Ordinance Exhbit A

CITY OF FOREST GROVE, OREGON
ECONOMIC OPPORTUNITIES ANALYSIS

Prepared For:

CITY OF FOREST GROVE, OREGON

April 2025

CITY COUNCIL
PUBLIC HEARING DRAFT

ACKNOWLEDGMENTS

Johnson Economics prepared this report for the City of Forest Grove. Johnson Economics and the City of Forest Grove thank the many people who helped to develop this document.

This report was prepared in accordance with the requirements of OAR 660 Division 9: Economic Development.

City of Forest Grove
1924 Council Street
P.O. Box 326
Forest Grove, OR. 97116

Johnson Economics
621 SW Alder Street
Suite 605
Portland, OR 97205

TABLE OF CONTENTS

I. INTRODUCTION

This report introduces analytical research presenting an Economic Opportunities Analysis (EOA) for the City of Forest Grove, Oregon.

Cities are required to reconcile estimates of future employment land demand with existing inventories of vacant and redevelopable employment land within their Urban Growth Boundary (UGB). The principal purpose of the analysis is to assess the degree to which the city has an adequate land supply and capacity to accommodate anticipated employment growth.

To this end, this report is organized into six primary sections:

- Economic Trends: Provides an overview of national, state, and local economic trends affecting Washington County and the City of Forest Grove, including population projections, employment growth and a demographic profile.
- Economic Development Potential: A discussion of the comparative advantages of the local community and work force.
- Target Industries: Analysis of key industry typologies the City of Forest Grove should consider targeting as economic opportunities over the planning period.
- Employment Land Needs: Examines projected demand for industrial and commercial land based on anticipated employment growth rates by sector.
- Capacity: Summarizes the City's inventory of vacant and redevelopable industrial and commercial land (employment land) within City of Forest Grove's UGB.
- Reconciliation: Compares short- and long-term demand for employment land to the existing land inventory to determine the adequacy and appropriateness of capacity over a five and twenty-year horizon.
- Conclusions and Recommendations: Summary of findings and policy implications.

II. FOREST GROVE ECONOMIC TRENDS

This section summarizes employment, demographic, and workforce trends at the local level that will influence economic conditions in the City of Forest Grove over the 20-year planning period. This section provides the economic context for growth projections and includes a socioeconomic profile of the community.

A. FOREST GROVE EMPLOYMENT AND FIRMS

As of 2022, the City of Forest Grove is home to 667 businesses with roughly 7,623 employees. The largest industries by employment are educational services, health care and social services, and accommodation & food services, followed by metals manufacturing, food manufacturing, and construction. Forest Grove has the lowest employment representation in the management of companies and enterprises and utilities sectors. (Industry sectors are discussed in more detail in Section IV of this report.)

FIGURE 2.1: ESTIMATED EMPLOYMENT BY INDUSTRY SECTOR, CITY OF FOREST GROVE 2022

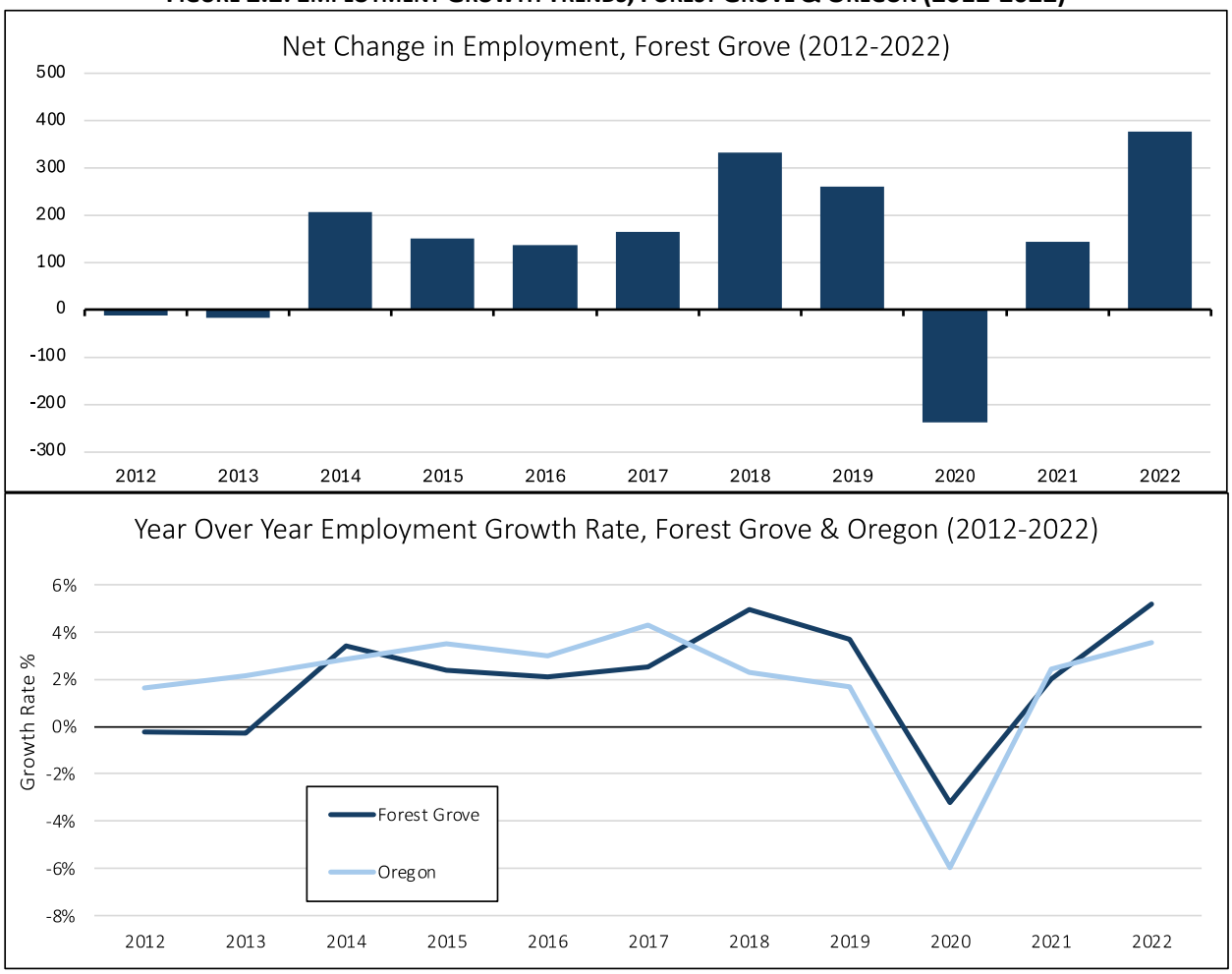
Industry Sectors	Estimated Employment 2022	Share of Employment
Agriculture, forestry, fishing, and hunting	81	
Construction	431	
Food Manufacturing	571	
Wood Manufacturing	291	
Metals Manufacturing	775	
Utilities	32	
Wholesale trade	110	
Retail trade	378	
Retail trade - Grocery	161	
Transportation	42	
Delivery and warehousing	36	
Information	36	
Finance and Insurance	114	
Real Estate and Rental	65	
Professional, Scientific, and Technical Services	147	
Management of Companies and Enterprises	11	
Administrative and Waste Management	234	
Educational services	1,668	
Health care and social assistance	1,119	
Arts, Entertainment, and Recreation	79	
Accommodation and Food Services	935	
Other services	189	
Government	118	
Total	**7,623**	0% 5% 10% 15% 20% 25%

