, Electronic Equipment, and Instruments²⁶). As Oregon has transitioned away from natural resource-based industries, the composition of Oregon's employment has shifted from natural resource based manufacturing and other industries to service industries. The share of Oregon's total employment in Service industries increased from its 1970s average of 19% to 30% in 2000, while employment in

²³ US Census Bureau, LED Origin-Destination Data Base (2nd Quarter 2003)

²⁴ U.S. Census, 2000

²⁵ SIC 24

²⁶ SIC 35, 36, 38

Manufacturing declined from an average of 18% in the 1970s to an average of 12% in 2000.²⁷

Employment in the portion of the Portland Region located in Oregon and Clackamas County have followed similar trends as changes in national and state employment. Between 1980 and 2000, employment in the portion of the Portland Region located in Oregon grew by 363,837 jobs (75%) and employment in Clackamas County grew by 70,954 jobs (114%).²⁸

Services and Retail Trade accounted for more than 60% of new jobs over the twenty-year period in both regions. Growth in Services continued between 2001 and 2006, lead by Health and Social Assistance, with more than 10,000 jobs in the Portland Region over the six-year period.

Manufacturing continues to be an important source of employment in Clackamas County and the Portland Region. The Manufacturing industries that have grown the most in both Clackamas County and the Portland Region are Rubber & Miscellaneous Plastic Products and Transportation Equipment.

Table 5-2 shows covered employment by sector and industry within the Sandy Urban Growth Boundary (UGB) for 2005. Table 5-2 shows that Sandy had 293 establishments with 2,918 covered workers. The sectors with the largest level of employment in 2005 were Retail Trade (23%), Government (17%), and Accommodations, Food Services, Arts and Entertainment (16%). Together these sectors accounted for 1,625 jobs or 56% of employment in Sandy.

²⁷ Covered Employment database from the Oregon Employment Department

²⁸ Covered Employment database from the Oregon Employment Department

Table 5-2. Covered employment in Sandy UGB by sector and industry, 2005

Sector/Industry	Est.	Emp.	Average	
			Payroll	Pay/Emp.
Construction	38	187	\$7,751,111	\$41,450
Manufacturing and Agriculture	22	291	\$10,758,774	\$36,972
Fabricated Metal Product Manufacturing	7	87	\$3,889,652	\$44,709
Other Manufacturing & Agriculture	15	204	\$6,869,122	\$33,672
Wholesale Trade	11	32	\$1,268,204	\$39,631
Retail Trade	42	673	\$19,378,342	\$28,794
Motor Vehicle and Parts Dealers	8	221	\$9,326,559	\$42,202
Gasoline Stations	3	34	\$606,073	\$17,826
Building Material and Garden Equipment and Supplies	5	32	\$729,520	\$22,798
Furniture and Home Furnishings Stores	4	10	\$233,259	\$23,326
Other Retail	22	376	8,482,931	\$22,561
Transportation and Warehousing	8	32	\$768,021	\$24,001
Information	3	71	\$2,168,540	\$30,543
Finance and Insurance	15	87	\$3,001,352	\$34,498
Real Estate and Rental and Leasing	16	43	\$761,226	\$17,703
Professional & Tech. Srv and Mgt. of Companies	19	83	\$3,613,811	\$43,540
Administrative and Support Services	9	23	\$391,189	\$17,008
Health Care and Social Assistance	27	270	\$7,259,452	\$26,887
Ambulatory Health Care Services	20	164	\$5,425,269	\$33,081
Nursing and Residential Care Facilities	3	80	\$1,374,010	\$17,175
Social Assistance	4	26	\$460,173	\$17,699
Accommodations & Food Srv & Arts, Entertainment	37	453	5,634,324	\$12,438
Food Services and Drinking Places	34	421	\$5,265,614	\$12,507
Other Accommodations & Arts	3	32	\$368,710	\$11,522
Other Services (except Public Administration)	25	174	3,623,031	\$20,822
Personal and Laundry Services	6	83	\$2,051,936	\$24,722
Repair and Maintenance	8	43	\$1,015,981	\$23,627
Other Services	11	48	555,114	24,633
Government	21	499	\$19,961,352	\$40,003
Total	293	2,918	86,338,729	\$29,588

Source: Confidential Quarterly Census of Employment and Workforce (QCEW) data provided by the Oregon Employment Department. Summary by sector and industry, percent of total employment, and average payroll per employee by ECONorthwest.

The average pay for covered employees in 2005 was \$29,588, compared with the County average of \$37,815 and the State average of \$36,593.²⁹ The sectors with the highest average pay per employee were Professional and Technical Services and Management of Companies, Construction, and Government. The sectors with the lowest average pay per employee were Administrative and Support Services and Real Estate.

Pay per employee in Sandy in 2005 was about \$7,000 lower than the State average for covered employment, while household income in Sandy was about \$1,200 higher than the State average in 1999. This discrepancy suggests that

²⁹ Pay per employee in Sandy in 2005 was about \$7,000 lower than the State average for covered employment, while household income in Sandy was about \$1,200 higher than the State average in 1999. This discrepancy suggests that Sandy has a substantial amount of employment not included in the covered employment summary, such as sole proprietors.

Sandy has a substantial amount of employment not included in the covered employment summary, such as sole proprietors.

The composition of Sandy’s economy is different (but related to) the composition of Portland Region’s economy. About two-thirds of covered employment in Sandy is in Service sectors, mostly in Retail Trade and Accommodations and Food Services. Compared to the Portland Region, a smaller share of covered employment in Sandy is in Manufacturing and Health Care and Social Assistance.

Since residents of Sandy and workers of firms located in Sandy are willing to commute within the Portland Region, as discussed earlier in this chapter, the composition of Sandy’s workforce is not likely to have a large impact on the types of businesses that choose to locate or expand in Sandy. Future shifts in employment in Sandy will be impacted by Sandy’s comparative advantages (discussed later in this chapter), rather than the availability of qualified workers.

OUTLOOK FOR GROWTH IN SANDY

Sandy is growing. Since 1980, Sandy’s population has grown faster than Clackamas County. Over the twenty-six year period, Sandy added 4,165 residents at an average annual rate of 3.48%, compared to the County’s average annual growth rate of 1.62% over the same period. Table 5-3 shows the population forecast and employment forecast for Sandy from 2009 to 2029. Sandy’s population and employment are forecast to grow at 1.6% annually over the twenty-year period.

Table 5-3. Forecast population and employment, Sandy UGB, 2009-2029

Year	Population	Employment	Pop/Emp
2009	8,034	4,394	1.83
2014	8,718	4,757	1.83
2019	9,451	5,150	1.84
2024	10,228	5,575	1.83
2029	11,023	6,036	1.83
Change 2007-2027			
Number	2,989	1,642	
Percent	37%	37%	
AAGR	1.6%	1.6%	

Source: City of Sandy; ECONorthwest

The Oregon Employment Department’s forecast for employment by industry between 2004 and 2014 for Clackamas County predicts a higher rate of growth for Clackamas (16.3% increase in jobs) than the State average (15%). The forecast projects the creation of 11,280 new jobs in Clackamas County over the ten-year period. The sectors that are expected to lead employment growth in

Clackamas County are Trade, Transportation and Utilities, and Education and Health Services. Together, these sectors are expected to add 9,660 jobs or 44% of the employment growth in Clackamas County between 2004 and 2014.

FACTORS AFFECTING FUTURE ECONOMIC DEVELOPMENT IN SANDY

Economic development opportunities in Sandy will be affected by local conditions as well as the national, state, and regional economic conditions that were addressed in the previous section and Appendix C. Factors affecting future economic development in the Sandy include its location and proximity to Portland, access to transportation facilities, availability of public facilities, quality and availability of labor, housing cost and availability, and quality of life. Economic conditions in Sandy relative to these conditions in other portions of the Clackamas County and the Portland Region form Sandy's comparative advantage for economic development. Sandy's comparative advantages have implications for the types of firms most likely to locate and expand in Sandy.

There is little that Sandy can do to influence national and regional conditions that affect economic development. Sandy can influence local factors that affect economic development. The review of local factors described in Appendix D forms a basis for developing economic development implementation strategies for Sandy.

This section includes a summary of Sandy's comparative advantages and discusses the implications for the firms most likely to locate in Sandy. Appendix D presents a full review of comparative advantages in Sandy.

COMPARATIVE ADVANTAGE IN SANDY

The mix of productive factors present in Sandy, relative to other communities in Oregon, is the foundation of the city's comparative advantage. Sandy's primary comparative advantages include: the City's location along Highway 26; its proximity to Portland's workforce, markets, and amenities; the comparatively low cost of housing in Sandy; the City's proximity to Mt. Hood and Mt. Hood National Forest; and the beauty of the areas surrounding Sandy. These factors make Sandy attractive to residents and businesses that want a high quality of life where they live and work. Sandy's main disadvantage is the City's distance from an interstate highway, which is likely to discourage businesses that need direct access to an interstate (e.g. distribution centers) from locating in Sandy.

The previous section discusses industries that have shown growth and business activity in Sandy over the past few years. These industries are indicative of businesses that might locate or expand in Sandy. The characteristics of Sandy will affect the types of businesses most likely to locate in Sandy for the following reasons:

- Sandy's access to the markets and workforce of the Portland Region, natural beauty, comparatively inexpensive housing, and access to a comparatively rural lifestyle may make Sandy attractive to **professional service businesses** that need access to educated workers and want a high quality of life. These types of businesses could include corporate headquarters, software design, engineering, research, and other professional services.
- Sandy's proximity to Portland, comparatively rural setting, the beauty of the surrounding area, and the aging population in the Portland Region may make Sandy an appealing location for **retirement facilities**, such as active retirement communities, assisted living facilities, or traditional nursing homes.
- Sandy's location along Highway 26 and proximity to Mt. Hood and the Mt. Hood National Forest make Sandy attractive to firms that provide **services** to tourists, such as hotels and motels, restaurants, specialty retail, and other services for tourists. These industries are likely to grow if tourism increases.
- Sandy's access to the markets and workforce of the Portland Region, location along Highway 26, and high quality of life may make Sandy attractive to **small scale manufacturing firms** (e.g., firms with less than 50 employees). Examples include high-tech electronics, recreational equipment, furniture manufacturing, specialty apparel, and other specialty manufacturing. Sandy is less attractive regional for medium and large firms because the City is comparatively far from an interstate highway.

Cities exist in an economic hierarchy in which larger cities offer a wider range of goods and services than smaller cities. The location of a community relative to larger cities, as well as its absolute size, affects the mix of goods and services that can be supported by a small city. Sandy's small size compared to Portland or Gresham has implications for the types of retail and service firms most likely to locate in Sandy:

- Population growth and tourism will drive development of small and specialty retail and other services for tourists in Sandy.
- Sandy will continue to be the location for regional institutions such as City of Sandy government offices, the Oregon Trail School District, and the U.S. Forest Service for Mt. Hood National Forest.

DEMAND FOR COMMERCIAL AND INDUSTRIAL LAND IN SANDY

To provide for at least an adequate supply of commercial and industrial sites consistent with plan policies, Sandy needs to have an estimate of the amount of

commercial and industrial land that will be needed over the planning period. Demand for commercial and industrial land will be driven by the expansion and relocation of existing businesses and new businesses locating in Sandy. The level of this business expansion activity can be measured by employment growth in Sandy. This section reviews the employment forecast presented in Chapter 2, presents potential growth industries in Sandy, and a site needs analysis of the estimated demand for commercial and industrial land.

Chapter 2 presented a forecast of growth of total employment in Sandy for the 2009 to 2029 period. The forecast was developed according to the safe harbor presented in OAR 660-024-0040 (8) (a) (ii), which allows the City to determine employment land needs based on “The population growth rate for the urban area in the adopted 20-year coordinated population forecast...” Based on this safe harbor, employment in Sandy can be assumed to grow at 1.6% annually. Table 5-4 shows the employment forecast developed in Chapter 2. Between 2009 and 2029, Sandy is forecast to add about 1,641 jobs, the majority of which will be in Retail and Services.

Table 5-4. Employment growth by land use type in Sandy’s UGB, 2009–2029

Land Use Type	2009 Total	% of Total	2029' Total	% of Total	2009-2029 Growth
Retail and Services	3,106	71%	4,527	75%	1,421
Industrial	742	17%	905	15%	163
Government	547	12%	604	10%	57
Total Employment	4,395	100%	6,036	100%	1,641

Source: ECONorthwest.

Note: shaded cells indicate assumptions by ECONorthwest.

POTENTIAL GROWTH INDUSTRIES

The discussion of potential growth industries in Sandy should address main two questions: (1) Which industries is Sandy most likely to attract and (2) Which industries best meet Sandy’s economic objectives? The analysis of economic conditions and trends and of Sandy’s comparative advantages in the previous sections provide guidance for determining which industries Sandy is likely to attract. Desirable types of industries that Sandy wants to attract have high-wage, stable jobs with benefits and non-polluting industries. The following industries meet these criteria:

Retail and Services. The State’s forecast for nonfarm employment forecast for 2004 to 2014 (Table A-10) projects that more than two-thirds of employment growth in Region 15, Clackamas County, will be in Retail and Services. Sandy may attract the following industries:

- Population growth in Sandy will drive demand for some types of retail, and services such as personal financial, professional, and medical services.

Population growth will also drive growth in local government, specifically in education.

- Sandy may be attractive to mid-sized retail stores but is unlikely to have the demand for large retailers such as Staples or Borders Books.
- Growth in tourism from visitors to Mt. Hood and the Mt. Hood National Forest is will drive demand for services for tourists, such as specialty retail, lodging, and a variety of restaurants.
- Sandy may be attractive for firms engaged in professional, scientific and technical services, such as corporate headquarters, software design, engineering, research, and other professional services.
- Sandy may attract services for retirees, such as retirement facilities like active retirement communities, assisted living facilities, or traditional nursing homes.

Industrial. The State’s forecast for nonfarm employment forecast for 2004 to 2014 (Table A-10) projects that growth in industrial sectors will account for the almost one-quarter of employment growth in Region 15, Clackamas County. Sandy has comparative advantages, such as location near natural resources and proximity to Portland, that my contribute to the growth in employment in the following industries:

- Sandy should be attractive for firms engaged in a range of specialty manufacturing, including recreational equipment, high-tech electronics and equipment, industrial equipment, furniture manufacturing, specialty apparel, and other specialty manufacturing.

Government. The State’s forecast for nonfarm employment forecast for 2004 to 2014 (Table A-10) projects that growth in government will account for the smallest amount of employment growth in Region 15, Clackamas County. Sandy may see employment growth in government for the following reasons:

- Sandy will continue to be the location for regional institutions such as the City of Sandy government offices, the Oregon Trail School District, and the U.S. Forest Service for Mt. Hood National Forest.

SITE NEEDS

OAR 660-009-0025(1) states “...the plan must identify the approximate number, acreage and site characteristics of sites needed to accommodate industrial and other employment uses to implement plan policies.” This section identifies the site requirements of firms that are likely to locate in Sandy and provides a refined land need estimate that reflects identified site needs.

Firms wanting to expand or locate in Sandy will be looking for a variety of site and building characteristics, depending on the industry and specific circumstances. While there are always specific criteria that change from firm to firm, many firms share at least a few common site criteria. In general, all firms need sites that are relatively flat, free of natural or regulatory constraints on development, with good transportation access and adequate public services. The exact amount, quality, and relative importance of these factors vary among different types of firms. This section discusses the site requirements for firms in industries with growth potential in Sandy.

Employment growth in Sandy will drive demand for industrial, commercial, and public land. To estimate the demand for land generated by employment growth, ECO used factors for the number of employees per acre for each of the four land use types used in the employment forecast. This step began by making a deduction from total new employment (referred to as the “refill” assumption). This deduction accounts for: (1) percent of total employment growth that requires no commercial or industrial built space or land; and (2) percent of employment growth on non-residential developed land currently developed.

Typical refill deductions range from 10% in small cities to 30% or more for larger areas. For example, Portland Metro estimated refill at around 40% for 1996 and 1997 in a small empirical study they conducted. A reasonable refill rate for Sandy is probably 10%.

The next set of assumptions needed to estimate non-residential land need is employees per acre (EPA). This variable is defined as the number of employees per acre on non-residential land that is developed to accommodate employment growth. There are few empirical studies of the number of employees per acre, and these studies report a wide range of results. Ultimately the employees/acre assumptions reflect a judgment about average densities and typically reflect a desire for increased density of development. The EPA assumptions used in this analysis are based on guidelines in the *Industrial and Other Employment Lands Analysis Guidebook* from the Department of Land Conservation and Development.

The final assumption is a net to gross factor. The EPA assumptions are employees per *net* acre (e.g., acres that are in tax lots). As land gets divided and developed, some of the land goes for right-of-way and other public uses. The net to gross factor varies by land use, but 15% is a reasonable assumption for employment lands.

Table 5-5 shows estimated demand for employment land in the Sandy UGB by land use type for the 2009-2029 period. The results show that Sandy will need about 112 gross acres of land for employment within its UGB for the 2009-2029 period.