SOURCE: Oregon Employment Department, 2022 QCEW data, Johnson Economics

Forest Grove's rate of employment growth surpassed the state in 2018 and has remained higher every year except for 2021. From 2014 through 2019, Forest Grove experienced a steady rate of employment growth in the 2% to 5% range. While Forest Grove did lose roughly 237 workers in 2020, the employment base displayed resilience during the

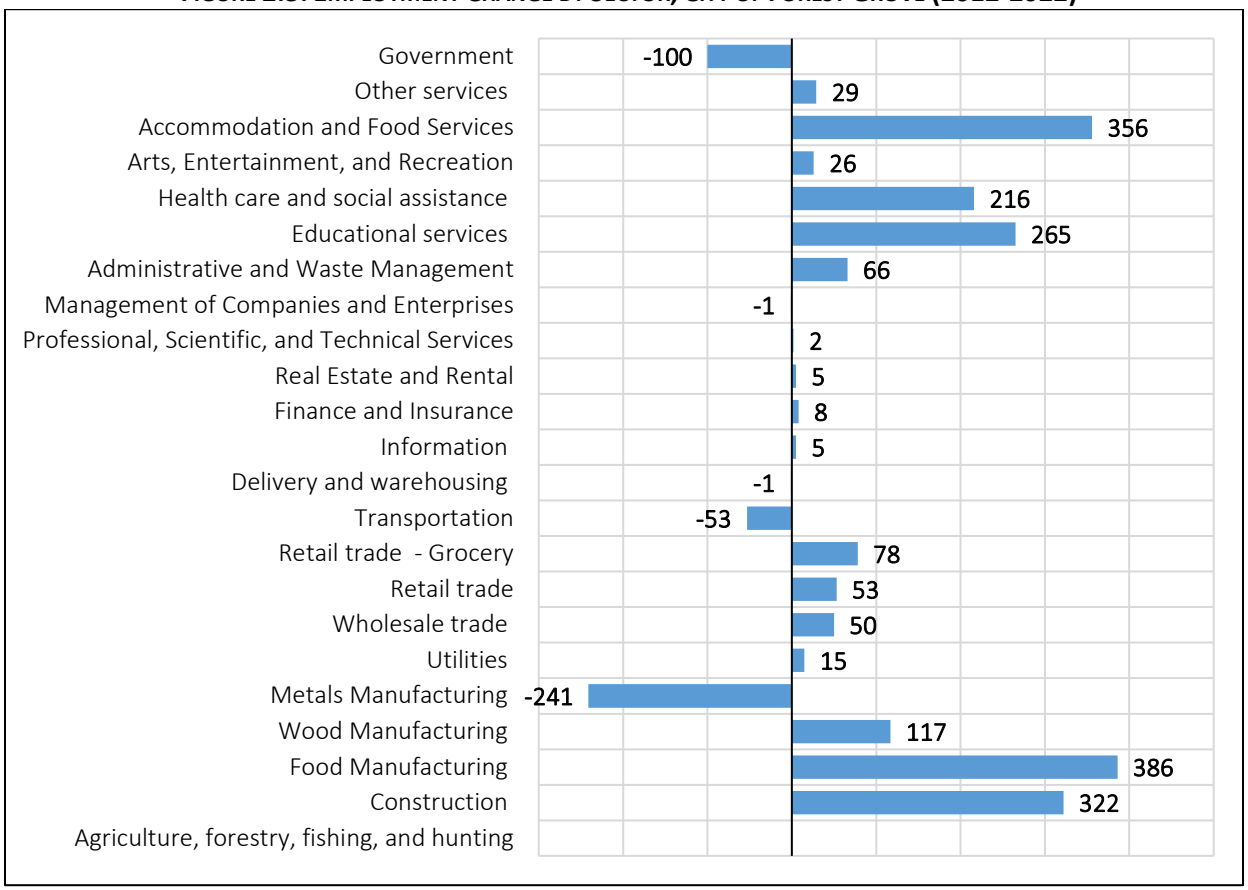
COVID-19 downturn, losing less workers proportionally as compared to the state and experiencing a stronger recovery from 2021 to 2022. In 2022, the city reached a growth rate of 5.2% and added an estimated 376 jobs.

FIGURE 2.2: EMPLOYMENT GROWTH TRENDS, FOREST GROVE & OREGON (2012-2022)



SOURCE: Oregon Employment Department, JOHNSON ECONOMICS

FIGURE 2.3: EMPLOYMENT CHANGE BY SECTOR, CITY OF FOREST GROVE (2012-2022)

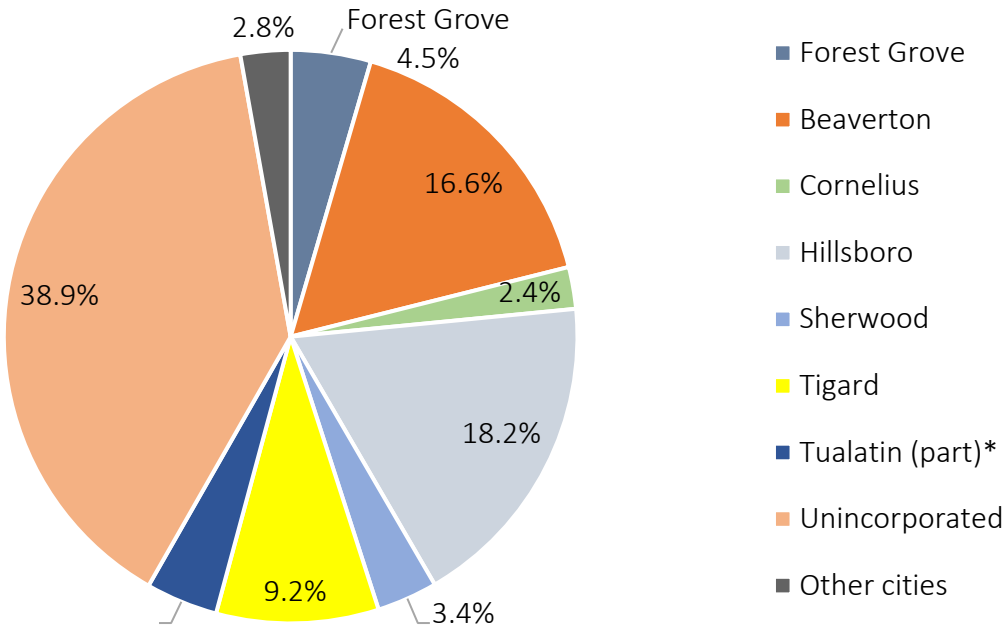


SOURCE: Oregon Employment Department, JOHNSON ECONOMICS

B. LOCAL POPULATION AND WORKFORCE TRENDS

Population: Forest Grove is the fifth largest population group in Washington County, with roughly 4.5% of Washington County's total population. The only groups with a larger share of Washington County's population are Beaverton, Hillsboro, Tigard, and "unincorporated" areas.

FIGURE 2.4: SHARE OF TOTAL POPULATION IN WASHINGTON COUNTY (2023)

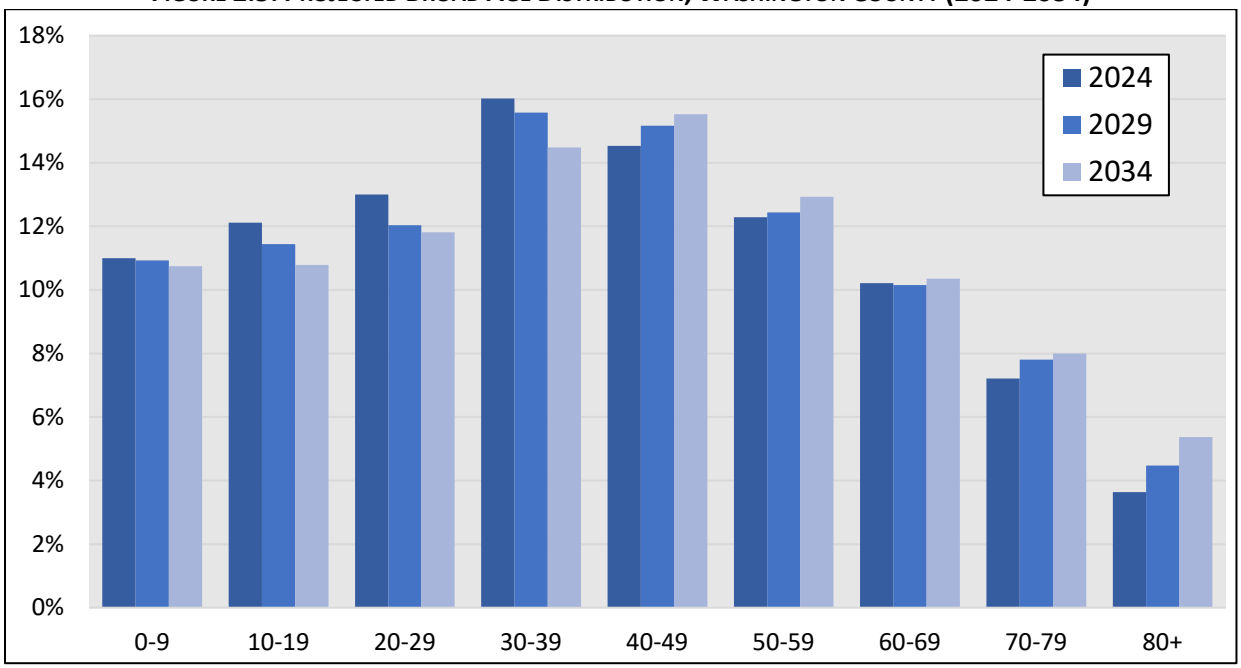


SOURCE: Population Research Center, Portland State University

The City of Forest Grove has grown at an estimated average annual rate of 2.1% per year since 2010, outpacing the county and state's growth rate by a substantial margin. The city saw large growth in 2013 and then dropped below the state and county level in 2017. The rate of population growth jumped back up to over 4% in 2019 and 2020, before seeing a slight decrease in 2021. Since then, the rate of population growth has remained above the state or county.

Washington County has a sizable proportion of all ages 59 and below, particularly in the 30 to 39 age group. Washington County has far fewer people than 60 years old and up when compared to the state. These numbers show that the county has a disproportionately large work force and far less retirees. This is likely in large part due to the presence of Nike and the emergence and concentration of tech employers in Washington County, both of which draw their labor force from a younger age demographic.

FIGURE 2.5: PROJECTED BROAD AGE DISTRIBUTION, WASHINGTON COUNTY (2024-2034)

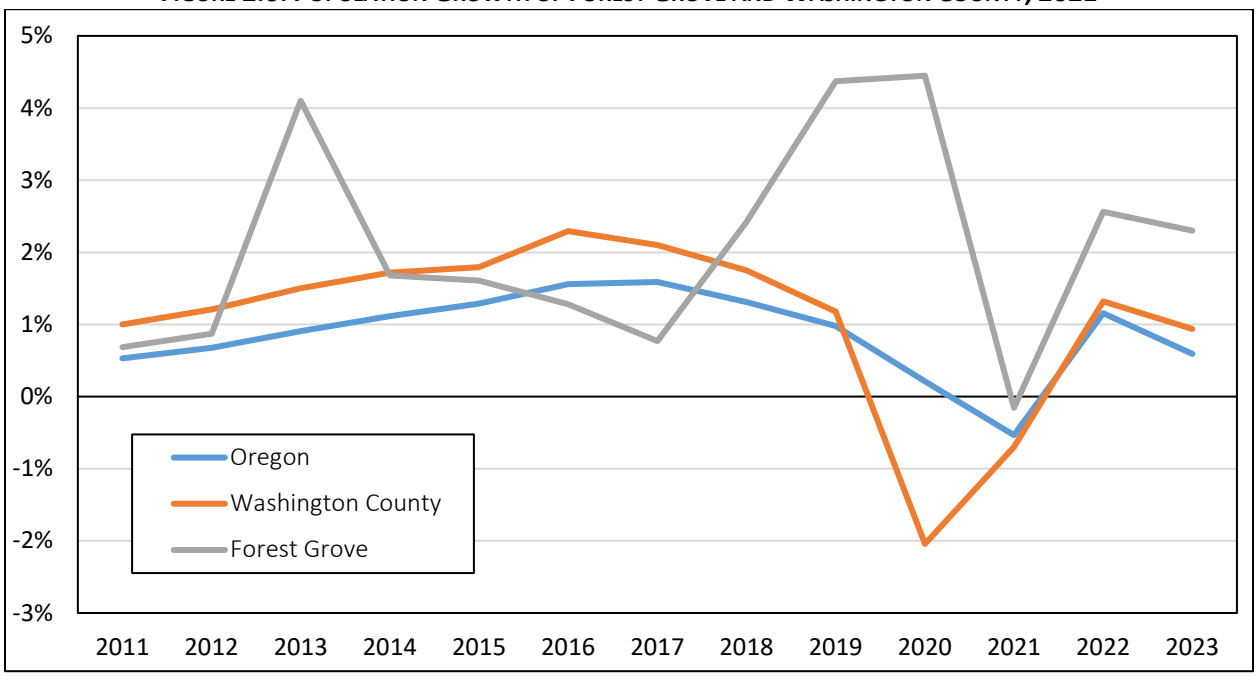


SOURCE: Population Research Center, Portland State University

The Portland State University Population Research Center projects growth in every age group above 40, with the largest growth in the 80+ age group. Each age group under 40 is projected to shrink, with the biggest decrease in the 30 to 39-year-old group. These numbers reflect the general aging of the population in Washington County. This will further the need for nearby healthcare.

Population Growth Rate: The rate of population growth for Forest Grove has consistently been higher than Washington County or the state of Oregon every year since 2018. In 2019 and 2020, the Forest Grove growth rate passed 4%, while Washington County's growth rate dropped to -2% in 2020. These numbers show that Forest Grove's rate of population growth has remained above the county or state level since the beginning of the pandemic, likely in part due to the emergence of work from home and the ongoing construction of residential units in the city. Forest Grove experienced a small dip of negative growth in 2021, before jumping back to 2.5% in 2022. Forest Grove also saw a jump in population in 2019.