Table 5-5. Estimated demand for employment land in the Sandy UGB by land use type, 2009–2029

Land Use Type	Assuptions			Buildable Land Need	
	Total New Emp.	Emp that Requires vacant non-res land	Emp. Per Net Acre	Gross Buildable Acres	Percent of Acres
Retail and Services	1,421	1,279	16	94.0	84%
Industrial	163	147	12	14.4	13%
Government	57	51	16	3.8	3%
Total	1,641	1,477		112.2	100%

Source: ECONorthwest.

Note: The employee per acre assumptions are based on the recommendations from the Goal 9 Guidebook "Industrial and Other Employment Land Analysis Guidebook." The estimates for the 2004 report were, in some cases higher and in other cases lower, than the guidelines provided in the Guidebook.

Table 5-6 summarizes the lot sizes typically needed for firms in selected industries. The emphasis in Table 5-6 is on new large firms that have the most potential to generate employment growth. For example, while the number of convenience stores in the region is likely to grow, the site needs for these stores is not included in Table 5-6 because they are unlikely to generate substantial employment growth. Large food stores, which are typically 50,000 to 100,000 sq. ft. in size, are more likely to generate substantial employment growth in the region, and these stores require sites of 5 to 10 acres.

Table 5-6. Typical lot size requirements for firms in selected industries

Industry	Lot Size (acres)
Manufacturing	
Printing & Publishing	5 - 10
Stone, Clay & Glass	10 - 20
Fabricated Metals	10 - 20
Industrial Machinery	10 - 20
Electronics - Fab Plants	50 - 100
Electronics - Other	10 - 30
Transportation Equipment	10 - 30
Transportation & Wholesale Trade	
Trucking & Warehousing	varies
Retail Trade	
General Merchandise & Food Stores	5-10
Eating & Drinking Places	0.5-5
FIRE & Services	
Non-Depository Institutions	1 - 5
Business Services	1 - 5
Health Services	1 - 10
Engineering & Management	1 - 5

Source: ECONorthwest.

More specific site needs and locational issues for firms in potential growth industries include a range of issues. Table 5-7 summarizes these issues and how they pertain to development in Sandy.

Table 5-7. Summary of site characteristics

Characteristic	Description	Comments
Flat sites	Flat topography (slopes with grades below 10%) is needed by almost all firms in every industry except for small Office and Commercial firms that could be accommodated in small structures built on sloped sites. Flat sites are particularly important for Industrial firms in manufacturing, trucking, and warehousing, since these firms strongly prefer to locate all of their production activity on one level with loading dock access for heavy trucks.	Most of Sandy's industrial and commercial sites are located in relatively flat areas.
Parcel configuration and parking	Large Industrial and Commercial firms that require on-site parking or truck access are attracted to sites that offer adequate flexibility in site circulation and building layout. Parking ratios of 0.5 to 2 spaces per 1,000 square feet for Industrial and 2 to 3 spaces per 1,000 square feet for Commercial are typical ratios for these firms. In general rectangular sites are preferred, with a parcel width of at least 200-feet and length that is at least two times the width for build-to-suit sites. Parcel width of at least 400 feet is desired for flexible industrial/business park developments and the largest Commercial users.	Availability of larger parcels should not be a long-term issue for Sandy. Parking does not appear to be a problem.
Soil type	Soil stability and ground vibration characteristics are fairly important considerations for some highly specialized manufacturing processes, such as microchip fabrications. Otherwise soil types are not very important for Commercial, Office, or Industrial firms—provided that drainage is not a major issue.	Soils are generally suitable for development.
Road transportation	All firms are heavily dependent upon surface transportation for efficient movement of goods, customers, and workers. Access to an adequate highway and arterial roadway network is needed for all industries. Close proximity to a highway or arterial roadway is critical for firms that generate a large volume of truck or auto trips or firms that rely on visibility from passing traffic to help generate business. This need for proximity explains much of the highway strip development prevalent in urban areas today.	Sandy is located at the intersections of Highways 211 and 26, less than 15 miles from Interstate 84, and about 17 miles from I-205. Congestion on Highway 26 and overall transportation connectivity within the County is an issue that may slow future growth.
Rail transportation	Rail access can be very important to certain types of heavy industries. The region has good rail access to many industrial sites.	Residents and businesses in Sandy can access rail transportation at the Port of Portland, which provides access to container and bulk commodities shipping via ship, rail access, and numerous warehouses.

Air transportation	Proximity to air transportation is important for some firms engaged in manufacturing, finance, or business services.	Sandy is located about 25 miles away from the Portland International Airport. The airport provides passenger and freight service.
Transit	Transit access is most important for businesses in Health Services, which has a high density of jobs and consumer activity, and serves segments of the population without access to an automobile.	Transit in Sandy includes the Sandy Area Metro transit service, the Fareless SAM, which makes stops within Sandy and continues as an express service to the Gresham Transit Center (about 10 miles from Sandy). There, passengers can transfer to Portland busses and the light rail line that connects Gresham to downtown Portland.
Labor force	Firms are looking at reducing their workforce risk, that is, employers want to be assured of an adequate labor pool with the skills and qualities most attractive to that industry. Communities can address this concern with adequate education and training of its populace. Firms also review turnover rates, productivity levels, types and amount of skilled workers for their industry in the area, management recruitment, and other labor force issues in a potential site area.	Businesses in Sandy have access to the labor force in parts of Multnomah County and Clackamas Counties, including eastern parts of the Portland UGB. Employers needing highly skilled employees may recruit from the greater Portland metro region.
Pedestrian and bicycle facilities	The ability for workers to access amenities and support services such as retail, banking, and recreation areas by foot or bike is increasingly important to employers, particularly those with high-wage professional jobs. The need for safe and efficient bicycle and pedestrian networks will prove their importance over time as support services and neighborhoods are developed adjacent to employment centers.	The City of Sandy strives to provide a street grid system that provides easy pedestrian and bicycle access to most areas of town. In addition, the City has some bike lanes and plans for multi-use paths for bicycles.
Amenities	According to the International Economic Development Council ³⁰ , attracting and retaining skilled workers requires that firms seek out places offering a high quality of life that is vibrant and exciting for a wide range of people and lifestyles.	Sandy has easy access to Highways 26 and 211, which provide easy automotive access between Sandy and surrounding areas. Residents of Sandy have easy access to urban and rural amenities and recreation opportunities in nearby Mt. Hood National Forest. Sandy is located about 20 miles from Portland, which provides urban amenities.

³⁰ International Economic Development Council. "Economic Development Reference Guide," <http://www.iedconline.org/hotlinks/SiteSel.html>. 10/25/02.

Fiber optics and telephone	Most if not all industries expect access to multiple phone lines, a full range of telecommunication services, and high-speed internet communications.	Sandy has access to high-speed telecommunications facilities.
Potable water	Potable water needs range from domestic levels to 1,000,000 gallons or more per day for some manufacturing firms. However, emerging technologies are allowing manufacturers to rely on recycled water with limited on-site water storage and filter treatment. The demand for water for fire suppression also varies widely.	The City has sufficient water to meet current demand for water but will need systems upgrades, including the location of a new water source other than Alder Creek, in the next 20 years to accommodate population and employment growth.
Power requirements	Electricity power requirements range from redundant (uninterrupted, multi-sourced supply) 115 kva to 230 kva. Average daily power demand (as measured in kilowatt hours) generally ranges from approximately 5,000 kwh for small business service operations to 30,000 kwh for very large manufacturing operations. The highest power requirements are associated with manufacturing firms, particularly fabricated metal and electronics. For comparison, the typical household requires 2,500 kwh per day.	Sandy has access to sufficient power supply to accommodate most commercial and industrial users.
Land use buffers	Industrial areas have operational characteristics that do not blend as well with residential land uses as they do with Office and Commercial areas. Generally, as the function of industrial use intensifies (e.g., heavy manufacturing) so to does the importance of buffering to mitigate impacts of noise, odors, traffic, and 24-hour 7-day week operations. Adequate buffers may consist of vegetation, landscaped swales, roadways, and public use parks/recreation areas. Depending upon the industrial use and site topography, site buffers range from approximately 50 to 100 feet. Selected commercial office, retail, lodging and mixed-use (e.g., apartments or office over retail) activities are becoming acceptable adjacent uses to light industrial areas.	

Source: ECONorthwest.

In summary, there is a wide range of site requirements for firms in industries with potential for growth in Sandy. While firms in all industries rely on efficient transportation access and basic water, sewer and power infrastructure, they have varying need for parcel size, slope, configuration, and buffer treatments. Transit, pedestrian and bicycle access are needed for commuting, recreation and access to support amenities.

Table 5-8 shows site needs by site size and major employment use. The estimate of needed sites builds off of the 20-year employment forecast. Employees and employers are distributed in ratios similar to those in 2005. The distribution assumes that Sandy will continue to attract similar types of employers in the future as exist in the City now. It also assumes that the average number of employees per firm (9.9) will continue into the future.

Table 5-8 estimates that Sandy will need up to 170 gross acres and between 69 to 124 sites. The majority of the sites will be 5 acres or smaller.

Table 5-8. Needed sites by site size and major use, gross acres, Sandy, 2009-2029

Size of firm	Est Gross		Total Sites Needed	Industrial	Other Emp.
	Acres Needed	Avg. Site Size			
100 +	30	20-50 ac	1	1	-
50-99	50	5-20 ac	4-6	2-3	2-3
25-49	30	2-5 ac	9-14	4-7	5-7
10-24	30	1-2 ac	16-28	6-12	10-16
1-9	30	<1 ac	40-75	10-25	30-50
Total	170		69-124	22-48	47-76

Source: ECONorthwest.

The identified site needs shown in Table 5-8 do not distinguish sites by comprehensive plan designation. It is reasonable to assume that industrial uses will primarily locate in industrial zones. Retail and service uses could locate in commercial zones, mixed-use zones, and in some instances residential zones. Note that the site needs shown in Table 5-8 are based on local demand for sites and do not include sites for industries of statewide significance.

Table 5-9 shows a comparison of vacant and needed sites for employment for the 2009-2029 period. The results show Sandy has a surplus of sites over 5 acre and a deficit of sites less than five acres. The deficit of smaller sites can be met through a combination of parcelizing larger sites, infill, and redevelopment.

Table 5-9. Comparison of vacant and needed sites for employment, Sandy UGB, 2009-2029

Size of firm	Est Gross		Total Sites Needed	Vacant Sites in Inventory	Surplus (Deficit)
	Acres Needed	Avg. Site Size			
100 +	30	20-50 ac	1	1	0
50-99	50	5-20 ac	4-6	10	4-6
25-49	30	2-5 ac	9-14	9	(0-5)
10-24	30	1-2 ac	16-28	9	(7-19)
1-9	30	<1 ac	40-75	40	(0-35)
Total	170		69-124		

This chapter summarizes from data and analysis presented in Chapters 2 through 5 to compare “demonstrated need” for vacant buildable land with the supply of such land currently within the Sandy UGB and city limits. Chapter 2 described population and employment forecasts, Chapter 3 described land supply, Chapter 4 described residential land needs, and Chapter 5 described land needed for employment.

The following section estimates land needed for other uses; the chapter concludes with a comparison of land supply and land demand for the 2009-2029 time periods.

LAND NEEDED FOR OTHER USES

Cities need to provide land for uses other than housing and employment. Public facilities such as schools, hospitals, governments, churches, parks, and other non-profit organizations will expand as population increases. Many communities have specific standards for parks. School districts typically develop population projections to forecast attendance and need for additional facilities. All of these uses will potentially require additional land as a city grows. The OAR 660-024-0040(9) safe harbor specifically addresses lands needed for “streets and roads, parks and school facilities.” The safe harbor does not account for residential land needed for semi-public uses. This includes hospitals, churches, non-profit organizations, and related semi-public uses. The analysis includes land need assumptions using acres per 1,000 persons for all lands of these types.

Table 6-1 shows land in semi-public uses by type (e.g., uses not defined in the safe harbor assumptions). The data show that Sandy had a total of 46.7 acres in semi public uses in 2006. This equates to 6.0 acres per 1,000 persons. Land needs for other uses, including churches, fraternal organizations, and other uses, are based on current land uses. Table 6-1 shows that Sandy will need about 17.4 gross acres or 5.8 acres per 1,000 people between 2009 and 2029.

Table 6-1. Summary of semi-public land need by type, gross acres, Sandy, 2009-2029

Type of Use	Existing Acres	Assumed		Estimated Need 2009-2029
		Acres / 1000 Persons	Need (Ac/1000 Persons)	
Church	35.2	4.4	4.4	13.1
Fraternal	0.5	0.1	0.1	0.2
Other Uses	10.9	1.4	1.4	4.1
Total	46.7	5.8	5.8	17.4

Source: City of Sandy data , analysis by ECONorthwest
 Note: "Other uses" includes semi-public uses such as nonprofits or hospitals.

COMPARISON OF LAND NEED AND SUPPLY

RESIDENTIAL LAND NEED

Table 6-2 shows land demand for residential and other land needs the 2009 to 2029 period. The results lead to the following findings:

- The City will need about 226 gross acres for residential uses between 2009 and 2029.
- The City will need about 17 gross acres for semi-public uses between 2009 and 2029. The analysis assumes these uses will locate on land zoned for residential uses.

Table 6- 3. Estimated total residential land need, Sandy UGB, 2009-2029

Land Use	Needed DU	Land Need (Net Acres)	Land Need (Gross Acres)	Percent of Gross Acres
Residential				
Single-family detached	740	134.5	179.3	74%
Manufactured in Parks	12	1.4	1.9	1%
Single-family attached	115	11.5	15.3	6%
Multifamily	289	22.2	29.6	12%
Subtotal - Residential	1,156	169.6	226.1	93%
Other (Semi-Public)			17.4	7%
Total Land Need			243.5	100%

Source: ECONorthwest
 Note: Net-to-gross conversion assumes 25% factor consistent with OAR 660-024-0040(9) safe harbor assumption
 Sample net to gross calculation for single-family detached: Gross acres = net acres / (1-0.25). For example: 179.3 gross acre = 134.5 net acres (179.3*(1-.25)). To convert from net to gross: 134.5 net acres = 179.3 gross acre (134.5/(1-0.25)).

Table 6-3 shows the capacity for residential development by plan designation. The results lead to the following findings:

- Sandy has a surplus of residential land. The Sandy UGB has enough land for 3,114 new dwelling units. The housing needs forecast in Chapter 4 projected a need for 1,156 dwelling units.
- The Low Density Residential designation has a surplus of approximately 180 gross acres (895 dwelling units).
- The Medium Density Residential designation has a surplus of approximately 17 gross acres (96 dwelling units).
- The High Density Residential designation has a surplus of approximately 19 gross acres (192 dwelling units).
- The Village designation has a surplus of approximately 145 gross acres (722 dwelling units) in areas zoned for R-1 development.
- The Village designation has a surplus of 18 gross acres (104 dwelling units) in areas zoned for R-2 development.
- The Village designation has a deficit of 6 gross acres (57 dwelling units) in areas zoned for R-3 development.

Table 6-3. Residential capacity for needed dwelling units by plan designation, Sandy UGB, 2009-2029

Plan Designation	Title	Capacity		Surplus	Gross Acres
		(Dwelling Units)	Needed Units	(Deficit) DU	Surplus (Deficit)
LDR	Low Density Residential	1,311	416	895	179.7
MDR	Medium Density Residential	316	220	96	16.6
HDR	High Density Residential	388	196	192	19.1
V	Village	1,099	324		
	Village - R-1	889	167	722	144.9
	Village - R-2	143	39	104	18.0
	Village - R-3	61	118	(57)	(5.7)
Total		3,114	1,156	1,952	372.6

Source: ECONorthwest

EMPLOYMENT LAND NEED

Table 6-4 shows land demand for employment land during the 2009 to 2029 period. The results lead to the following findings:

- The City will need about 112 gross acres for all employment uses between 2009 and 2029.
- The City will need about 94 gross acres for retail and services between 2009 and 2029.

- The City will need about 14 gross acres for industrial development between 2009 and 2029.
- The City will need about 4 gross acres for government between 2009 and 2029.

Table 6-4. Estimated total land need for non-residential land needs, gross acres, Sandy UGB, 2009-2029

Land Use Type	Buildable Land Need	
	Gross Buildable Acres	Percent of Acres
Retail and Services	94.0	84%
Industrial	14.4	13%
Government	3.8	3%
Total	112.2	100%

Source: ECONorthwest

Table 6-5 compares land supply and need for Sandy for employment uses by plan designation.³¹ The results show that Sandy has a surplus of employment land for the 2009-2029 period.

Table 6-5. Comparison of employment land supply and demand, gross acres, Sandy UGB, 2009-2029

Plan Designation	Land Demand	Supply 2007	Surplus (deficit)
Village Commercial	9.4	10.4	1.0
Commercial	84.6	134.2	49.6
Industrial	14.4	83.6	69.2
Total	108.4	228.2	119.8

Source: ECONorthwest

Note: The demand for retail and services is divided between the Village and Commercial Plan designations, with 10% of demand assigned to the Village and 90% assigned to Commercial.