FIGURE 2.6: POPULATION GROWTH OF FOREST GROVE AND WASHINGTON COUNTY, 2021

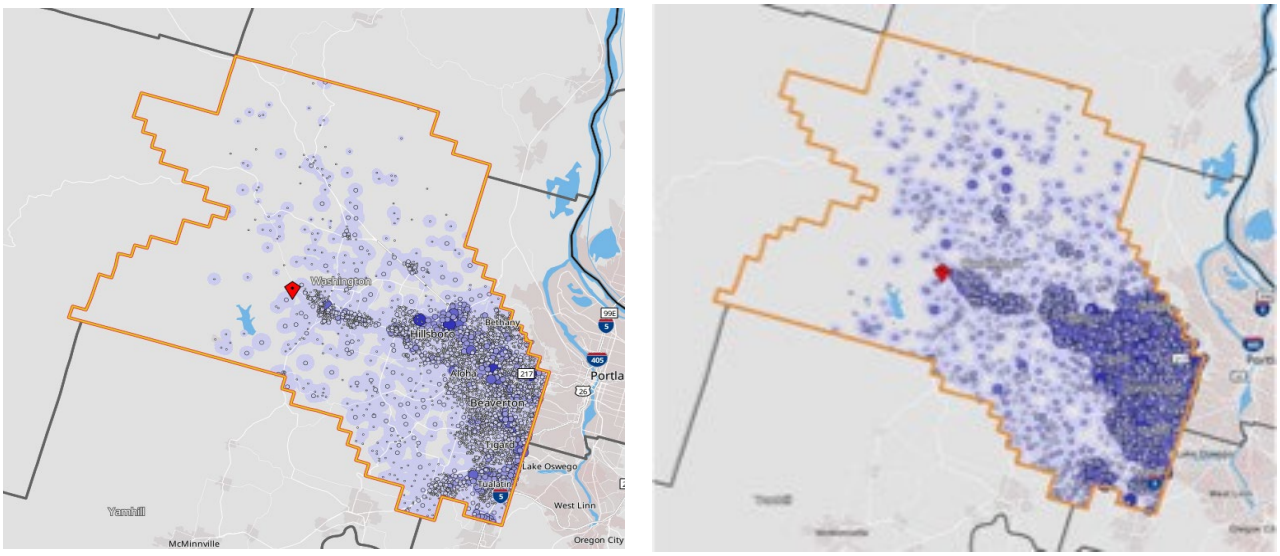


SOURCE: Population Research Center, Portland State University

Employment and Population Concentrations: The distribution of employment in Washington County is concentrated around the southeastern quadrant of the county, with the distribution of employment greatly dissipating west of Forest Grove (outside of the metro area's Urban Growth Boundary). The distribution of population is somewhat more evenly distributed across the northern side of the county although it is still mostly concentrated around in the southeastern quadrant.

FIGURE 2.7: DISTRIBUTION OF EMPLOYMENT AND WORKFORCE, WASHINGTON COUNTY, 2021

DISTRIBUTION OF EMPLOYMENT **DISTRIBUTION OF POPULATION**



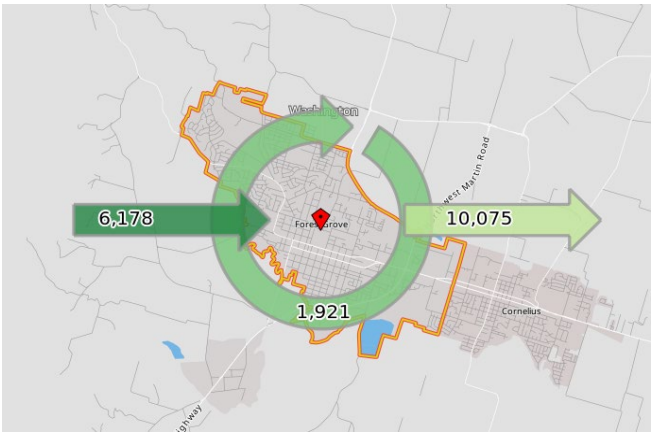
SOURCE: Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) Data

Commuting Trends: In 2021 (the most recent data available), the City of Forest Grove was estimated to have 6,178 people commuting in for work, 10,075 people commuting out and 1,921 residents both lived and worked in the city. These figures reflect "covered employment" as of 2021, the most recent year available. Covered employment refers to those jobs where the employee is covered by federal unemployment insurance. This category does not include many contract employees and the self-employed and therefore is not a complete picture of local employment. The figure discussed here is best understood as indicators of the general pattern of commuting and not exact figures.

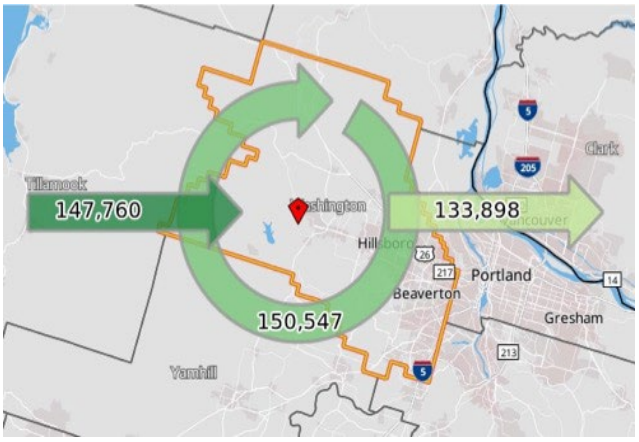
Of those residents who work outside of the city, the most common commute destinations are Hillsboro, Cornelius, Portland, and Beaverton. For local employees who commute in from outside of Forest Grove, most live in Hillsboro, Portland, and Beaverton.

FIGURE 2.8: NET INFLOW-OUTFLOW OF EMPLOYEES, FOREST GROVE AND WASHINGTON COUNTY, 2021

FOREST GROVE COMMUTING TRENDS



WASHINGTON COUNTY COMMUTING TRENDS

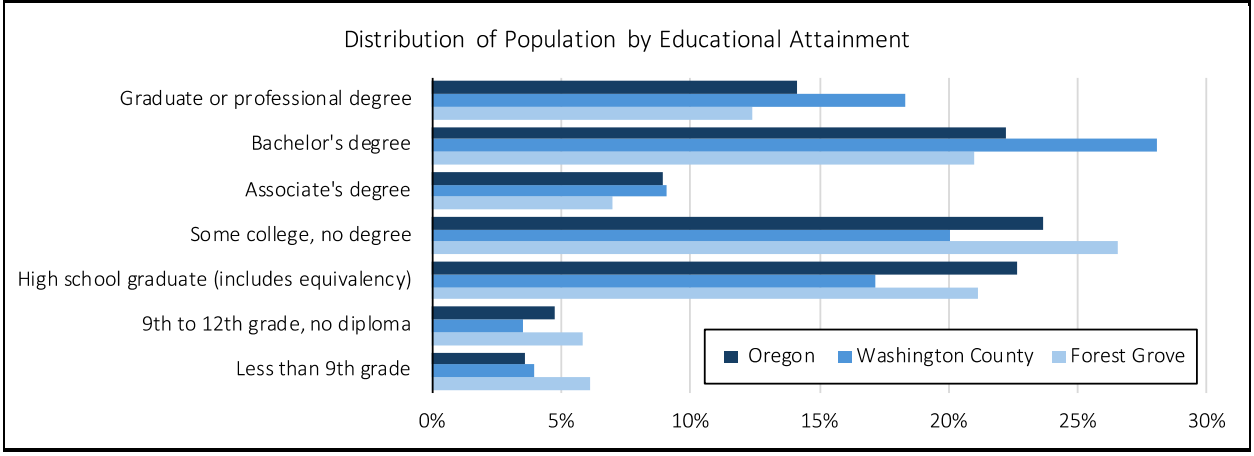


SOURCE: Census Bureau, LEHD Data

Workforce Characteristics: Forest Grove has a smaller share of adults with higher education than the county or state. In contrast, Washington County has a much higher concentration of adults with higher education when compared with the state. The recent residential expansion in the city includes a significant concentration of higher-end homes, which is expected to increase the educational attainment profile in the city over the next decade.

FIGURE 2.9: EDUCATIONAL ATTAINMENT PROFILE, 2022

25 years or older	Forest Grove (2022)		Washington Co. (2022)		Oregon (2022)	
	Count	%	Count	%	Count	%
Less than 9th grade	1,011	6.1%	16,609	3.9%	109,141	3.6%
9th to 12th grade, no diploma	958	5.8%	14,864	3.5%	145,455	4.8%
High school graduate (includes equivalency)	3,485	21.1%	72,616	17.1%	690,248	22.7%
Some college, no degree	4,377	26.6%	84,854	20.0%	721,161	23.7%
Associate's degree	1,150	7.0%	38,619	9.1%	271,686	8.9%
Bachelor's degree	3,459	21.0%	118,932	28.0%	675,825	22.2%
Graduate or professional degree	2,043	12.4%	77,521	18.3%	430,414	14.1%
Total	16,483	100%	424,015	100%	3,043,930	100%



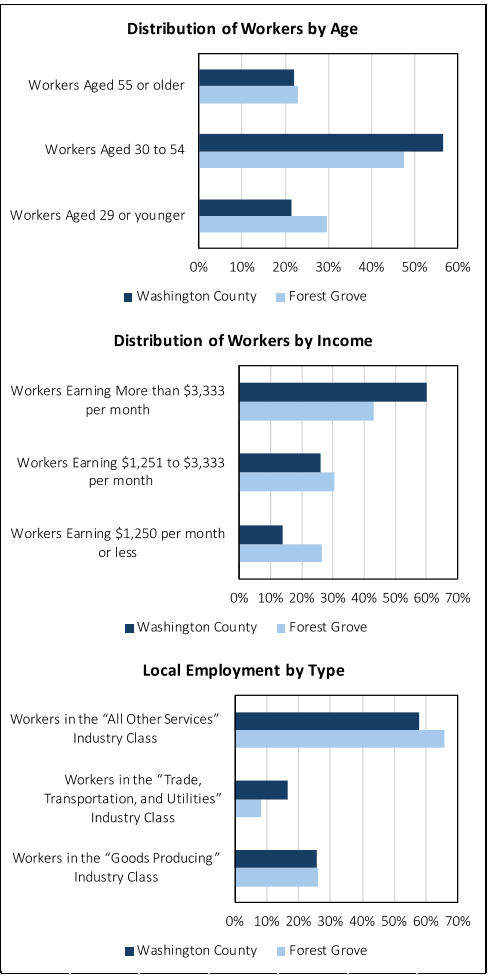
SOURCE: U.S. Census Bureau

- 21% of the local population have a bachelor's degree, as compared to 28% countywide and 22% statewide.
- An additional 12% hold a graduate or professional degree, compared to 18% countywide and 14% statewide. This means nearly a third of the local workforce in Forest Grove has a bachelor's degree or higher.
- Around a third (33%) of Forest Grove's population has a high school degree or less.

The education level in Forest Grove points to a greater presence of blue-collar workforce when compared to the county and state.

FIGURE 2.10: CHARACTERISTICS OF LOCAL WORKFORCE, CITY OF FOREST GROVE AND WASHINGTON COUNTY, 2021

	Forest Grove 2021		Washington County 2021	
	Count	Share	Count	Share
Selection Area Labor Market Size (All Private Jobs)				
Employed in the Selection Area	7,125	100%	298,307	100%
Living in the Selection Area	10,631	149.2%	284,445	95.4%
Net Job Inflow (+) or Outflow (-)	-3,506	-	13,862	-
In-Area Labor Force Efficiency (All Private Jobs)				
Employed in the Selection Area	10,631	100%	284,445	100%
Employed and Living in the Selection Area	1,620	15.2%	150,547	52.9%
Employed in the Selection Area but Living Outside	9,011	84.8%	133,898	47.1%
In-Area Employment Efficiency (All Private Jobs)				
Employed in the Selection Area	7,125	100%	298,307	100%
Employed and Living in the Selection Area	1,620	22.7%	150,547	50.5%
Employed in the Selection Area but Living Outside	5,505	77.3%	147,760	49.5%
Outflow Job Characteristics (All Private Jobs)				
External Jobs Filled by Residents	9,011	100%	133,898	100%
Workers Aged 29 or younger	2,101	23.3%	28,635	21.4%
Workers Aged 30 to 54	4,876	54.1%	75,666	56.5%
Workers Aged 55 or older	2,034	22.6%	29,597	22.1%
Workers Earning $1,250 per month or less	1,352	15.0%	17,965	13.4%
Workers Earning $1,251 to $3,333 per month	2,837	31.5%	32,361	24.2%
Workers Earning More than $3,333 per month	4,822	53.5%	83,572	62.4%
Workers in the "Goods Producing" Industry Class	2,506	27.8%	17,899	13.4%
Workers in the "Trade, Transportation, and Utilities" Industry Class	1,867	20.7%	27,571	20.6%
Workers in the "All Other Services" Industry Class	4,638	51.5%	88,428	66.0%
Inflow Job Characteristics (All Private Jobs)				
Internal Jobs Filled by Outside Workers	5,505	100%	147,760	100%
Workers Aged 29 or younger	1,635	29.7%	32,248	21.8%
Workers Aged 30 to 54	2,612	47.4%	83,423	56.5%
Workers Aged 55 or older	1,258	22.9%	32,089	21.7%
Workers Earning $1,250 per month or less	1,453	26.4%	20,503	13.9%
Workers Earning $1,251 to $3,333 per month	1,683	30.6%	38,582	26.1%
Workers Earning More than $3,333 per month	2,369	43.0%	88,675	60.0%
Workers in the "Goods Producing" Industry Class	1,426	25.9%	29,238	19.8%
Workers in the "Trade, Transportation, and Utilities" Industry Class	608	11.0%	33,658	22.8%
Workers in the "All Other Services" Industry Class	3,471	63.1%	84,864	57.4%
Interior Flow Job Characteristics (All Private Jobs)				
Internal Jobs Filled by Residents	1,620	100%	150,547	100%
Workers Aged 29 or younger	481	29.7%	30,285	20.1%
Workers Aged 30 to 54	743	45.9%	87,500	58.1%
Workers Aged 55 or older	396	24.4%	32,762	21.8%
Workers Earning $1,250 per month or less	448	27.7%	18,844	12.5%
Workers Earning $1,251 to $3,333 per month	592	36.5%	39,077	26.0%
Workers Earning More than $3,333 per month	580	35.8%	92,626	61.5%
Workers in the "Goods Producing" Industry Class	420	25.9%	38,621	25.7%
Workers in the "Trade, Transportation, and Utilities" Industry Class	134	8.3%	24,821	16.5%
Workers in the "All Other Services" Industry Class	1,066	65.8%	87,105	57.9%



SOURCE: Census Bureau, LEHD Data

- Only 15% of the population of Forest Grove both live and work in the area. Of those, just under 30% are aged 29 or younger. This is significantly higher than the concentration of that age group in Washington County, which comes in at roughly 20%. 66% work in the "All Other Services" industry class[1], compared to 58% countywide. These jobs typically have lower rates of compensation. 28% of workers earn $1,250 or less, compared to 13% in Washington County. 36% of these workers earn over $3,333, while 62% of workers countywide earn over $3,333.
- 54% of residents who live in Forest Grove but commute outside the city for work are between 30 and 54 years old. Among the outflow jobs, the distribution of age is similar to the numbers of the rest of the county. 28% of these jobs are in the "Goods Producing" industry, which is over twice the amount of the same group county wide.
- Forest Grove has a larger proportion of younger workers than the county, with a larger concentration of its workers less than 30 years of age when compared to countywide. However, the county has a larger proportion of workers 30 to 54 years of age.