SUMMARY

The City does not have a demonstrated need to expand its UGB at this time. Table 6-6 provides a summary of land needed by land-use type. The results lead to the following findings:

- Sandy has a surplus of 376.7 gross acres of residential land.

³¹ ECO assumes that the need for land for government (32 acres) will be addressed in residential plan designations in the estimate of land for public and semi-public uses.

- Sandy has a need for 17 gross acres for semi-public uses. Many of these uses, such as churches, may be accommodated on land zoned for residential uses. Some of these uses may be accommodated on land zoned for commercial uses, such as nonprofits. Sandy has sufficient land in other designations to meet this need.
- Sandy has a surplus of 119.8 gross acres of employment land. The site needs analysis in Chapter 5 identified a need for more smaller employment sites. That need can be met through parcelization of larger sites, better use of underutilized sites (infill), and redevelopment).

Table 6-6. Estimate of land needs by land-use type, gross acres, Sandy, 2009-2029

Land use type	Land Need Surplus (deficit)
Residential	376.7
Residential	
Low Density Residential	179.7
Medium Density Residential	20.5
High Density Residential	19.1
Village	
Village - R-1	145.0
Village - R-2	18.0
Village - R-3	(5.7)
Public and semi-public needs	(17.4)
Employment	119.8
Village Commercial	1.0
Commercial	49.6
Industrial	69.2
Total	479.1

Source: ECONorthwest

The results suggest Sandy does not have a demonstrated need to expand its Urban Growth Boundary at this time. The City should also explore approaches to better utilize existing lands in the UGB. Following are a few policy options the City could explore:

- Restricting the supply of commercial land to encourage infill and redevelopment
- Encouraging higher density development on employment lands
- Redesignation of lands within the UGB to plan designations that have deficits

Summary of National Housing Trends

The first step in a housing needs assessment is to identify relevant national, state, and local demographic and economic trends and factors that affect local housing markets. This Appendix summarizes trends in national housing markets.

The evaluation of housing trends that follows is based on previous research conducted by ECONorthwest for other housing needs studies as well as new research to update the evaluation of trends that may affect housing mix.

OVERVIEW

Previous work by ECO and conclusions from The State of the Nation's Housing, 2006 report from the Joint Center for Housing Studies of Harvard University inform the national, state, and local housing outlook for the next decade. The Joint Center for Housing Studies of Harvard University's The State of the Nation's Housing, 2006 report summarizes the national housing outlook for the next decade as follows:

“The housing boom came under increasing pressure in 2005. With interest rates rising, builders in many states responded to slower sales and larger inventories by scaling back on production. Meanwhile, the surge in energy costs hit household budgets just as higher interest rates started to crimp the spending of homeowners with adjustable mortgages.

Nevertheless, the housing sector continues to benefit from solid job and household growth, recovering rental markets, and strong home price appreciation. As long as these positive forces remain in place, the current slowdown should be moderate. Over the longer term, household growth is expected to accelerate from about 12.6 million over the past ten years to 14.6 million over the next ten. When combined with projected income gains and a rising tide of wealth, strengthening demand should lift housing production and investment to new highs. But with the economy generating so many low-wage jobs and land use restrictions driving up housing costs, today's widespread affordability problems will also intensify.”

This evaluation presents a mixed outlook for housing markets and for homeownership, and points to the significant difficulties low- and moderate-income households face in finding affordable housing. The following sections describe specific trends in more detail.

LONG RUN TRENDS IN HOME OWNERSHIP AND DEMAND

Aside from modest pullbacks in starts and sales, the recent housing boom lasted for 13 consecutive years (1992-2005). By comparison, the next-longest expansion since 1970 with no significant drop in starts lasted just five years. In addition to record-setting length of this expansion, this is also the first time in postwar history when the housing sector did not lead the economy into recession. While strength in early 2005 pushed most national housing indicators into record territory, the market began to soften and sales slowed in many areas in the latter half of 2005. After 12 successive years of increases, the national homeownership rate slipped to 68.9% in 2005.

The Joint Center for Housing Studies concludes that the housing boom of the past 13 years established a momentum that should keep homeownership rates headed higher. If conditions that favor homeownership continue and the momentum persists, as many as 11.0 million more households will join the homeowner ranks between 2000 and 2010. While further homeownership gains are likely during this decade, they are not assured. Additional increases depend, in part, on finding ways to ease the difficulties faced by low and moderate income households in purchasing a home. It also rests on whether the conditions that have led to homeownership growth can be sustained.

While averaging more than 1.9 million units annually since 2000, housing starts and manufactured home placements appeared to have been roughly in line with household demand. In 2005, with sales slowing, but building activity steady despite widespread pullbacks, the inventory of both new and existing homes was much higher than in recent years. Nevertheless, according to the Joint Center for Housing Studies, the over 5-month supply of homes on the market in March 2006 was still less than a 6-month supply, and it would have to stay at these high levels for a year or more to create anywhere near a buyer's market.

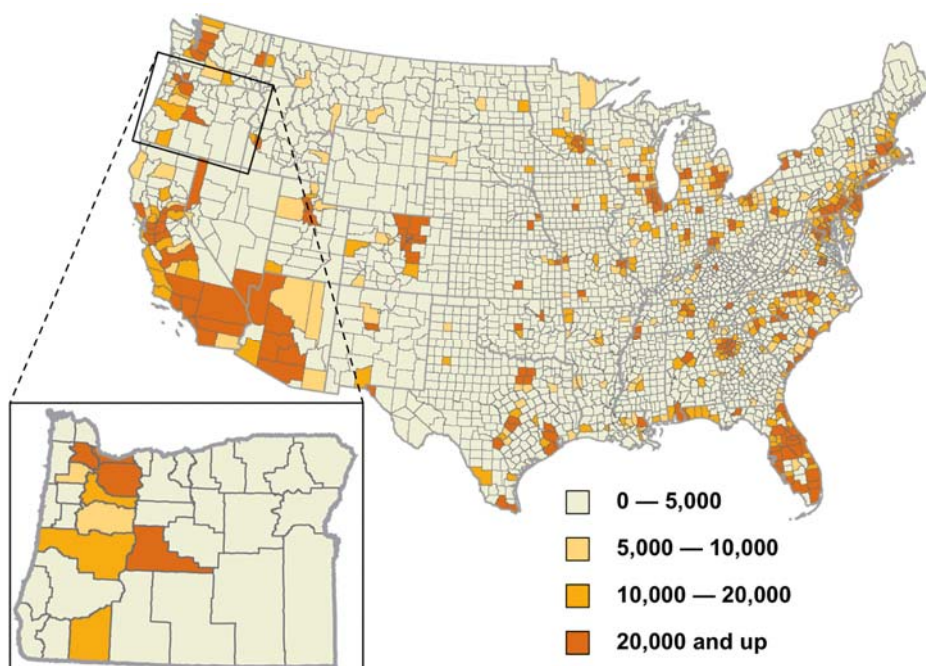
The Joint Center for Housing Studies indicates that demand for new homes could total as many as 20 million units nationally between 2005 and 2015. The vast majority of these homes will be built in lower-density areas where cheaper land is in greater supply. People and jobs have been moving away from central business districts (CBDs) for more than a century: the number of the country's largest metropolitan areas with more than half of their households living at least 10 miles from the CBD has more than tripled from 13 in 1970 to 46 in 2000; in six metropolitan areas more than a fifth of households live at least 30 miles out.

The Joint Center for Housing Studies also indicates that demand for higher density housing types exists among certain demographics. They conclude that because of persistent income disparities, as well as the movement of the echo boomers into young adulthood, housing demand may shift away from single-family detached homes toward more affordable multifamily apartments, town homes, and manufactured homes. Supply-side considerations, however, outweigh these demographic forces.

RECENT TRENDS IN HOME OWNERSHIP AND DEMAND

In 2005, many households took advantage of rising yet still attractive interest rates to participate in hot markets in the Northeast and West. While the national homeownership rate decreased slightly, rates in some regions and among some groups continued to increase. Households of all ages, races, and ethnicities participated in the home-buying boom. Because of strong activity in the early part of the year, house prices, residential investment, and home sales all set records in 2005. Regionally, using housing permits issued as a proxy for new home ownership, Clackamas County is among the more robust housing markets in the nation and in Oregon, issuing between 20,000 or more building permits over the 1994-2003 period (see Figure A-1).

Figure A-1. Housing permits issued by county, U.S., 1994-2003



Source: Census Bureau, Construction Statistics, Building Permits by County. As cited in *The State of The Nation's Housing, 2005*, The Joint Center for Housing Studies of Harvard University, p. 9

DEMOGRAPHIC TRENDS IN HOME OWNERSHIP

According to the Joint Center for Housing Studies immigration will play a key role in accelerating household growth over the next 10 years. Between 1991 and 2003, the minority share of first-time homebuyers increased from 22 percent to 35 percent, of new homebuyers from 13 percent to 24 percent, and of home remodelers from 12 percent to 19 percent. The children of immigrants who arrived in the 1980s and 1990s now account for 21 percent of children between the ages of 1 and 10, and 15 percent of those between the ages of 11 and 20. Members of this generation will probably earn more than their parents becoming an even greater source of housing demand in the coming decades.

The Joint Center for Housing Studies suggests that an aging population, and of baby boomers in particular, will drive changes in the age distribution of households in all age groups over 55 years. Baby boomers, however, do not appear to be in a rush to downsize. While more than half of the oldest boomers (aged 45 to 54 in 2000) moved during the 1990s, they typically traded up to newer homes with more amenities. Second home demand among upper-income homebuyers of all ages also continues to grow.

People prefer to remain in their community as they age.³² The challenges that seniors face as they age in continuing to live in their community include: changes in healthcare needs, loss of mobility, the difficulty of home maintenance, financial concerns, and increases in property taxes.³³ Not all of these issues can be addressed through housing or land-use policies. Communities can address some of these issues through adopting policies that:

- Diversify housing stock to allow development of smaller, comparatively easily maintained houses in single-family zones, such as single story townhouses, condominiums, and apartments.
- Allow commercial uses in residential zones, such as neighborhood markets.
- Allow a mixture of housing densities and structure types in single-family zones, such as single-family detached, single-family attached, condominiums, and apartments.
- Promote the development of group housing for seniors that are unable or choose not to continue living in a private house. These facilities could include retirement communities for active seniors, assisted living facilities, or nursing homes.
- Design public facilities so that they can be used by seniors with limited mobility. For example, design and maintain sidewalks so that they can be used by people in wheel chairs or using walkers.

HOME RENTAL TRENDS

Over the longer term, the Joint Center for Housing studies expects rental housing demand to grow by 1.8 million households by 2015 even if the national homeownership rate continues to increase. Minorities will be responsible for nearly all of this increased demand, although demographics will also play a role. Growth in young adult households will increase demand for moderately priced rentals, in part because echo boomers will reach their mid-20s after 2010.

³² A survey conducted by the AARP indicates that 90% of people 50 years and older want to stay in their current home and community as they age. See <http://www.aarp.org/research>.

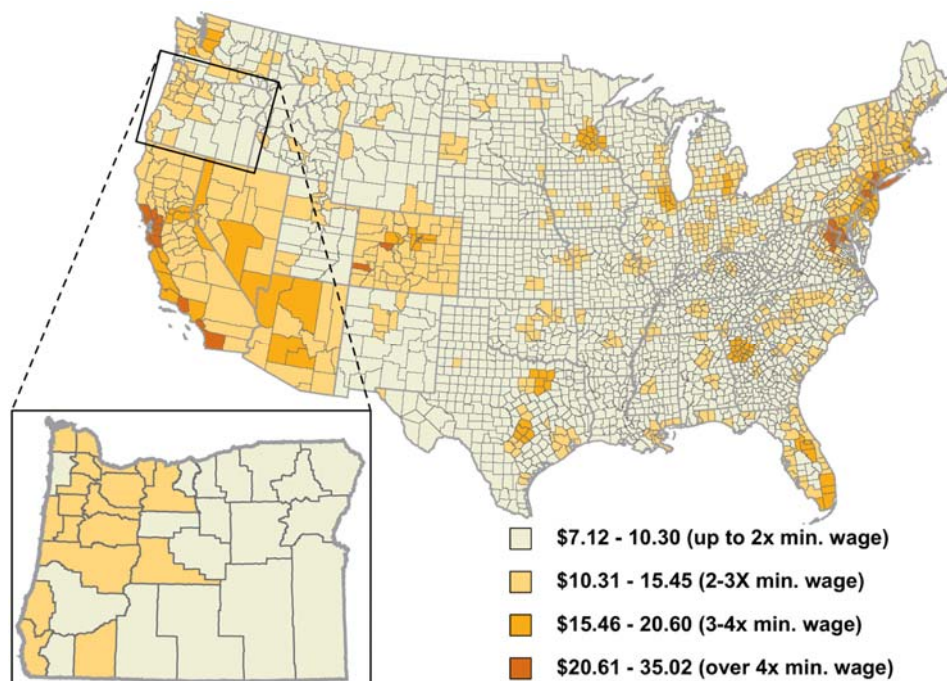
³³ "Aging in Place: A toolkit for Local Governments" by M. Scott Ball.

Meanwhile growth among those between the ages of 45 and 64 will lift demand for higher-end rentals. Given current trends in home prices and interest rates, conditions will become increasingly favorable for rental markets in the coming years.

Despite only modest increases in rents in recent years, growing shares of low- and moderate-wage workers, as well as seniors with fixed incomes, can no longer afford to rent even a modest two-bedroom apartment anywhere in the country. In 2006, one in three American households spent more than 30% of income on housing, and more than one in seven spent upwards of 50%. The national trend towards increased rent to income ratios is mirrored regionally in that a salary of two to three times minimum wage is needed to afford rents in Clackamas County (see Figure A-2).

According to the Joint Center for Housing Studies, these statistics understate the true magnitude of the affordability problem because they do not capture the tradeoffs people make to hold down their housing costs. For example, these figures exclude the 2.5 million households that live in crowded or structurally inadequate housing units. They also exclude the growing number of households that move to locations distant from work where they can afford to pay for housing, but must spend more for transportation to work. Among households in the lowest expenditure quartile, those living in affordable housing spend an average of \$100 more on transportation per month than those who are severely housing cost-burdened. With total average monthly outlays of only \$1,000, these extra travel costs amount to 10 percent of the entire household budget.

Figure A-2. Hourly wages needed to afford rent by county, U.S., 2004



Source: HUD's Fair Market Rents for 2004, based on methodology developed by the National Low Income Housing Coalition. As cited in The State of The Nation's Housing, 2005, The Joint Center for Housing Studies of

TRENDS IN HOUSING AFFORDABILITY

The record breaking housing prices, residential investment, and home sales of 2005 mentioned above, although indicative of strong housing demand nationally, have negative implications for lower income populations and first time home buyers. Higher short-term interest rates made it more difficult for first-time buyers to break into the market. Subprime loans may help many low-income buyers access credit, but their special terms and higher rates put some of the buyers at risk of foreclosure. The concentration of subprime loans in low-income minority neighborhoods puts some of these communities at risk of widespread foreclosure. With low-wage jobs increasing and wages for those jobs stagnating, affordability problems will persist even as strong fundamentals lift the trajectory of residential investment. While the Harvard report presents a relatively optimistic outlook for housing markets and for homeownership, it points to the significant difficulties low- and moderate-income households face in finding affordable housing, and preserving the affordable units that do exist.

TRENDS IN HOUSING CHARACTERISTICS

The U.S Bureau of Census Characteristics of New Housing Report presents data that show trends in the characteristics of new housing for the nation, state, and local areas. Several trends in the characteristics of housing are evident from the New Housing Report:

- Larger single-family units on smaller lots. Between 1994 and 2005 the median size of new single-family dwellings increased 17%, from 1,900 sq. ft. to 2,227 sq. ft. nationally and 24% in the western region from 1,810 sq. ft. to 2,236 sq. ft. Moreover, the percentage of units under 1,200 sq. ft. nationally decreased from 5% in 1999 to 4% in 2005. The percentage of units greater than 3,000 sq. ft. increased from 16% in 1999 to 23% of new one-family homes sold in 2005. In addition to larger homes, a move towards smaller lot sizes is seen nationally. Between 1994 and 2005 the percentage of lots under 7,000 sq. ft. increased 4% from 29% of lots to 33% of lots. A corresponding 8% decrease in lots over 11,000 sq. ft. is seen.
- Larger multifamily units. Between 1994 and 2005, the median size of new multiple family dwelling units increased. The percentage of multifamily units with more than 1,200 sq. ft. increased from 11% to 36% in the western region and from 11% to 43% nationally. Moreover, the percentage of units with less than 600 sq. ft. decreased from 6% to 2% in the western region and from 4% to 1% nationally.

- More household amenities. Between 1994 and 2005 the percentage of single-family units built with amenities such as central air conditioning, fireplaces, 2 or more car garages, or 2 or more baths all increased. The same trend in increased amenities is seen in multiple family units.

A clear linkage exists between demographic characteristics and housing choice. This is more typically referred to as the linkage between life-cycle and housing choice and is documented in detail in several publications. Analysis of data from the Public Use Microsample (PUMS) in the 2000 Census to describe the relationship between selected demographic characteristics and housing choice. Key relationships identified through this data include:

- Homeownership rates increase as income increases;
- Homeownership rates increase as age increases;
- Choice of single-family detached housing types increases as income increases;
- Renters are much more likely to choose multiple family housing types than single-family; and
- Income is a stronger determinate of tenure and housing type choice for all age categories.

HCS Housing Needs Model

The City of Sandy is in the process of conducting a housing needs study consistent with Goal 10. The purpose of the study is to determine whether Sandy has sufficient land within the Sandy Urban Growth Boundary (UGB) to accommodate expected housing needs for the next twenty-years.

This appendix provides an overview of the HCS model and the results from ECO's preliminary model runs.

THE HCS MODEL

ECONorthwest is using the HCS Housing Needs Model to address the ORS 197.296 requirements. This memorandum provides additional background and the complete analysis. It has two sections:

- **Detailed methodology** provides a complete description of the methodology for the development of the model, as well as a description of the model inputs for the Bear Creek Valley results.
- **Preliminary results** provides a summary of the key output from the preliminary model runs.

DETAILED METHODOLOGY³⁴

BACKGROUND AND ASSUMPTIONS IN THE MODEL

ECONorthwest used the HCS Housing Needs Model to address the ORS 197.296 requirements. The model considers the current and projected demographics, existing housing inventory, and regional tenure choices, to arrive at the number of needed housing units by tenure, price point, and housing type.

The methodology that the model uses to calculate housing needs is driven by the demographics of the study area rather than past trends in housing production. In other words, the model assumes that people with similar demographic characteristics will make similar housing choices. The model uses demographic data in conjunction with current regional housing tenure data to calculate the housing needs for that study area. The model was designed to use Census data as a major input.

³⁴ This section summarizes the methodological description that accompanies the HCS Housing Needs Model. That document (A Housing and Land Needs Analysis Methodology and Model, Richard Bjelland, State Housing Analyst, OHCS) is available on-line at: http://www.ohcs.oregon.gov/OHCS/PPR_HousingNeedsModel.shtml.

Two demographic variables—age of head of household and household income—demonstrated significantly stronger correlation with housing tenure than other variables (including household size); they were consequently selected as the primary demographic variables for the model. In addition, the model uses household income as the key variable in determining the affordability component of housing needs.

The model assumes that the demographic and income structure of a study area will not significantly change over the planning period, though it does account for growth in population. The model also assumes that housing need for a study area can be derived from the actual cohort tenure data of a larger regional area. While the local supply of rental versus ownership housing may not represent housing need for that locality, it is assumed that on a larger regional basis, need and supply are in balance. The model compares local level data to regional data is one method of deriving need.

A major assumption in the model is that housing need is defined by cohort tenure choices and is equivalent to the actual cohort tenure data found within a large regional area. While the local supply of rental versus ownership housing may not be in equilibrium with tenure need in some markets, it is assumed that on a larger regional basis it is in equilibrium. The initial version of the model used all of Oregon as the regional area for parameter calculation and assignment.

The model defined that larger region differently for some communities than for others because significantly different housing choice decisions are made in urban communities than in rural communities. To account for these differences in choice, three versions of the model are available—Version U for communities that are either urban, college oriented, or resort oriented; Version M for rural communities between the size of 6,750 and 22,500; and Version S for rural communities under 6,750 in population. The analysis in this document is based on Version U.

The model examines housing and land needs for two time periods: current and future. In this case, the current housing needs are calculated for 2006 and the future needs are estimated for 2026. The model has an additional module to estimate buildable land needs that was not used in this analysis.

CURRENT HOUSING STATUS ANALYSIS

The model first calculates the total number of housing units needed for the planning period using population estimates, number of people in group quarters, number of occupied housing units and/or number of households, average household size, and desired vacancy rate for the study area. Price points for rental and ownership units were determined as follows:

- For rental units, housing costs were assumed to take no more than 30% of the household's income. Utilities were not included in rent.

- For owned units, three price points were selected. The model assumes that home owners will pay between 2.5 and 3 times their annual income for ownership units; thus, 2.5 times annual income was used as a low estimate and 3 times annual income as a high estimate. The average historical interest rate was used to arrive at a third ownership price range.

The next step in the model accounts for the fact that some households choose to live in a unit at a lower price point than they might be able to afford. This removes a unit from the supply of units at the lower price point. The model adjusts for these choices with an estimate of the percent of households that will chose to rent or buy a home at a lower price point than they might otherwise be able to afford. The model refers to this as an *out factor*. The user of the model estimates the out factor appropriate for the study area.

Recipients of tenant-based subsidies (such as Section 8 vouchers) require an additional off-setting variable: an estimate of the number of units which are rented to households that can only afford those units because they receive tenant-based subsidies. These households tend to occupy units in the lower price points.

The last step in the current housing status portion of the model requires the user to develop data on their current housing inventory for input into the *current inventory of dwelling units* template. The existing inventory of units must be categorized into the five housing types established for the model. Each of these housing types can be owner or renter occupied.

The five classifications of dwelling units are:

- Single family units—either site built or manufactured single family dwellings on their own lot
- Manufactured dwelling park unit—a single family dwelling unit located in a rental park
- Duplex unit—a two-family dwelling unit located on its own lot
- Tri-plex or Quad-plex unit—a three or four-family dwelling unit
- 5+ Multi-family unit—dwelling units in buildings with 5 or more units per building

FUTURE HOUSING STATUS ANALYSIS

In order to determine the future housing needs for a projected population, users of the model must estimate the demographic composition of that population and make some assumptions regarding their housing type choices by price point. These assumptions include future age-income cohort percentages and future out factors. Once the user has completed the Current Inventory of Dwelling Units template and the Housing Units Planned allocation, the model calculates the number of new units needed by price point, tenure, and housing type to bring the market into balance with the projected need at the end of the planning period. The

model summarizes the new needs by housing type, which can then be used by the community to drive their land use planning and housing policy decisions.

MODEL OUTPUT

This section presents summary tables from a model run ECO completed. This model assumes that the future housing mix will be approximately 75% single family housing types (including single-family detached, single-family attached, and manufactured homes) and 25% multifamily housing types (including duplexes, tri- and quad-plex, and five or more units).

The following tables summarize the output from the model run. The numbers in red and parentheses denote a *surplus* of units. The numbers in black denote a *deficit* of units.

Table B-1 shows current housing needs in Sandy based 2007 data input. The results suggest that Sandy has a surplus of units in the lowest price categories as well as in some of the mid-price categories. The results also show a current deficit of units at the higher price points.

Table B-1. Current housing needs, Sandy 2007

Rental				Ownership			
Rent	Current Unmet Need / (Surplus)	% of Need Met	Cumulative Units Needed	Price	Current Unmet Need / (Surplus)	% of Need Met	Cumulative Units Needed
0 - 199	(3)	103.4%	(3)	<56.7k	(201)	247.5%	(201)
200 - 429	5	97.3%	3	56.7k <85k	150	49.2%	(52)
430 - 664	71	80.4%	73	85k <113.3k	115	62..%	63
665 - 909	(86)	134.9%	(12)	113.3k <141.7k	(274)	172.6%	(211)
910 - 1149	126	48.3%	114	141.7k <212.5k	(175)	127.0%	(386)
1150 +	26	78.9%	140	212.5k+	267	49.8%	(119)

Source: HCS Housing Needs Model Run

Note: Numbers in red parentheses () denote a surplus of units; numbers in black denote a deficit.

Table B-2 shows projected housing needs for Sandy for the 2009-2029 period. The model output shows Sandy will need a total of 1,577 dwelling units over the 20-year planning period.³⁵ The model forecasts a tenure split of about 56% owner-occupied dwellings and 44% renter-occupied dwellings. Thus, the model predicts a much lower ownership rate than the 69% observed in the 2000 Census.

With respect to housing type mix, the model predicts the City will need about 74% single-family housing types (including single-family detached, single-family attached, and manufactured dwellings on lots), and 26% multifamily housing

³⁵ Note that this figure is significantly higher than the need of 3,691 units calculated by ECONorthwest. The assumptions and methods ECO used to get to that figure are shown in Table 4-8. ECO was unable to determine how the HCS model calculated future unit needs. To be conservative, the land needs estimates in this study are built from the ECO estimate of needed units.

types (duplexes, tri- and quad-plexes, and structures with 5 or more dwellings).
The model predicts a surplus of 83 manufactured dwelling units in parks.

Table B-2. Future housing needs, Sandy, 2009-2029

Rent	Needed Units	Single Family Units	Manufactd Dwelling Park Units	Duplex Units	Tri-Quadplex Units	5+ Multi-Family Units	Total Units
New Rental Units Needed							
0 - 194	48	(13)	6	(5)	10	50	48
195 - 422	108	(4)	30	(18)	25	75	108
423 - 655	191	54	72	(27)	16	76	191
656 - 897	23	73	35	(50)	(17)	(18)	23
898 - 1132	232	187	0	11	(10)	44	232
1133 +	78	91	0	(3)	(7)	(3)	78
Totals	680	388	143	(92)	17	224	680
Percentage		57.1%	21.0%	-13.5%	2.5%	32.9%	100.0%
New Ownership Units Needed							
<61k	(142)	11	(190)	37	0	0	(142)
61k<93.1k	279	228	(29)	80	0	0	279
93.1k<125k	265	213	(2)	54	0	0	265
125k<156.7k	(110)	(157)	(5)	52	0	0	(110)
156.7k<236.3	107	78	0	29	0	0	107
236.3k+	498	498	0	0	0	0	498
Totals	897	871	(226)	252	0	0	897
Percentage		97.1%	-25.2%	28.1%	0.0%	0.0%	100.0%
Total New Rental and Ownership Units							
Totals	1,577	1,259	-83	160	17	224	1,577
% of Total Units		79.8%	-5.3%	10.1%	1.1%	14.2%	100.0%

Source: HCS Housing Needs Model

Note: price points are in 1999 dollars and are not adjusted for inflation.

Summary of National and State Economic Trends

This appendix summarizes national, state, regional, county, and local trends affecting Sandy. It presents a socioeconomic profile of Sandy (relative to the Portland Metro Region, Clackamas County and Oregon) and describes trends that will influence the potential for economic growth in Sandy. This chapter covers recent and current economic conditions in the City, and forecasts from the State Employment Department for employment growth in Clackamas County. This appendix meets the intent of OAR 660-009-0015(1).

NATIONAL CONDITIONS

Economic development in Sandy over the next twenty will occur in the context of long-run national trends. The most important of these trends includes:

- **The aging of the baby boom generation, accompanied by increases in life expectancy.** The number of people age 65 and older will double by 2050, while the number of people under age 65 will grow only 12 percent. The economic effects of this demographic change include a slowing of the growth of the labor force, an increase in the demand for healthcare services, and an increase in the percent of the federal budget dedicated to Social Security and Medicare.³⁶
- **The growing importance of education as a determinant of wages and household income.** According to the Bureau of Labor Statistics, a majority of the fastest growing occupations will require an academic degree, and on average they will yield higher incomes than occupations that do not require an academic degree. In addition, the percentage of high school graduates that attend college will increase.³⁷
- **Continued growth in global trade and the globalization of business activity.** With increased global trade, both exports and imports rise. Faced with increasing domestic and international competition, firms will seek to reduce costs and some production processes will be outsourced offshore.³⁸

³⁶ The Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, 2006, *The 2006 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, May 1; Congressional Budget Office, 2006, *The Budget and Economic Outlook: Fiscal Years 2007 to 2016*, January; and Congressional Budget Office, 2005, *The Long-Term Budget Outlook*, December.

³⁷ Daniel E. Hecker, "Occupational Employment Projections to 2014," *Monthly Labor Review* 128: 11, November, pp. 70-101.

³⁸ Jay M. Berman, 2005, "Industry Output and Employment Projections to 2014," *Monthly Labor Review* 128:11, November, pp. 45-69.

- **Innovation in electronics and communication technology, and its application to production.** Advancements in communication and manufacturing technology increase worker productivity. There will be growth in the production of both services and goods, but the economy's emphasis on services will increasingly dominate.³⁹
- **Continued shift of employment from manufacturing and resource-intensive industries to the service-oriented sectors of the economy.** Increased worker productivity and the international outsourcing of routine tasks lead to declines in employment in the major goods-producing industries. Projections from the Bureau of Labor Statistics indicate that U.S. employment growth will continue to be strongest in professional and business services, healthcare and social assistance, and other service industries. Construction employment will also grow.⁴⁰
- **The combination of rising energy costs, strong energy demand, and requirements to reduce emissions and increase use of renewable fuels.** Output from the most energy-intensive industries will decline, but growth in the population and in the economy will increase the total amount of energy demanded. Energy sources will diversify and the energy efficiency of automobiles, appliances, and production processes will increase.⁴¹
- **Continued westward and southward migration of the U.S. population.** Although there are some exceptions at the state level, a 2006 U.S. Census report documents an ongoing pattern of interstate population movement from the Northeast and Midwest to the South and West.⁴²
- **The importance of high-quality natural resources.** The relationship between natural resources and local economies has changed as the economy has shifted away from resource extraction. Increases in the population and in households' incomes, plus changes in tastes and preferences, have dramatically increased demands for outdoor recreation, scenic vistas, clean water, and other resource-related amenities. Such amenities contribute to a region's quality of life and play an important role in attracting both households and firms.⁴³

³⁹ Jay M. Berman, 2005, "Industry Output and Employment Projections to 2014," *Monthly Labor Review* 128:11, November, pp. 45-69.

⁴⁰ Jay M. Berman, 2005, "Industry Output and Employment Projections to 2014," *Monthly Labor Review* 128:11, November, pp. 45-69; and Daniel E. Hecker, "Occupational Employment Projections to 2014," *Monthly Labor Review* 128: 11, November, pp. 70-101.

⁴¹ Energy Information Administration, 2006, *Annual Energy Outlook 2006 with Projections to 2030*, U.S. Department of Energy, DOE/EIA-0383(2006), February.

⁴² Marc J. Perry, 2006, *Domestic Net Migration in the United States: 2000 to 2004*, Washington, DC, Current Population Reports, P25-1135, U.S. Census Bureau.

⁴³ For a more thorough discussion of relevant research, see, for example, Power, T.M. and R.N. Barrett. 2001. *Post-Cowboy Economics: Pay and Prosperity in the New American West*. Island Press, and Kim, K.-K., D.W. Marcouiller, and S.C. Deller. 2005. "Natural Amenities and Rural Development: Understanding Spatial and Distributional Attributes." *Growth and Change* 36 (2): 273-297.

Short-term national trends will also affect economic growth in the region, but these trends are difficult to predict. At times these trends may run counter to the long-term trends described above. A recent example is the downturn in economic activity in 2001 following the collapse of Internet stocks and the attacks of September 11. The resulting recession caused Oregon's employment in the Information Technology and high-tech Manufacturing industries to decline. Employment in these industries has partially recovered, however, and they will continue to play a significant role in the national, state, and local economy over the long run. This report takes a long-run perspective on economic conditions (as the Goal 9 requirements intend) and does not attempt to predict the impacts of short-run national business cycles on employment or economic activity.

STATE TRENDS

State and regional trends will also affect economic development in Sandy over the next twenty years.

- **Continued in-migration from other states.** Oregon will continue to experience in-migration from other states, especially California and Washington. According to information from the Portland State University Population Research Center, Oregon had net interstate in-migration (more people moved *to* Oregon than moved *from* Oregon) during the period 1990-2006. Oregon had more than 595,000 more in-migrants than out-migrants during the period 1990-2006, accounting for 70% of Oregon's population growth over the period. The share of population growth from in-migration was higher during the 1900's (73% of population growth) than for the 2000-2006 period (65% of population growth).
- **Tightening of labor market as a result of retiring workers.** As the baby-boomers reach retirement age over the next two decades, the State may have a scarcity of qualified workers. In the next decade, the State projects that there will be almost twice as many job openings resulting from retirements compared to openings resulting from creation of new jobs. The sectors with the most employment and the largest share of employees 55 years or older include: Education Services; Real Estate; Transportation and Warehousing; Health Care and Social Assistance; Public Administration; and Agriculture, Forestry, Fishing, and Hunting. The State expects little or no growth in Manufacturing employment over the next decade but expects that retirements will create demand for employees in Manufacturing.⁴⁴
- **Concentration of population and employment in the Willamette Valley.** Nearly 70% of Oregon's population lives in the Willamette Valley. About 10% of Oregon's population lives in Southern Oregon and 8% lives in Central Oregon. Employment growth generally follows the

⁴⁴ Oregon Employment Department Workforce Analysis Section, *Will Oregon Have Enough Workers?*, 2007

same trend as population growth. Employment growth varies between regions even more, however, as employment reacts more quickly to changing economic conditions. Total employment increased in each of the state's regions over the period 1970-2004 but over 70% of Oregon's employment was located in the Willamette Valley over the period 1970-2004.