[1] The "Other Services" category in the LEHD data set represents all employment outside of manufacturing and trade, transportation, and utilities.

III. COMMUNITY ECONOMIC DEVELOPMENT POTENTIAL

The economic climate of a community helps foster growth of existing firms and industry clusters and make the area attractive for new businesses. The City of Forest Grove has several advantages that boost its potential as a location for current and future business.

Location: Forest Grove enjoys proximity to the remainder of the Portland Metro area, as well as the significant technology cluster concentrated in Hillsboro. The location puts the city's businesses near a large, addressable market area and region. At the same time, the city is somewhat separated from the remainder of the metro area, which has allowed it to maintain a small-town identity and establish a durable base of manufacturing industries based in the surrounding area.

Transportation Connectivity: Forest Grove has transportation access via the Tualatin Valley Highway, with the Sunset Highway roughly nine miles away. The area is conveniently located for commuting to the Sunset Corridor, and the expansion of remote-working opportunities has strengthened the area's residential appeal.

Labor Market: The availability of ample and skilled labor is a key factor in economic development potential. Beyond the talent pool of Forest Grove's residents, the city's central location and freeway access give local businesses the ability to draw on a large labor pool from the region. An estimated 76% of the local workforce commutes to Forest Grove, with many coming from the Hillsboro Metro region. While ideally these workers may eventually choose to relocate to the community, in the meantime businesses know they can attract workers with a full range of skills and experience from a broader area if necessary.

The Washington County Chamber of Commerce identified workforce shortage as a major issue in both the county and the state. They recommend providing a tax credit or incentive for qualified work training organizations, as well as promoting specified education programs to help high school and college graduates to be able to find work.

With the potential growth in the manufacturing industries and data centers, Forest Grove will need to continue to find and develop skilled labor with experience in these fields. The continued population growth in Forest Grove and some of the surrounding areas will help this effort. Local businesses coupled with Pacific University and Portland Community College will also assist in developing the specific skills and education they will need from their workforce. Hillsboro and Washington County have partnered with Intel to create a 10-day course designed to train people for semi-conductor fabrication at Portland Community College. As much of the potential employment growth in Forest Grove may be in the manufacturing of products used as inputs for chip manufacturing and data centers, chip manufacturing companies such as Intel would have an incentive to work to develop a nearby complementing industry.

Quality of Life: Forest Grove offers a high quality of life and urban amenities to attract new workers and businesses to the city. The city offers a mixture of small-town lifestyles with access to nature, while also being a quick trip away from larger metro areas with additional urban amenities. The community features relatively affordable housing in comparison to other parts of the region, good schools, parks, and ample shopping and local services. This provides an attractive alternative for people working in Hillsboro.

Forest Grove's location in the northwest Willamette Valley offers ready access to a full range of mountain recreation to the east, Oregon's wine country to the south, and the Tualatin River to the east.

Economic Development Partnerships: Forest Grove has several partners in economic development, including the Forest Grove Economic Development Commission, Forest Grove/Cornelius Chamber of Commerce, Westside Economic Alliance, Columbia Pacific Economic Development District (Col-Pac), the Oregon Main Street Program, and Business Oregon.

Local and regional employers are also key partners in promoting and growing their industries. Forest Grove works with these and other regional partners to provide the infrastructure and services needed to retain and attract businesses to the city.

Economic Development Tools: Forest Grove features an Enterprise Zone and Opportunity Zones which allow for tax abatements to incentivize new business development across the city. The Forest Grove Economic Development program also offers grants through the Urban Renewal Agency and the City's lodging tax revenue. These grants are distributed based on building improvement, storefront improvement, community enhancement, tourism, and community impact. The Forest Grove Economic Development program can assist with site searches, tax incentives, financing, regulatory assistance, market information, and workforce development.

IV. INDUSTRY DIFFERENTIATION ANALYSIS

This element of the Economic Opportunities Analysis utilizes analytical tools to assess the economic landscape in Washington County and the City of Forest Grove. The objective of this process is to identify a range of industry types that can be considered targeted economic opportunities over the planning period.

A range of analytical tools to assess the local and regional economic landscape are used to determine the industry typologies the county and individual cities should consider targeting over the planning period. Where possible, we look to identify the sectors that are likely to drive growth in current and subsequent cycles.

ECONOMIC SPECIALIZATION (WASHINGTON COUNTY)

The most common analytical tool to evaluate economic specialization is location quotient analysis. This metric compares the concentration of employment in an industry at the local level to a larger geography. All industry categories are assumed to have a quotient of 1.0 on the national level, and a locality's quotient indicates if the local share of employment in each industry is greater or less than the share seen nationwide. For instance, a quotient of 2.0 indicates that locally, that industry represents twice the share of total employment as seen nationwide. A quotient of 0.5 indicates that the local industry has half the expected employment.

A location quotient analysis was completed for Washington County, which evaluated the distribution of local employment relative to national averages, as well as average annual wage levels by industry (Figure 4.01). The industries that are well-represented countywide are good candidates for growth in localities such as Forest Grove as the city can tap into some of the regional advantages to grow locally.

FIGURE 4.01: INDUSTRY SECTOR SPECIALIZATION BY MAJOR INDUSTRY, WASHINGTON COUNTY, 2022

Industry	Annual Establishments	Average Employees	Total Annual Wages	Average Annual Wages	Employment LQ
Natural resources and mining	238	3,220	$ 136,821,489	$ 42,491	0.79
Construction	1,992	18,517	$ 1,550,865,903	$ 83,754	1.07
Manufacturing	903	53,861	$ 6,985,542,567	$ 129,696	1.88
Wholesale trade	1,494	13,977	$ 1,635,286,001	$ 116,998	1.04
Retail trade	1,560	32,772	$ 1,473,084,138	$ 44,949	0.94
Transportation, warehousing & utilities	364	7,480	$ 411,520,884	$ 55,016	0.48
Information	830	7,632	$ 1,021,695,215	$ 133,870	1.11
Financial activities	2,033	14,305	$ 1,251,771,827	$ 87,506	0.74
Professional and business services	4,792	56,570	$ 6,279,817,664	$ 111,010	1.11
Education and health services	3,616	37,889	$ 2,268,190,330	$ 59,864	0.72
Leisure and hospitality	1,654	25,561	$ 742,163,893	$ 29,035	0.72
Other services	3,422	10,214	$ 711,188,365	$ 69,629	1.03
Government	308	22,756	$ 1,639,387,509	$ 72,042	1.45
Total	**23,206**	**304,754**	**$ 26,107,335,785**	**$ 85,667**	-

SOURCE: U.S. Bureau of Labor Statistics

Among major industries, the "manufacturing" industry was the most strongly represented, with government being the next. The "transportation, warehousing & utilities," "education and health services," and "leisure and hospitality" industries were the most under-represented major industries. The information sector provided the highest average wages among these industries, while the other services industry has the lowest average wages.

A more detailed industry analysis shows that the industries with the highest LQ in the county are metal manufacturing, construction, and "administrative and support and waste management." Metal manufacturing, retail trade, and "health care and social assistance" employ the most people out of all the industries, employing a little over 36% of the county's entire employment base. The most under-represented industries are federal government, transportation and warehousing, state government, and utilities.