- **Shift from natural resource-based to high-tech industries.** Since 1970, Oregon started to transition away from reliance on traditional resource-extraction industries. A significant indicator of this transition is the shift within Oregon's manufacturing sector, with a decline in the level of employment in the Lumber & Wood Products industry and concurrent growth of employment in high-technology manufacturing industries (Industrial Machinery, Electronic Equipment, and Instruments).
- **Change in the type of the industries in Oregon.** As Oregon has transitioned away from natural resource-based industries, the composition of Oregon's employment has shifted from natural resource based manufacturing and other industries to service industries. The share of Oregon's total employment in Service industries increased from its 1970s average of 19% to 30% in 2000, while employment in Manufacturing declined from an average of 18% in the 1970s to an average of 12% in 2000.
- **Continued lack of diversity in the State Economy.** While the transition from Lumber and Wood Products manufacturing to high-tech manufacturing has increased the diversity of employment within Oregon, it has not significantly improved Oregon's diversity relative to the national economy. Oregon's relative diversity has historically ranked low among states. Oregon ranked 35th in diversity (1st = most diversified) based on Gross State Product data for 1963–1986, and 32nd based on data for the 1977–1996 period.⁴⁵ An analysis from 2007 ranked Oregon 31st.⁴⁶ These rankings suggest that Oregon is still heavily dependent on a limited number of industries. Relatively low economic diversity increases the risk of economic volatility as measured by changes in output or employment.

The changing composition of employment has not affected all regions of Oregon evenly. Growth in high-tech and Services employment has been concentrated in urban areas of the Willamette Valley. The brunt of the decline in Lumber & Wood Products employment was felt in rural Oregon, where these jobs represented a larger share of total employment and an even larger share of high-paying jobs than in urban areas.

⁴⁵ LeBre, Jon. 1999. "Diversification and the Oregon Economy: An Update." *Oregon Labor Trends*. February.

⁴⁶ CFED, 2007, The Development Report Card for the States, <http://www.cfed.org>.

OVERVIEW OF ECONOMIC CONDITIONS IN THE PORTLAND METRO REGION, CLACKAMAS COUNTY AND SANDY

Future economic growth in Sandy will be affected in part by demographic and economic trends in the city and surrounding region. A review of historical demographic and economic trends provides a context for establishing a reasonable expectation of future growth in Sandy. In addition, the relationship between demographic and economic indicators such as population and employment can help form judgments about future trends and resulting economic conditions. This section addresses the following trends in Sandy: personal income, employment, and business activity. Chapter 2 includes a discussion of historic population trends in the Portland Metro Region, Clackamas County, and Sandy.

POPULATION CHARACTERISTICS

Population growth in Oregon tends to follow economic cycles. Historically, Oregon's economy is more cyclical than the nation's, growing faster than the national economy during expansions, and contracting more rapidly than the nation during recessions. Oregon grew more rapidly than the U.S. in the 1990s (which was generally an expansionary period) but lagged behind the U.S. in the 1980s. Oregon's slow growth in the 1980s was primarily due to the nationwide recession early in the decade.

Oregon's population growth regained momentum beginning in 1987, growing at annual rates of between 1.4% and 2.9% between 1988 and 1996. Population growth for Oregon and its regions slowed in 1997, to 1.1% statewide, the slowest rate since 1987. Between 2000 and 2005 the rate of population growth in Oregon increase slightly to 1.2% annually.

Table C-1 shows population over the 1980-2006 period for the U.S., Oregon, the Willamette Valley, Portland-Vancouver-Beaverton MSA⁴⁷, Clackamas County, and Sandy. The Portland Region grew at a faster rate than Oregon or the Willamette Valley, at an average annual rate of 1.81%, adding 796,023 residents over the 26-year period. Clackamas County grew at an average annual rate of 1.62%, adding 125,129 residents. Sandy grew by an average of 3.48% annually and added 4,165 residents over the 26-year period..

⁴⁷ This report refers to the Portland-Vancouver-Beaverton MSA as either the Portland Region or the Portland MSA.

Table C-1 Population in the U.S., Oregon, the Willamette Valley, Portland Region, Clackamas County, and Sandy, 1980-2006

Area	Population				Change 1980 to 2006		
	1980	1990	2000	2006	Number	Percent	AAGR
U.S.	226,545,805	248,709,873	281,421,906	299,398,484	72,852,679	32%	1.08%
Oregon	2,639,915	2,842,321	3,421,399	3,690,505	1,050,590	40%	1.30%
Willamette Valley	1,788,577	1,962,816	2,380,606	2,566,295	777,718	43%	1.40%
Portland-Van.-Beav. MSA	1,341,542	1,523,741	1,927,881	2,137,565	796,023	59%	1.81%
Clackamas County	241,911	278,850	338,391	367,040	125,129	52%	1.62%
Sandy	2,905	4,152	5,385	7,070	4,165	143%	3.48%

Source: U.S. Census, the Population Research Center at Portland State University

Notes: The Willamette Valley includes Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, Yamhill Counties. The Portland Region (Portland-Vancouver-Beaverton MSA) includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark and Skamania Counties in Washington

Oregon’s population is also related to economic conditions in other states—most notably, in California. During downturns in California’s economy, people leave the state for opportunities in Oregon and elsewhere. As California’s economy recovers, the population exodus tapers off. Such interstate migration is a major source of population change.

According to a U.S. Census study, Oregon had net interstate in-migration (more people moved *to* Oregon than moved *from* Oregon) during the period 1990-2004.⁴⁸ According to information from the Portland State University Population Research Center, Oregon had net interstate in-migration (more people moved *to* Oregon than moved *from* Oregon) of more than 595,000 people during the period 1990-2006, which accounted for 70% of Oregon’s population growth over the period. The share of population growth from in-migration was higher during the 1900’s (73% of population growth) than for the 2000-2006 period (65% of population growth).

The Oregon Department of Motor Vehicles collects data on out-of-state driver licenses surrendered by applicants for Oregon licenses. These data provide an indicator of the source of Oregon’s in-migration. During the period 1999-2005, over 30% of surrendered licenses were from California and approximately 17% were from Washington. All other states each accounted for less than 5% of the surrendered licenses.⁴⁹ The DMV also collects data on Oregon driver licenses surrendered in other states. These data indicate that Washington and California are the top destinations for Oregon’s out-migrants.⁵⁰

The *1999 Oregon In-migration Study* found that migrants to Oregon tend to have the same characteristics as existing residents, with some differences—recent in-migrants to Oregon are, on average, younger and more educated, and are more

⁴⁸ Marc J. Perry, 2006, *Domestic Net Migration in the United States: 2000 to 2004*, Washington, DC, Current Population Reports, P25-1135, U.S. Census Bureau.

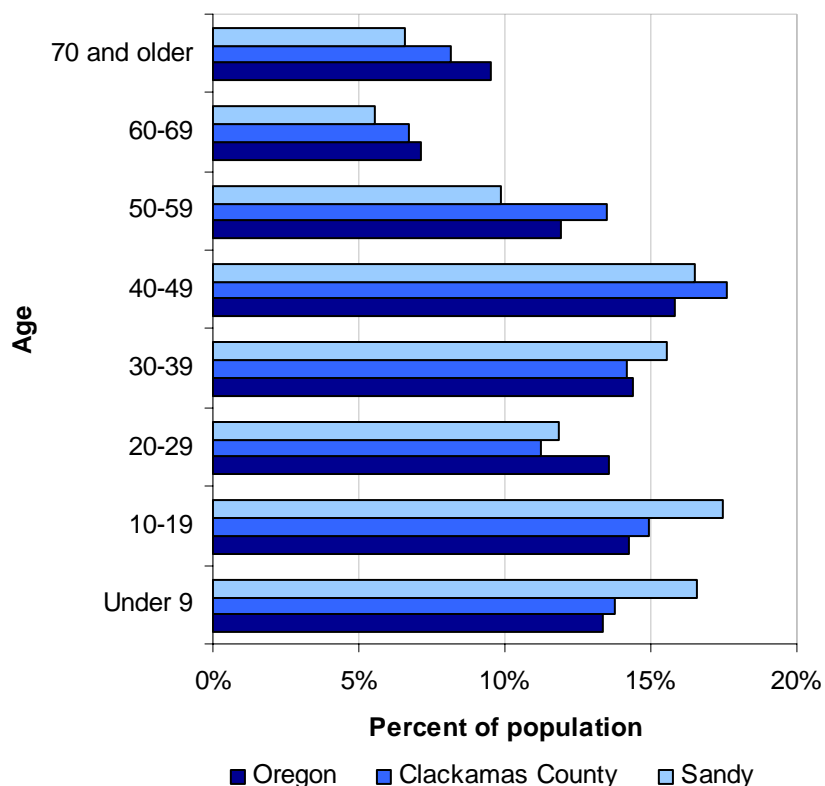
⁴⁹ See Oregon Department of Motor Vehicles, “Driver Issuance Statistics,” http://www.oregon.gov/ODOT/DMV/news/driver_stats.shtml, accessed May 25, 2006.

⁵⁰ For a discussion of the DMV data, see Ayre, A, 2004, *People Moved to Oregon Despite Recession*, Oregon Employment Department, July.

likely to hold professional or managerial jobs, compared to Oregon's existing population. The race and ethnicity of in-migrants generally mirrors Oregon's established pattern, with one exception: Hispanics make up more than 7% of in-migrants but only 3% of the state's population. The number-one reason cited by in-migrants for coming to Oregon was family or friends, followed by quality of life and employment.⁵¹

Figure C-1 shows the populations of Oregon, Clackamas County, and Sandy by age for 2000. Sandy has a greater proportion of its population less than 30 years old than Oregon and Clackamas County, especially residents under 19 years. Sandy has fewer residents over 50 compared to the County and State averages.

Figure C-1. Population distribution by age, Oregon, Clackamas County, and Sandy, 2000



Source: U.S. Census, 2000

Table C-2 shows population by age for Sandy for 1990 and 2000. The data show that Sandy County grew by 1,233 people between 1990 and 2000, which is a 30% increase. The age breakdown shows that the City experienced an increase in population for every age group, except for people 65 years and older. The

⁵¹ State of Oregon, Employment Department. 1999. *1999 Oregon In-migration Study*.

fastest growing age groups were aged 45 to 64 years, 5 to 17 years, and 25 to 44 years.

Between 1990 and 2006, Clackamas County experienced the greatest growth in people aged 45 to 64, which accounted for 56% of the County's growth over the sixteen year period. Like Sandy, Clackamas county experienced substantial growth in people aged 5 to 17. However, about 11% of Clackamas County's population growth was in people 65 and older, compared to a decrease of people in this age range in Sandy.

Table C-2. Population by age, Sandy, 1990 and 2000

Age Group	1990		2000		Change		
	Number	Percent	Number	Percent	Number	Percent	Share
Under 5	383	9%	442	8%	59	15%	-1%
5-17	931	22%	1,224	23%	293	31%	0%
18-24	349	8%	446	8%	97	28%	0%
25-44	1,416	34%	1,686	31%	270	19%	-3%
45-64	582	14%	1,116	21%	534	92%	7%
65 and over	491	12%	471	9%	-20	-4%	-3%
Total	4,152	100%	5,385	100%	1,233	30%	0%

Source: U.S. Census, 1990 and 2000

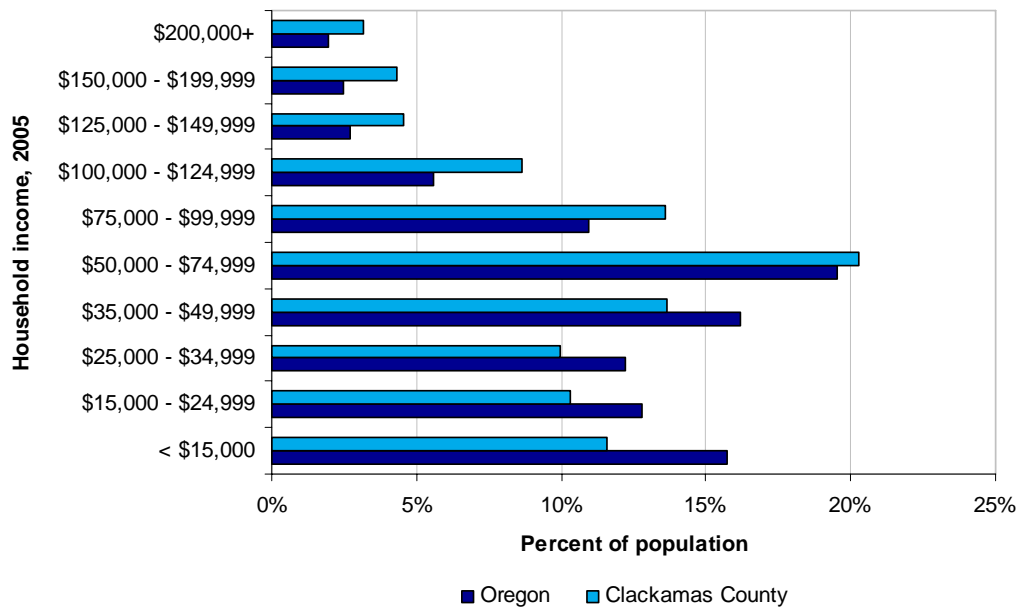
PERSONAL INCOME

Household income has historically been higher in the Portland Region compared to the State. The median household income in Sandy in 1999 was approximately \$42,115, which was slightly higher than Oregon's median household income of \$40,916 and the Portland MSA median household income of \$40,146.⁵² Sandy's median household income was about 81% of Clackamas County's median household income of \$52,080.

In 2005, the median household income in Clackamas County was \$54,480, compared to the State average of \$42,944. Figure C-2 shows the distribution of household income of Oregon and Clackamas County in 2005. Figure C-2 shows that household income was higher in Clackamas County than in Oregon. A larger share of households in Clackamas County had income of more than \$50,000 than in Oregon, 58% of households in Clackamas County compared to 47% in Oregon.

⁵² The Portland MSA includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark and Skamania Counties in Washington.

Figure C-2 Distribution of household income, Oregon and Clackamas County, 2005

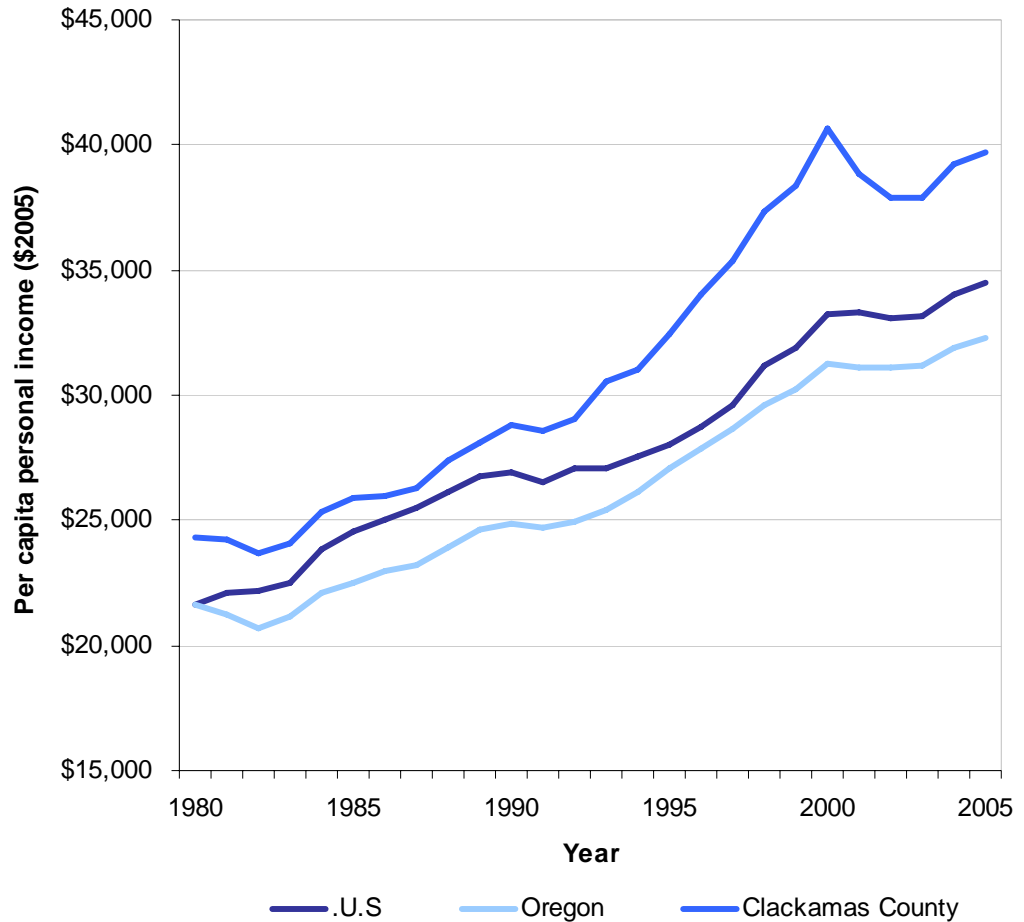


Source: U.S. Census American Community Survey, 2005

Figure C-3 shows the change in per capita personal income for the U.S., Oregon, and Clackamas County between 1980 and 2005 (in constant 2005 dollars). Oregon’s per capita personal income was consistently lower than the U.S. average between 1980 and 2005. While the gap between the Oregon and US average narrowed in the mid-1990s, it widened again starting in the late 1990s through 2003.

Clackamas County’s personal income over the 25-year period has been consistently higher than the US or Oregon’s personal income. In 2005, per capita personal income in Clackamas County was approximately 123% of Oregon’s per capita personal income and 115% of the U.S. per capita personal income. The gap between per capita income in Clackamas County compared to Oregon widened in the 1990s but started to narrow after the per capita income in the County dropped during the recession between 2001 and 2004. During the 25-year period, Clackamas County’s per capita personal income grew by 61%, while personal income grew by 67% in Oregon and 63% nationally during the same period.

Figure C-3 Per capita personal income in the U.S., Oregon, and Clackamas County, 1980-2005, (\$2005)



Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce

In summary, income has historically been higher in the Portland Region, especially in Clackamas County, than the State average. In 2005, household income in Clackamas was 127% of the State average. Household income in Sandy 1 in 1999 was higher than the State’s median income but below Clackamas County’s median income.

EMPLOYMENT

According to Census data, the majority of residents of Sandy work in the Portland Region. This section includes a review of employment trends in both Clackamas County and the Portland Region, as well as a summary of employment trends in Sandy.

Tables A-3 through A-6 present data from the Oregon Employment Department that show changes in covered employment⁵³ for Clackamas County and the portion of the Portland MSA located in Oregon⁵⁴ for 1980 to 2006. The changes in sectors and industries are shown in two tables: (1) between 1980 and 2000 and (2) between 2001 and 2006. The analysis is divided in this way because of changes in industry and sector classification that made it difficult to compare information about employment collected after 2001 with information collected prior to 2000.

Employment data in this section is summarized by *sector*, each of which includes several individual *industries*. For example, the Retail Trade sector includes General Merchandise Stores, Motor Vehicle and Parts Dealers, Food and Beverage Stores, and other retail industries.

Table C-3 shows the changes in covered employment by sector in Clackamas County between 1980 and 2000. Employment in the County grew by 114% over the twenty-year period, from 62,103 to 133,057 adding 70,954 jobs. Every sector added jobs during this period. The sectors with the greatest change in employment were Services, Retail Trade and Wholesale Trade, adding a total of 44,089 jobs, or 62% of the total increase in employment. The sector with the smallest increase was Mining, which added 4 jobs.

Although the Manufacturing sector added more than 3,000 jobs during the twenty-year period, the share of employment in Manufacturing decreased from 24% of all employment in 1980 to 14% of employment in 2006. The composition of the manufacturing industry changed during the 20-year period. The manufacturing industries that gained the most employment were Primary Metal Industries (+1,303 jobs), Rubber & Miscellaneous Plastic Products (+803 jobs), and Transportation Equipment (+664 jobs). The manufacturing industries that lost the most employment were Lumber and Wood Products (-1,088 jobs), Paper and Allied Products (-759 jobs), and Apparel and Other Textile Products (-111 jobs).

⁵³ Covered employment refers to jobs covered by unemployment insurance, which includes most wage and salary jobs but does not include sole proprietors, seasonal farm workers, and other classes of employees.

⁵⁴ The portion of the Portland MSA located in Oregon includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties. The portion of the Portland MSA that is not included in these summaries are Clark and Skamania Counties in Washington.

Table C-3 Covered employment in Clackamas County, 1980-2000

Sector	1980	1990	2000	Change from 1980 to 2000			
				Difference	Percent	AAGR	Share
Agriculture, Forestry and Fishing	1,483	3,751	5,658	4,175	282%	6.9%	2%
Mining	76	54	80	4	5%	0.3%	0%
Construction	3,653	5,026	9,397	5,744	157%	4.8%	1%
Manufacturing	15,031	15,572	18,079	3,048	20%	0.9%	-11%
Trans., Comm., and Utilities	1,905	3,227	5,128	3,223	169%	5.1%	1%
Wholesale Trade	4,144	8,850	11,288	7,144	172%	5.1%	2%
Retail Trade	12,697	21,813	27,659	14,962	118%	4.0%	0%
Finance, Insurance and Real Estate	2,605	3,863	8,226	5,621	216%	5.9%	2%
Services	9,313	17,519	31,296	21,983	236%	6.2%	9%
Nonclassifiable/all others	8	64	94	86	1075%	13.1%	0%
Government	11,188	12,529	16,152	4,964	44%	1.9%	-6%
Total	62,103	92,268	133,057	70,954	114%	3.9%	0%

Source: Oregon Employment Department, Oregon Labor Market Information System, Covered Employment & Wages. Summary by industry and percentages calculated by ECONorthwest

Table C-4 shows the change in covered employment by sector for Clackamas County between 2001 and 2006. Employment increased by 12,879 jobs or 10% during this period. The sectors that added the most employees were Health and Social Assistance, Construction, Management of Companies, and Finance and Insurance. The sectors that lost the greatest number of employees during this period were Real Estate, Rental and Leasing and Retail Trade.

Table C-4 Covered employment in Clackamas County, 2001-2006

Sector	2001	2006	Change from 2001 to 2006			
			Difference	Percent	AAGR	Share
Agriculture, Forestry, Fishing, & Mining	4,167	4,780	613	15%	3.5%	0%
Construction	9,324	11,779	2,455	26%	6.0%	1%
Manufacturing	18,187	18,328	141	1%	0.2%	-1%
Wholesale	10,384	10,407	23	0%	0.1%	-1%
Retail	17,648	17,301	(347)	-2%	-0.5%	-1%
Transportation, Warehousing & Utilities	4,439	5,606	1,167	26%	6.0%	1%
Information	1,725	1,681	(44)	-3%	-0.6%	0%
Finance & Insurance	5,186	6,381	1,195	23%	5.3%	0%
Real Estate, Rental & Leasing	3,115	2,622	(493)	-16%	-4.2%	-1%
Professional, Scientific & Technical Services	5,569	6,561	992	18%	4.2%	0%
Management of Companies	1,078	2,300	1,222	113%	20.9%	1%
Admin. Support & Cleaning Services	6,636	7,465	829	12%	3.0%	0%
Education	1,112	1,551	439	39%	8.7%	0%
Health & Social Assistance	11,910	14,657	2,747	23%	5.3%	1%
Arts, Entertainment & Recreation	1,681	1,808	127	8%	1.8%	0%
Accommodations & Food Services	9,835	11,218	1,383	14%	3.3%	0%
Other Services (except Public Admin.)	5,426	5,574	148	3%	0.7%	0%
Private Non-Classified	79	83	4	5%	1.2%	0%
Government	16,497	16,775	278	2%	0.4%	-1%
Total	133,998	146,877	12,879	10%	2.3%	0%

Source: Oregon Employment Department, Oregon Labor Market Information System, Covered Employment & Wages. Summary by industry and percentages calculated by ECONorthwest

Table C-5 shows the changes in covered employment by sector in the Oregon portion of the Portland MSA between 1980 and 2000. Employment in the Region grew from 485,239 to 849,076, adding 363,837 jobs (75%). Every sector added jobs during this period, except for Nonclassifiable/ all others. The sectors with the greatest change in employment were Services and Retail Trade, adding a total of 201,327 jobs.

Although employment in Manufacturing grew by nearly 20,000 jobs, the share of employment in Manufacturing decreased in the Portland Region from 21% of employment in 1980 to 15% in 2000. The manufacturing industries that gained the most employment were Electric and Electronic Equipment (+20,137 jobs), Printing and Publishing (+4,818 jobs), Rubber & Miscellaneous Plastic Products (+3,101 jobs), and Transportation Equipment (+2,917 jobs). The manufacturing industries that lost the most employment were Instruments and Related Products (-10,630 jobs), Lumber and Wood Products (-2,903 jobs), Paper and Allied Products (-1,957 jobs), and Apparel and Other Textile Products (-921 jobs).

Table C-5 Covered employment in the Oregon portion of the Portland MSA, 1980-2000.

Sector	1980	1990	2000	Change from 1980 to 2000			
				Difference	Percent	AAGR	Share
Agriculture, Forestry and Fishing	6,369	12,522	17,788	11,419	179%	5.3%	1%
Mining	534	563	613	79	15%	0.7%	0%
Construction	23,420	29,614	45,338	21,918	94%	3.4%	1%
Manufacturing	108,320	107,006	128,275	19,955	18%	0.8%	-7%
Trans., Comm., and Utilities	1,835	37,868	48,651	46,816	2551%	17.8%	5%
Wholesale Trade	44,580	52,567	63,101	18,521	42%	1.8%	-2%
Retail Trade	90,989	114,435	148,565	57,576	63%	2.5%	-1%
Finance, Insurance and Real Estate	37,086	41,525	54,404	17,318	47%	1.9%	-1%
Services	96,427	158,727	240,178	143,751	149%	4.7%	8%
Nonclassifiable/all others	547	293	466	-81	-15%	-0.8%	0%
Government	75,132	82,501	101,697	26,565	35%	1.5%	-4%
Total	485,239	637,621	849,076	363,837	75%	2.8%	0%

Source: Oregon Employment Department, Oregon Labor Market Information System, Covered Employment & Wages. Summary by industry and percentages calculated by ECONorthwest

Note: The Oregon Portion of the Portland MSA includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties.

Table C-6 shows the change in covered employment by sector for the Oregon portion of the Portland MSA between 2001 and 2006. Employment increased by 30,163 jobs or 4% during this period. The sectors with the largest increases in numbers of employees were Health and Social Assistance, Government, Accommodations and Food Services, and Construction. Sectors that lost the greatest number of employees during this period were Manufacturing and Finance and Insurance.

Table C-6. Covered employment in the Oregon portion of the Portland MSA, 2001-2006

Sector	2001	2006	Change from 2001 to 2006			
			Difference	Percent	AAGR	Share
Agriculture, Forestry, Fishing, & Mining	12,887	13,814	927	7%	1.4%	0%
Construction	44,170	50,116	5,946	13%	2.6%	0%
Manufacturing	120,246	112,193	(8,053)	-7%	-1.4%	-1%
Utilities	2,714	2,247	(467)	-17%	-3.7%	0%
Wholesale	51,054	52,353	1,299	3%	0.5%	0%
Retail	91,021	91,505	484	1%	0.1%	0%
Transportation & Warehousing	30,527	30,671	144	0%	0.1%	0%
Information	24,173	20,860	(3,313)	-14%	-2.9%	0%
Finance & Insurance	38,671	39,833	1,162	3%	0.6%	0%
Real Estate Rental & Leasing	16,912	16,048	(864)	-5%	-1.0%	0%
Professional, Scientific & Technical Srv.	43,364	44,263	899	2%	0.4%	0%
Management of Companies	20,003	21,241	1,238	6%	1.2%	0%
Admin. Support & Cleaning Services	52,447	54,057	1,610	3%	0.6%	0%
Education	13,319	16,374	3,055	23%	4.2%	0%
Health & Social Assistance	74,969	85,596	10,627	14%	2.7%	1%
Arts, Entertainment & Recreation	10,185	11,281	1,096	11%	2.1%	0%
Accommodations & Food Services	63,138	69,124	5,986	9%	1.8%	0%
Other Services (except Public Admin.)	31,759	32,748	989	3%	0.6%	0%
Private Non-Classified	359	358	(1)	0%	-0.1%	0%
Government	103,061	110,460	7,399	7%	1.4%	0%
Total	844,979	875,142	30,163	4%	0.7%	0%

Source: Oregon Employment Department, Oregon Labor Market Information System, Covered Employment & Wages. Summary by industry and percentages calculated by ECONorthwest

Note: The Oregon Portion of the Portland MSA includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties.

Table C-7 shows covered employment by sector and industry within the Sandy Urban Growth Boundary (UGB) for 2005. The data in Table C-7 is based on confidential records for individual employers provided to the Oregon Employment Department. Table C-7 does not report employment in sectors where there were fewer than three firms or where one firm accounts for greater than 80% of employment in order to maintain the confidentiality of individual employers.

Table C-7 shows that Sandy had 293 establishments with 2,918 covered workers. The sectors with the largest level of employment in 2005 were Retail Trade (23%), Government (17%), and Accommodations, Food Services, Arts and Entertainment (16%). Together these sectors accounted for 1,625 jobs or 56% of employment in Sandy.

The average pay for covered employees in 2005 was \$29,588, compared with the County average of \$37,815 and the State average of \$36,593.⁵⁵ The sectors with the highest average pay per employee were Professional and Technical Services and Management of Companies, Construction, and Government. The

⁵⁵ Pay per employee in Sandy in 2005 was about \$7,000 lower than the State average for covered employment, while household income in Sandy was about \$1,200 higher than the State average in 1999. This discrepancy suggests that Sandy has a substantial amount of employment not included in the covered employment summary, such as sole proprietors.

sectors with the lowest average pay per employee were Administrative and Support Services and Real Estate.

Table C-7. Covered employment in Sandy UGB by sector and industry, 2005

Sector/Industry	Est.	Emp.	Average	
			Payroll	Pay/Emp.
Construction	38	187	\$7,751,111	\$41,450
Manufacturing and Agriculture	22	291	\$10,758,774	\$36,972
Fabricated Metal Product Manufacturing	7	87	\$3,889,652	\$44,709
Other Manufacturing & Agriculture	15	204	\$6,869,122	\$33,672
Wholesale Trade	11	32	\$1,268,204	\$39,631
Retail Trade	42	673	\$19,378,342	\$28,794
Motor Vehicle and Parts Dealers	8	221	\$9,326,559	\$42,202
Gasoline Stations	3	34	\$606,073	\$17,826
Building Material and Garden Equipment and Supplies	5	32	\$729,520	\$22,798
Furniture and Home Furnishings Stores	4	10	\$233,259	\$23,326
Other Retail	22	376	8,482,931	\$22,561
Transportation and Warehousing	8	32	\$768,021	\$24,001
Information	3	71	\$2,168,540	\$30,543
Finance and Insurance	15	87	\$3,001,352	\$34,498
Real Estate and Rental and Leasing	16	43	\$761,226	\$17,703
Professional & Tech. Srv and Mgt. of Companies	19	83	\$3,613,811	\$43,540
Administrative and Support Services	9	23	\$391,189	\$17,008
Health Care and Social Assistance	27	270	\$7,259,452	\$26,887
Ambulatory Health Care Services	20	164	\$5,425,269	\$33,081
Nursing and Residential Care Facilities	3	80	\$1,374,010	\$17,175
Social Assistance	4	26	\$460,173	\$17,699
Accommodations & Food Srv & Arts, Entertainment	37	453	5,634,324	\$12,438
Food Services and Drinking Places	34	421	\$5,265,614	\$12,507
Other Accommodations & Arts	3	32	\$368,710	\$11,522
Other Services (except Public Administration)	25	174	3,623,031	\$20,822
Personal and Laundry Services	6	83	\$2,051,936	\$24,722
Repair and Maintenance	8	43	\$1,015,981	\$23,627
Other Services	11	48	555,114	24,633
Government	21	499	\$19,961,352	\$40,003
Total	293	2,918	86,338,729	\$29,588

Source: Confidential Quarterly Census of Employment and Workforce (QCEW) data provided by the Oregon Employment Department. Summary by sector and industry, percent of total employment, and average payroll per employee by ECONorthwest.

In summary, more than two-thirds of employment growth in the Portland Region has been in service sectors since 1980, accounting for more than 240,000 new jobs. Health and Social Assistance is the Service industry that has experienced the largest increase in employment between 2001 to 2006, adding more than 10,000 jobs in the Portland Region. However, Manufacturing continues to be an important source of employment in Clackamas County and the Portland Region. The Manufacturing industries that have grown the most in both Clackamas County and the Portland Region are Rubber & Miscellaneous Plastic Products and Transportation Equipment.

The composition of Sandy's economy is different (but related to) the composition of Portland Region's economy. About two-thirds of covered

employment in Sandy is in Service sectors, mostly in Retail Trade and Accommodations and Food Services. Compared to the Portland Region, a smaller share of covered employment in Sandy is in Manufacturing and Health Care and Social Assistance.

BUSINESS ACTIVITY

The Goal 9 administrative rule (specifically, OAR 660-009-0015(2)) suggests that local governments take into consideration expansion plans of major employers when determining the site requirements of major employers. ECONorthwest interviewed four major employers in Sandy⁵⁶ about their plans for the next twenty years, including: their plans for adding employees, plans for expanding their facilities, whether they would need to purchase land for expansion, whether they have plans to move their facilities outside of Sandy, and whether there are infrastructure deficiencies that affect their ability to continue operations in Sandy.

Of the four firms interviewed, two firms have expansion plans and expect to add employees over the next twenty years. Two firms have no plans to add employees (other than maintaining current staff levels, in the case of Konell Construction) or expand their facilities. The School District, the only firm with expansion plans, expects to use land they already own for their expansion. The plans of the firms interviewed are summarized in Table C-8.

Table C-8. Employment and expansion plans of major employers, Sandy, 2007.