FIGURE 4.02: INDUSTRY SECTOR SPECIALIZATION BY DETAILED INDUSTRY, WASHINGTON COUNTY, 2022

Industry	Annual Establishments	Average Employees	Total Annual Wages	Average Annual Wages	Employment LQ
Natural resources and mining	238	3,220	$136,821,489	$42,491	0.87
Construction	1,992	18,517	$1,550,865,903	$83,754	1.18
Food manufacturing	166	3,205	$163,628,223	$51,054	0.68
Wood product manufacturing	191	5,627	$387,196,216	$68,810	0.83
Metal Manufacturing	546	45,011	$6,433,616,174	$142,934	3.12
Wholesale trade	1,494	13,977	$1,635,286,001	$116,998	1.15
Retail trade	1,560	32,772	$1,473,084,138	$44,949	1.04
Transportation and warehousing	354	6,810	$323,771,471	$47,544	0.52
Utilities	10	670	$87,749,413	$130,969	0.60
Information	830	7,632	$1,021,695,215	$133,870	1.23
Finance and insurance	1,070	10,122	$973,573,681	$96,184	0.80
Real estate and rental and leasing	962	4,182	$278,198,146	$66,523	0.88
Professional, scientific, and technical services	3,230	16,808	$1,605,073,820	$95,495	0.78
Management of companies and enterprises	174	16,910	$3,315,404,959	$196,062	3.32
Administrative and support and waste management	1,388	22,852	$1,359,338,885	$59,484	1.18
Educational services	368	5,728	$255,541,581	$44,613	0.94
Health care and social assistance	3,248	32,161	$2,012,648,749	$62,580	0.78
Arts, entertainment, and recreation	268	3,839	$111,669,819	$29,088	0.82
Accommodation and food services	1,386	21,722	$630,494,074	$29,026	0.80
Other services	1,896	9,481	$649,146,426	$68,468	1.06
Unclassified	1,527	751	$63,143,893	$84,641	1.25
Federal government	28	871	$77,503,006	$88,982	0.15
State government	34	2,206	$170,333,523	$77,214	0.24
Local government	246	19,680	$1,391,550,980	$70,709	0.70
Total	**23,206**	**304,754**	**$26,107,335,785**	**$85,667**	**-**

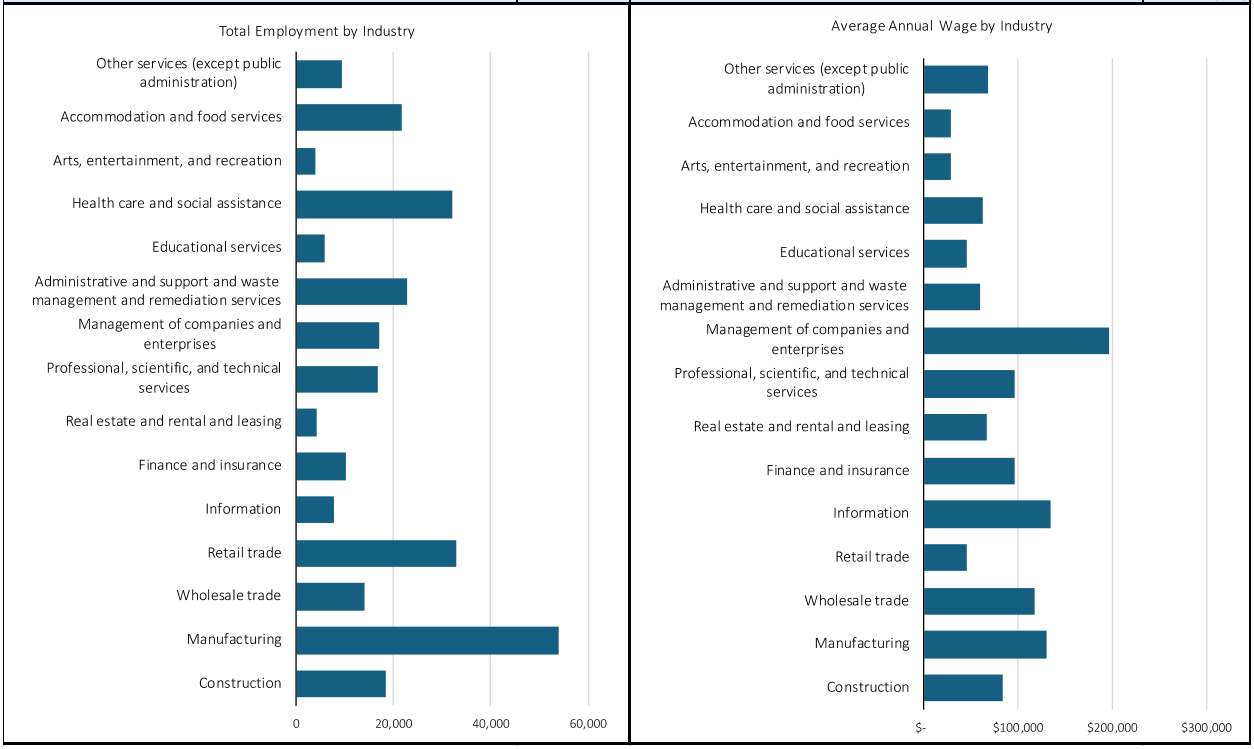
SOURCE: State of Oregon Employment Department

The level of indicated export employment is estimated by sector by combining the location quotients and overall employment levels. Export industries are important in that they grow the overall size of the local economy by bringing in dollars from outside the community, rather than recirculating internal spending. The industries with the highest level of export employment are manufacturing, management of companies and enterprises, and "administrative and support and. Waste management and remediation services."

Furthermore, industries with the highest annual average wages in Washington County are management of companies and enterprises, information, manufacturing, and wholesale trade. All these industries also have location quotients above 1, indicating that these have a high concentration of employment in the region relative to the rest of the nation.

FIGURE 4.03: TOP TEN INDUSTRIES IN TERMS OF TOTAL AND EXPORT EMPLOYMENT, WASHINGTON COUNTY(2022)

Industry	Location Quotient	Industry	Export Employment
Management of companies and enterprises	3.25	Manufacturing	27,323
Manufacturing	2.03	Management of companies and enterprises	11,727
Information	1.20	Administrative and support and waste management/remediation services	3,006
Construction	1.15	Construction	2,477
Administrative and support and waste management/remediation services	1.15	Wholesale trade	1,541
Unclassified	1.14	Information	1,290
Wholesale trade	1.12	Retail trade	581
Other services (except public administration)	1.03	Other services (except public administration)	318
Retail trade	1.02	Unclassified	87
Educational services	0.92	Educational services	(499)



SOURCE: U.S. Bureau of Labor Statistics

ECONOMIC SPECIALIZATION (CITY OF FOREST GROVE)

The same analysis for the City of Forest Grove reveals elevated levels of employment concentration in industries such as educational services, food manufacturing, metals manufacturing, wood manufacturing, and accommodation and food services. In terms of employment concentration, educational services far out-perform any other industries in the city with a location quotient of 9.94, with the next highest employment concentration in the city being food manufacturing with a location quotient of 4.37. This is largely due to the presence of Pacific University in Forest Grove.