Firm name	Add jobs	Expand facilities	Purchase land for expansion
Oregon Trail School District	Yes	Yes	No
US Forest Service	No	No	No
Mt. Hood Cleaners and Window Coverings	Yes	No	No
Konell Construction and Demolition	Maintain current level	No	No

Source: Interviews by ECONorthwest.

The following is a list of the major employers interviewed, and their responses regarding firm expansion plans.

- Oregon Trail School District (430+ employees):** Oregon Trail School District plans to add about 10 employees within the next two years. They are also planning to construct a new high school a few blocks from the site of the current high school, which would become operational no earlier than 2011. The School District currently owns about 120 acres of land outside of the Sandy City limits that is used for conservation and timber education; part of that land could eventually be sold to a conservation organization.

⁵⁶ Note: ECONorthwest also contacted US Metal Works, but was unable to interview this company.

- **US Forest Service (80+ employees):** The Forest Service has no plans to hire new employees and has no plans to expand their office space. The Forest Service owns a great deal of land in surrounding areas but has no additional land within the Sandy city limits.
- **Mount Hood Cleaners and Window Coverings (72+ employees):** Mount Hood Cleaners expects to add 1-2 positions within the next two years. They have no plans to expand their facilities and own no additional land.
- **Konell Construction and Demolition (65+ employees)** Konell Construction plans to maintain current staff levels, and has no plans to expand facilities or relocate. They own no additional land.

OUTLOOK FOR GROWTH IN SANDY

Since 1980, Sandy’s population has grown faster than Clackamas County. Over the twenty-six year period, Sandy added 4,165 residents at an average annual rate of 3.48%, compared to the County’s average annual growth rate of 1.62% over the same period. Table C-9 shows the population forecast and employment forecast for Sandy from 2007 to 2027. Sandy’s population and employment are forecast to grow at 4.3% annually over the twenty-year period.

Table C-9. Forecast population and employment, Sandy UGB, 2009-2029

Year	Population	Employment	Pop/Emp
2007	7,228	4,486	1.61
2012	8,921	5,537	1.61
2017	11,012	6,834	1.61
2022	13,592	8,435	1.61
2027	16,776	10,411	1.61
Change 2007-2027			
Number	9,548	5,925	
Percent	132%	132%	
AAGR	4.30%	4.30%	

Source: City of Sandy; ECONorthwest

Table C-10 shows the Oregon Employment Department’s forecast for employment by industry between 2004 and 2014 for Region 15, which is Clackamas County. Table C-10 shows that the Oregon Employment Department forecasts a faster rate of growth for Region 15 (16.3% increase in jobs) than the state average (15%). The forecast projects the creation of 11,280 new jobs in Clackamas County over the ten-year period. The sectors that are expected to lead employment growth in Clackamas County are Trade, Transportation and Utilities, and Education and Health Services. Together, these sectors are expected to add 9,660 jobs or 44% of the employment growth in Clackamas County between 2004 and 2014.

Table C-10. Nonfarm employment forecast by industry in Region 15 (Clackamas County), 2004-2014

Sector/ Industry	2004	2014	Change	
			Number	Percent
Natural Resources & Mining	190	190	0	0.0%
Construction	9,520	11,630	2,110	22.2%
Manufacturing	17,800	18,450	650	3.7%
Durable Goods	14,530	15,270	740	5.1%
Primary and fabricated metal manufacturing	5,260	5,550	290	5.5%
Computer and electronic product manufacturing	3,080	3,220	140	4.5%
Nondurable Goods	3,270	3,180	-90	-2.8%
Transportation, & Utilities	31,930	37,550	5,620	17.6%
Wholesale Trade	10,050	11,460	1,410	14.0%
Retail Trade	16,350	19,380	3,030	18.5%
Food and beverage stores	3,310	3,810	500	15.1%
General merchandise stores	3,590	4,270	680	18.9%
Transp., warehousing, & utilities	5,530	6,710	1,180	21.3%
Information	1,590	1,830	240	15.1%
Leisure & Hospitality	12,400	14,510	2,110	17.0%
Arts, entertainment, recreation	1,870	2,160	290	15.5%
Accommodation & Food Services	10,530	12,350	1,820	17.3%
Accommodation	1,040	1,170	130	12.5%
Food srvc. and drinking places	9,490	11,180	1,690	17.8%
Other Services	5,240	5,980	740	14.1%
Financial Activities	9,340	10,700	1,360	14.6%
Finance and insurance	5,770	6,830	1,060	18.4%
Real estate and rental and leasing	3,570	3,870	300	8.4%
Professional & Business Services	14,550	18,330	3,780	26.0%
Professional and technical services	5,910	7,490	1,580	26.7%
Administration and support srvc.	6,690	8,970	2,280	34.1%
Education and health services	15,350	19,390	4,040	26.3%
Educational services	1,560	1,950	390	25.0%
Health Care & Social Assistance	13,790	17,440	3,650	26.5%
Other Services	5,240	5,980	740	14.1%
Government	16,260	17,490	1,230	7.6%
Federal Government	1,430	1,380	-50	-3.5%
State Government	1,440	1,530	90	6.3%
Local Government	13,390	14,580	1,190	8.9%
Total Nonfarm Payroll Emp.	134,170	156,050	21,880	16.3%

Source: Oregon Employment Department. Employment Projections by Industry 2004-2014. Projections summarized by ECONorthwest.

Factors Affecting Future Economic Development in Sandy

Appendix D

Economic development opportunities in Sandy will be affected by local conditions as well as the national and regional economic conditions that were addressed in Appendix C. Sandy shares the general characteristics and advantages of the Portland region, Oregon, and the Pacific Northwest as a whole, such as proximity to I-5 and the recreational amenities of the Oregon Coast, and Cascade Mountains. Economic conditions in Sandy relative to conditions in the Portland Region and Oregon form Sandy's comparative advantage for economic development, which has implications for the types of firms most likely to locate and expand in Sandy.

This Appendix begins with a description of comparative advantage and why it is relevant for this Economic Opportunity Analysis. The appendix then reviews local factors affecting economic development in Sandy and any advantages, opportunities, disadvantages, or constraints these factors may present. This appendix meets the intent of OAR 660-009-0015(4).

WHAT IS COMPARATIVE ADVANTAGE?

Each economic region has different combinations of productive factors: land (and natural resources), labor (including technological expertise), and capital (investments in infrastructure, technology, and public services). While all areas have these factors to some degree, the mix and condition of these factors vary. The mix and condition of productive factors may allow firms in a region to produce goods and services more cheaply, or to generate more revenue, than firms in other regions.

By affecting the cost of production and marketing, comparative advantages affect the pattern of economic development in a region relative to other regions. Goal 9 and OAR 660-009-0015(4) recognizes this by requiring plans to include an analysis of the relative supply and cost of factors of production. An analysis of comparative advantage depends on the geographic areas being compared. Economic conditions in Sandy will be largely shaped by national and regional economic conditions affecting the Portland Region and Oregon. This appendix focuses on the comparative advantages of Sandy relative to the Portland region, as well as Clackamas County.

LOCATION, SIZE, AND BUYING POWER

Sandy is a community of more than 7,200 people, located southeast of Portland, near the Mt. Hood National Forest. Sandy's location has played a role in

the City's growth and will continue to have implications for economic development in the City.

- Sandy's location provides opportunities for multiple forms of transportation. Sandy is located on Highways 26 and 211 and is less than 15 miles from Interstate-84, which connects Portland with Boise, Idaho. The City has a public transportation network connecting to the Gresham Transit Center and the light rail line, and is located about 25 miles from the Portland International Airport
- Sandy has access to workers and markets of the Portland metropolitan region. Sandy is located approximately 23 miles from Portland, and 12 miles from Gresham. Sandy's proximity to these cities gives Sandy access to the labor force, employment opportunities, and markets of these cities. It also provides workers in Sandy opportunities to live in an urban area outside of Sandy.
- Sandy's location provides access to outdoor and urban recreation and amenities. Sandy is relatively near the Mt. Hood National Forest and Mt. Hood, which provide opportunities for outdoor recreation. Residents of Sandy have easy access to urban cultural amenities and shopping opportunities in the City of Portland.

Sandy's location provides both advantages and disadvantages. Sandy has easy access to Highways 26 and 211, which provide easy automotive access between Sandy and surrounding areas. Residents of Sandy have easy access to urban and rural amenities and recreation. However, Sandy's location away from Highways I-84 and I-205 are a disadvantage for attracting businesses that need to be close to an interstate.

TRANSPORTATION

A number of transportation options are available in Sandy, including State highways, access to Interstate Highways, and public transportation connections to the Gresham Transit Center and light rail line.

Sandy has excellent automotive access. Sandy is located at the intersections of Highways 211 and 26, and less than 15 miles from Interstate 84, which links Portland to Boise, Idaho. Sandy is about 17 miles from I-205, which connects to Interstate 5 and gives access north to Washington and south to Oregon and California.

Highway 26 connects Sandy to the City of Portland in the northwest (23 miles from Sandy) and to Mt. Hood National Forest in the east, as well as further east to Madras and the Bend area in Eastern Oregon. Highway 211 connects Sandy to Woodburn and areas south of Portland along Interstate 5. Highways 26 and 211 and their connections to the Portland area link Sandy to domestic markets in the United States and international markets via west Coast ports.

Congestion on Highway 26 and overall transportation connectivity within the County is an issue that may slow future growth, according to economic development professionals interviewed for this analysis.

Other transportation opportunities in Sandy include the Sandy Area Metro transit service, the Fareless SAM, which makes stops within Sandy and continues as an express service to the Gresham Transit Center (about 10 miles from Sandy). There, passengers can transfer to Portland busses and the light rail line that connects Gresham to downtown Portland. Sandy also has access to the Portland International Airport.

LABOR FORCE

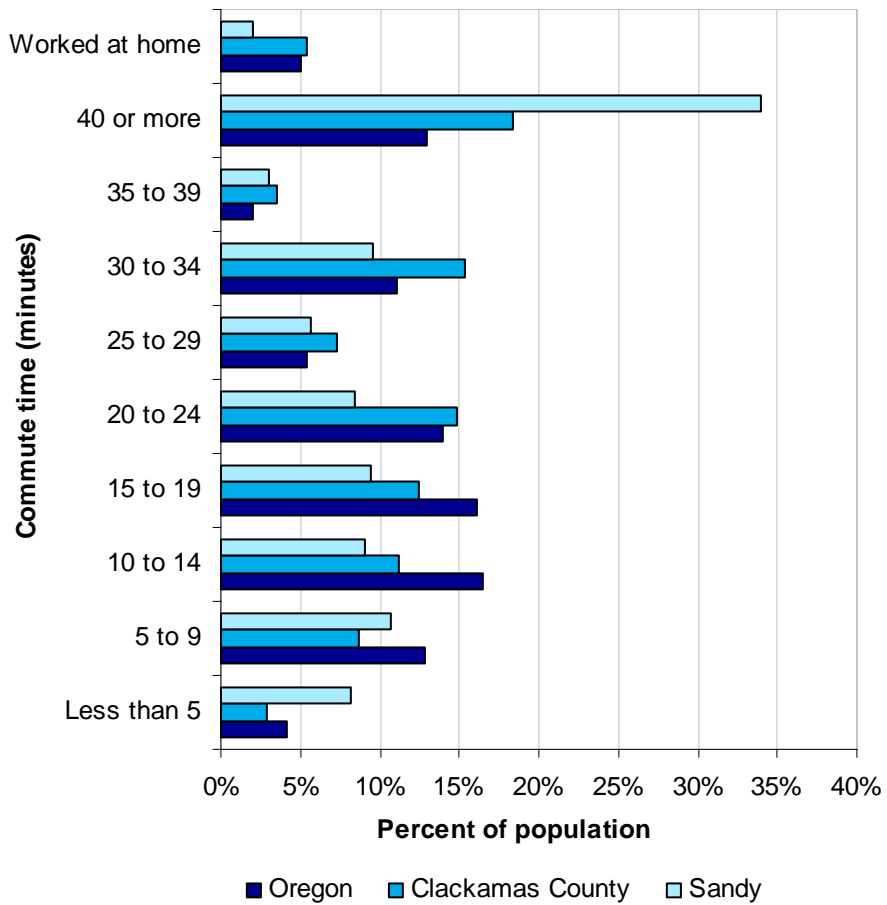
The availability of labor is critical for economic development. Availability of labor depends not only on the number of workers available, but the quality, skills, and experience of available workers. This section examines the availability of workers in Sandy.

The labor force in any market consists of the adult population (16 and over) who are working or actively seeking work. The labor force includes both the employed and the unemployed. Children, retirees, students, and people who are not actively seeking work are not considered part of the labor force.

The unemployment rate is one indicator of the relative number of workers who are actively seeking employment. Data from the Oregon Employment Department shows that unemployment in the Portland-Vancouver-Beaverton MSA was 5.1% in 2006, compared with 5.4% in Oregon. The unemployment rate in the Portland MSA through May 2007 continued to be slightly lower than in Oregon rate.

Figure D-1 shows a comparison of the commute time to work for residents 16 years and older for Oregon, Clackamas County, and Sandy. Residents of Sandy generally spent more time commuting to work than residents of Clackamas County or Oregon. Thirty-four percent of residents of Sandy spent 40 or more minutes commuting, compared with 18% of Clackamas County residents and 13% of Oregon residents. However, a larger share of Sandy residents spent less than 10 minutes commuting, 19% compared with the County average of 12% and State average of 17%.

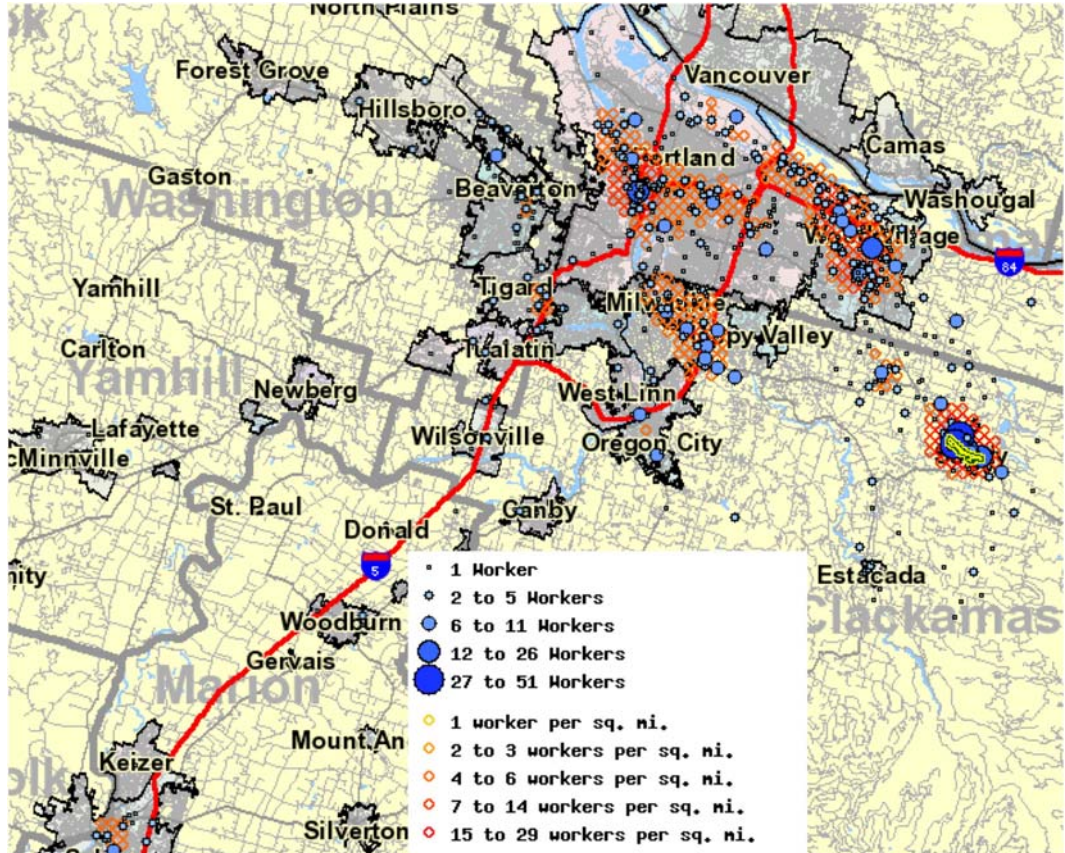
Figure D-1 Commuting time to work in minutes for residents 16 years and older, Oregon, Clackamas County and Sandy, 2000



Source: UC Census 2000.

Figure D-2 and Table D-1 show where residents of Sandy worked in 2003. Figure D-2 and Table D-1 show that about 40% of residents of Sandy were employed in Multnomah County, with 29% of Sandy residents working in Portland and 10% working in Gresham. About 40% of Sandy worked in Clackamas County. Fifteen percent of Sandy’s residents worked in Sandy.

Figure D-2 Places where residents in Sandy were employed, 2003



Source: US Census Bureau, LED Origin-Destination Data Base (2nd Quarter 2003)

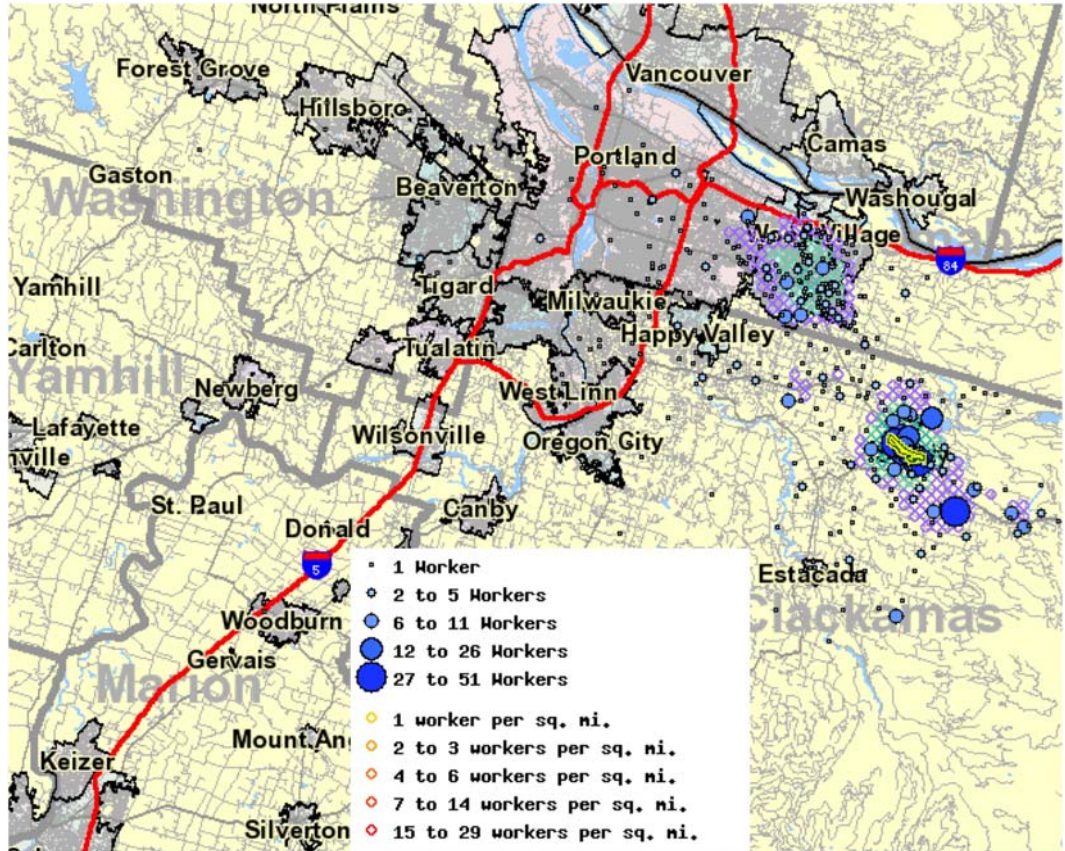
Table D-1. Places where residents of Sandy were employed, 2003

Location	Number	Percent
Multnomah Co.	444	43%
Portland	299	29%
Gresham	105	10%
Clackamas Co.	402	39%
Sandy	157	15%
Washington Co.	91	9%
Marion Co.	29	3%
All Other Locations	57	6%
Total	1,023	100%

Source: US Census Bureau, LED Origin-Destination Data Base (2nd Quarter 2003)

Figure D-3 and Table D-2 show where employees of firms located in Sandy lived in 2003. Fifty-six percent of workers in Sandy lived in Clackamas County. Eighteen percent of workers in Sandy lived in Sandy. An additional approximately 30% of workers lived in Multnomah County, 15% of whom lived in Gresham.

Figure D-3. Places where workers in Sandy lived, 2003



Source: US Census Bureau, LED Origin-Destination Database (2nd Quarter 2003)

Table D-2 Places where workers in Sandy lived, 2003

Location	Number	Percent
Clackamas Co.	460	56%
Sandy	150	18%
Multnomah Co.	251	31%
Portland	77	9%
Gresham	119	15%
All Other Locations	105	13%
Total	816	100%

Source: US Census Bureau, LED Origin-Destination Data Base (2nd Quarter 2003)

The implication of the data presented in this section is that majority of Sandy’s workforce either live in Clackamas or Multnomah County, but do not reside in the City of Sandy. Residents of Sandy are more likely to work in Portland than in Sandy. This analysis shows that businesses in Sandy have access to the labor force in parts of Multnomah County and Clackamas Counties.

HOUSING

Housing is an important factor for economic development strategy because it affects the type of residents and employers who may be attracted to a region. Housing and economic development strategies should consider the availability of affordable housing for all income levels and the impact of housing prices on workforce availability and attractiveness of the community.

Housing choices includes choices about location and the type of housing. When making location decisions, households may consider many factors: costs, views, neighborhood characteristics, quality of schools, tax rates, commute times, and other quality of life issues. Housing type is defined by many attributes, the most important of which are structure type (e.g., single-family, multi-family) and size, lot size, quality and age, and price.

According to economic development professionals interviewed for this project, the cost of housing in Sandy is competitive with other parts of the Portland Region. Housing is typically more affordable in Sandy than in areas closer to Portland, and there are a wide variety of housing types available but that multifamily housing may be in short supply in Sandy

Table D-3 shows average and median housing sales price in Sandy, Clackamas County, and selected cities on the east side of Portland for 2000 and 2006. Housing prices in Clackamas County increased by about 75% during the six-year period. The median sales price in Clackamas County increased from \$185,000 to \$325,000, an increase of \$140,000 or 76%. Lake Oswego had the highest housing cost, with a median sales price of \$525,000 in 2006.

Housing in Sandy cost less than the County average or the other cities shown in Table D-3. The median price of a single-family home in Sandy increased from \$147,500 in 2000 to \$232,725 in 2006, an increase of \$93,811 or 64% over the six-year period. The median sales price of a single-family home in Sandy in 2006 was 72% of the County average.

Table D-3. Average and median sales price for single-family dwellings, Sandy, Clackamas County, and selected cities, 2000 and 2006

	2000	2006	Change 2000 to 2006	
			Amount	Percent
Average Sales Price				
Sandy	\$146,258	\$240,069	\$93,811	64%
Gresham	\$174,780	\$271,441	\$96,661	55%
Damascus	\$222,476	\$383,307	\$160,831	72%
Happy Valley	\$225,347	\$522,671	\$297,324	132%
Lake Oswego	\$343,413	\$609,919	\$266,507	78%
Clackamas County	\$234,549	\$404,030	\$169,481	72%
Median Sales Price				
Sandy	\$147,500	\$232,725	\$85,225	58%
Gresham	\$164,500	\$247,500	\$83,000	50%
Damascus	\$212,900	\$374,900	\$162,000	76%
Happy Valley	\$216,750	\$489,900	\$273,150	126%
Lake Oswego	\$282,750	\$525,000	\$242,250	86%
Clackamas County	\$185,000	\$325,000	\$140,000	76%

Source: Metro RLIS; calculations by ECONorthwest

The comparatively low housing costs in Sandy present a comparative advantage for attracting businesses that are considering locating in the Portland Region and do not need direct access to interstate highways.

PUBLIC SERVICES

PUBLIC POLICY

Public policy support for economic development includes policies that local governments have to support economic activity, such as economic development policies and local tax policies. This section discusses broad economic development policies from Sandy's comprehensive plan and compares property tax rates between Oregon, Clackamas County and Sandy.

Sandy's Comprehensive Plan includes a number of policies designed to encourage and manage economic development, including both commercial and industrial development, including:

- Concentrating **commercial uses** to several areas: the west end of Sandy on the north side of Highway 26, which is directed to accommodate large scale commercial uses; a new commercial area east of downtown and south of Highway 26; a general commercial district on the east end of town that would focus on accommodating tourism businesses; downtown Sandy; and various village commercial districts which would serve neighborhoods with retail and office for local use.

- Encouraging commercial uses which relate to **tourism** in a potentially master-planned commercial district east of downtown on Highway 26
- Promoting **downtown** development in the scale and character of a traditional downtown business district, allowing a mix of uses downtown, promoting higher residential and commercial density in the downtown, and creating an attractive downtown with public spaces, gateways on either end, and transit and bicycle access.
- Promoting **commercial development in village areas** that will serve uses oriented to the village, including small-scale professional office, retail, and mixed-use development.
- Encouraging a diversity of small industries and businesses by protecting designated **industrial land**, working with other jurisdictions to promote economic development, promoting performance standards to reduce wastewater and water use and maintain air quality, and encourage a jobs-housing balance in Sandy.

PROPERTY TAXES

The property tax rate in a jurisdiction can affect the location decisions of households and businesses. Table D-4 shows the average property tax rates per \$1,000 assessed value for Oregon, Clackamas County, and Sandy in 2005-2006. Table D-4 shows that the property tax rate in Sandy are somewhat higher than Clackamas County's but lower than Oregon's property tax rates.

Table D-4. Property Tax Rate, per \$1,000 of assessed value, Oregon, Clackamas County and Sandy, 2005-2006

Area	Tax Rate (per \$1,000 assessed value)
Oregon	\$15.37
Clackamas County	\$10.26
Sandy	\$14.79-\$14.91

Source: Oregon Department of Revenue.

WATER

The Public Works Department of the City of Sandy provides drinking water to the residents of Sandy. According to the City, Sandy's drinking water currently comes from two sources: Brownell Springs and Alder Creek.

Brownell Springs was the City of Sandy's sole source of drinking water until 1977. A groundwater spring located on City-owned property on the north face of

Lenhart Butte, the springs produce between 360,000 and 500,000 gallons of water per day. Water from the springs is not filtered but is treated with chlorine; Brownell Springs produced about 30% of the City's total water supply in calendar year 2005.

Alder Creek, a tributary of the Sandy River, has been the main source for the municipal water supply since 1976, and was selected because government and industrial forestlands surround it, rather than residential development. The total capacity of the treatment plant, and the piping and pumping stations was expanded in 2001 to 2.6 million gallons per day, which is the maximum amount of water granted to the City under its water rights for Alder Creek. Inflow and infiltration is a short-term problem after periods of heavy rain or snowfall.

The City of Sandy has sufficient access to water and water treatment to meet current demands. The future availability of water will be influenced by the location and type of growth that occurs in Sandy, but the City is already planning to develop a new supply of water on the Salmon River to accommodate future growth. The City holds a permit to withdraw up to 25 cubic feet per second (16 million gallons of water per day) from the Salmon River near the Mt. Hood National Forest Boundary, an amount which was limited to 16.3 cubic feet per second (10.5 million gallons per day) under the Marmot Dam Decommissioning Project agreement. This additional source of drinking water is expected to meet current and future demands from the City of Sandy until about 2050.

WASTEWATER

The City of Sandy provides wastewater treatment to residents of Sandy. The City also provides wastewater treatment service to residents outside of the City limits whose septic systems fail.

The Jarl Road treatment plant began service in 1998, and has a capacity of 1.25 million gallons per day during dry weather and up to 4 million gallons per day during wet weather. The system involves an activated sludge process, effluent filtration, and ultraviolet light disinfection. Treated effluent is released into Tickle Creek, a tributary of the Clackamas River, and bio-solids are recycled on local pasturelands. The wastewater treatment plant also has a partnership with local Iseli Nursery to use treated wastewater for irrigation. The City expects to have capacity to provide wastewater treatment service for the projected growth for the next 10 to 15 years.

STORMWATER

The City of Sandy's 2001 stormwater management plan identifies infiltration opportunities and constraints inside the Urban Reserve Area. The City requires new development to treat and detain stormwater from the 2, 5, 10, and 25 year storm events (from 3.5 to 5.5 inches of rainfall) to pre-development conditions, and also promotes incentives for existing property owners to reduce or mitigate

for impervious surface coverage on commercial, industrial, or multifamily residential properties.

APPENDIX E: GLOSSARY⁵⁷

Actual Housing Mix and Actual Net Density—The housing mix and density that has actually been developed in the community in the last five years or since the last periodic review, whichever is greater.

Adequate Land Supply (Long-Term)—Commercial and industrial designated land within an urban growth boundary (UGB) that adequately accommodates employment needs up to 20 years as documented in the local Economic Opportunity Analysis. This entails a range of commercial and industrial-designated sites of various sizes and locations. Land deemed “adequate” also is considered “suitable”, but not necessarily “available.” (See definitions for those terms).

Adequate Land Supply (Short-Term)—Commercial and industrial-designated land within an urban growth boundary that adequately accommodates the short-term (1 to 5 years) employment needs documented in the local Economic Opportunity Analysis. This entails a range of commercial and industrial-designated sites in various sizes and locations. Land deemed as “adequate” also is considered “suitable” and “available”, and should not be constrained by environmental, infrastructure nor ownership issues.

Attached Single Family Housing—means common-wall dwellings or rowhouses where each dwelling unit occupies a separate lot.

Available Land—Designated land for commercial or industrial uses that is suitable and offered for sale or lease by the property owner, or is available for future on-site expansion by existing tenants.

Buildable Land, Residential—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.

Buildable Lands—Lands in urban and urbanizable areas that are suitable, available and necessary for development. Include both vacant and developed land likely to be redeveloped.

⁵⁷ The definitions used in this Glossary are adapted from the DLCDC “Employment and Other Lands Analysis Guidebook,” and the definitions from OAR 660-008-0005.

Constrained Land—Vacant or partially vacant parcels with significant physical, environmental or infrastructure limits to development. Physical constraints include steep topography (sloped over 10% for industrial use and over 20% for commercial use), unstable soils and parcel configuration. Environmental constraints include on-site wetlands, floodplains or significant riparian areas. Infrastructure constraints include inadequate public facilities (e.g., roads and utilities).

Demand—The desire for commercial, institutional and industrial lands.

Detached Single Family Housing—means a housing unit that is free standing and separate from other housing units.

Developed Land, Employment—Parcels with relatively high-value improvements that are not vacant.

Development Constraints—Factors that limit or prevent the use of land for economic development. Development constraints include, but are not limited to, wetlands, environmentally sensitive areas such as habitat, environmental contamination, slope, topography, cultural and archeological resources, infrastructure deficiencies, parcel fragmentation or areas subject to natural hazards.

Employees per Acre—A measure of employment density.

Employment Land—Designated to accommodate a broad range of commercial and industrial uses.

Floodplain—Area adjoining a stream that is subject to inundation by flood. Consists of: (a) Floodway fringe: the area outside the floodway; and (b) Floodway: channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than 2.5 inches.

Gross Vacant Acre—An acre of vacant land before it has been allotted for public right-of-way, private streets or public utility easements. A standard assumption is that between 20% and 30% of land in a subdivision is used for streets and utilities; thus, a gross vacant acre will yield only about 35,000 sq. ft. (70%-80% of a full acre) for lots.

Housing Needs Projection—refers to a local determination, justified in the plan, of the mix of housing types and densities that will be: (a) Commensurate with the financial capabilities of present and future area residents of all income levels during the planning period; (b) Consistent with any adopted regional housing standards, state statutes and Land Conservation and Development Commission administrative rules; and (c) Consistent with Goal 14 requirements.

Land Need—Supply of lands needed to accommodate future employment demand.

Locational Factors—Include but are not limited to: proximity to raw materials, supplies, labor and services, markets or educational institutions; access to transportation facilities; and workforce (e.g., skill level, education, age distribution).

Multiple Family Housing—means attached housing where each dwelling unit is not located on a separate lot.

Needed Housing Mix—The percentage of each housing type estimated to be needed over the next 20-years, based on the housing needs analysis.

Needed Net Density—The net density estimated to be needed over the next 20 years, based on the housing needs analysis.

Net Vacant Acre—Vacant land after allotments for public right-of-way, private streets or utility easements. For example, a one-acre site that has 30% of land devoted to streets and utilities yields 0.7 acres for net development.

Net Vacant Land—Greater than one acre where the improvement value is less than land value.

Partially Vacant Land—Parcels with some development; vacant portions large enough to develop.

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.

Redevelopable Land—Occupied or partially occupied land that may or may not contain a low value of improvements relative to the value of the land.

Redevelopment Potential—Parcels with developed structures that are likely to be demolished; may include brownfield sites.

Safe Harbor—A standard procedure that complies with state or local law.

Significant Wetlands—Protected under federal law. Significant wetlands are not part of the buildable land inventory.

Slope—For industrial land, should not exceed 10-15%; commercial land usually can be developed on slopes up to 20%.

Suitable—Land designated for industrial or other employment use that provides, or can be expected to provide, the appropriate characteristics for the proposed use or category of use.

Supply of Land—Existing developed, redevelopable and vacant commercial, institutional and industrial lands.

Total Land Supply, Employment—Supply for a 20-year planning period. Total land supply includes the short-term supply of vacant and redevelopable land for the industrial or other employment uses identified in the comprehensive plan.

Urban Growth Boundary (UGB)—In Oregon, the designated area in which urban, as distinguished from rural, commercial, industrial, residential and other uses may occur.

Vacant Land, Employment—Land greater than one acre not currently containing permanent buildings or improvements.