FIGURE 4.04: INDUSTRY SECTOR SPECIALIZATION BY DETAILED INDUSTRY, CITY OF FOREST GROVE, 2022

Industry	Average Employment	Annual Establishments	Total Annual Wages	Average Annual Wages	Employment LQ
Agriculture, forestry, fishing, and hunting	81	5	$5,298,515	$65,414	1.15
Construction	431	90	$29,511,626	$68,472	1.00
Food Manufacturing	571	14	$31,957,976	$55,968	4.37
Wood Manufacturing	291	8	$16,696,298	$57,376	1.56
Metals Manufacturing	775	13	$42,591,064	$54,956	1.95
Utilities	32	4	$2,541,590	$79,425	1.03
Wholesale trade	110	25	$10,343,722	$94,034	0.33
Retail trade	539	51	$19,763,643	$39,388	0.62
Transportation	42	9	$1,319,937	$31,427	0.22
Delivery and warehousing	36	4	$2,291,426	$63,651	0.21
Information	36	14	$3,120,955	$86,693	0.21
Finance and Insurance	114	30	$8,612,866	$75,551	0.33
Real Estate and Rental	65	34	$2,043,570	$31,440	0.49
Professional, Scientific, and Technical Services	147	50	$16,037,648	$109,100	0.25
Management of Companies and Enterprises	11	5	$858,280	$78,025	0.08
Administrative and Waste Management	234	27	$12,553,739	$53,648	0.44
Educational services	1,668	17	$105,988,170	$63,542	9.94
Health care and social assistance	1,119	126	$47,165,436	$42,150	0.98
Arts, Entertainment, and Recreation	79	11	$1,799,323	$22,776	0.61
Accommodation and Food Services	935	64	$23,644,828	$25,289	1.24
Other services	189	63	$6,524,421	$34,521	0.77
Government	118	3	$8,383,959	$71,051	0.29
Total	**7,623**	**667**	**$ 399,048,992**	**$ 52,348**	

SOURCE: Oregon Employment Department

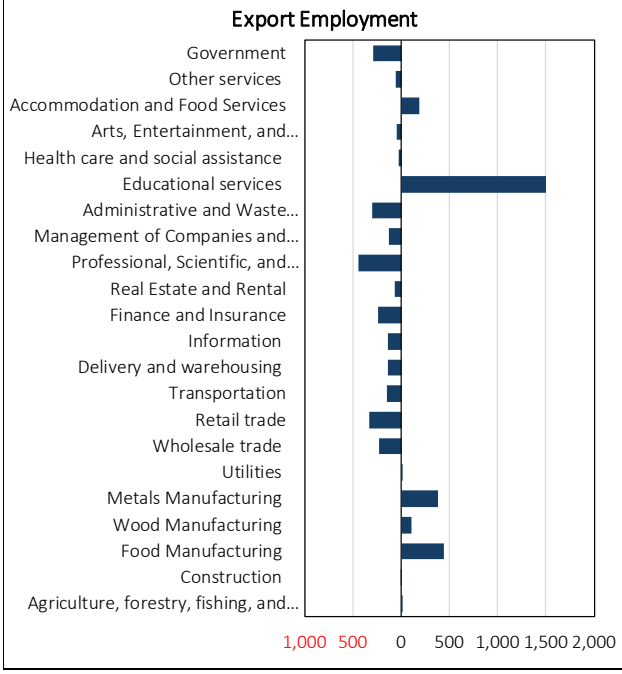
The top sectors in terms of overall employment were educational services[2], health care & social assistance, accommodation & food services, and metals manufacturing. There were seven industries with positive export employment, the largest being educational services, food manufacturing, and metals manufacturing. The large concentration of educational services is in large part contributed by Pacific University, who employs 845 people and is the largest employer in Forest Grove.

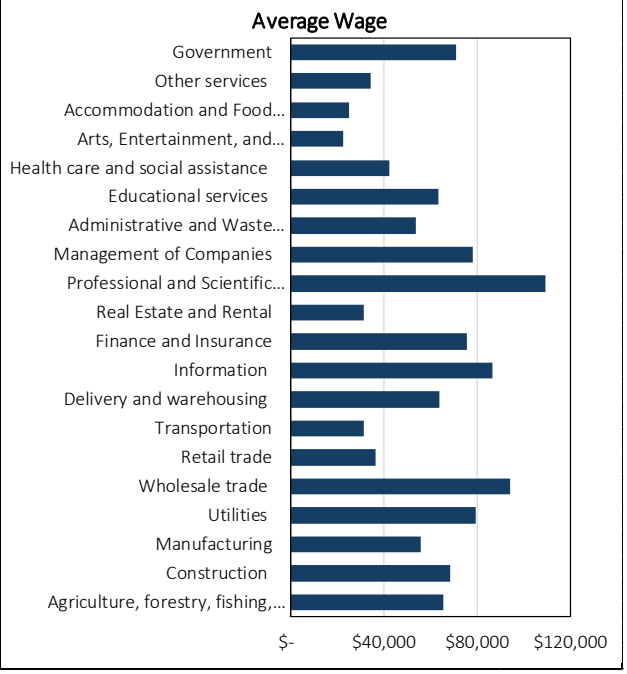
2 Public education is included under educational services (NAICS 61) as opposed to Government (NAICS 92).

FIGURE 4.05: TOP TEN INDUSTRIES IN TERMS OF TOTAL AND EXPORT EMPLOYMENT, CITY OF FOREST GROVE (2022)

Industries	Export Employment
Educational services	1,500
Food Manufacturing	440
Metals Manufacturing	377
Accommodation and Food Services	184
Wood Manufacturing	105
Agriculture, forestry, fishing, and hunting	11
Utilities	1
Construction	(1)
Health care and social assistance	(21)
Arts, Entertainment, and Recreation	(50)

Industry	Location Quotient
Educational services	9.94
Food Manufacturing	4.37
Metals Manufacturing	1.95
Wood Manufacturing	1.56
Accommodation and Food Services	1.24
Agriculture, forestry, fishing, and hunting	1.15
Utilities	1.03
Construction	1.00
Health care and social assistance	0.98
Other services	0.77





SOURCE: Oregon Employment Department and Bureau of Labor Statistics

ECONOMIC DRIVERS

The identification of the economic drivers of a local or regional economy is critical in informing the character and nature of future employment, and by extension land demand over a planning cycle. To this end, we employ a shift-share analysis of the local economy emerging out of the latter half of the recent expansion cycle[3].

A shift-share analysis is an analytical procedure that measures the local effect of economic performance within a particular industry or occupation. The process considers local economic performance in the context of national economic trends—indicating the extent to which local growth can be attributed to unique regional competitiveness or simply growth in line with broader trends. For example, consider that Widget Manufacturing is growing at a 1.5% rate locally, about the same rate as the local economy. On the surface we would consider the Widget Manufacturing industry to be healthy and contributing soundly to local economic expansion. However, consider also that Widget Manufacturing is booming across the country, growing at a robust 4% annually. In this context, local widget manufacturers are struggling, and some local or regional conditions are stifling economic opportunities.

3 Measured from 2011 through 2021

We can generally classify industries, groups of industries, or clusters into four groups:

Growing, Outperforming: Industries that are growing locally at a rate faster than the national average. These industries have characteristics locally leading them to be particularly competitive.

Growing, Underperforming: Industries that are growing locally but slower than the national average. These industries generally have a sound foundation, but some local factors are limiting growth.

Contracting, Outperforming: Industries that are declining locally but slower than the national average. These industries have structural issues that are impacting growth industry wide. However, local firms are leveraging some local or regional factor that is making them more competitive than other firms on average.

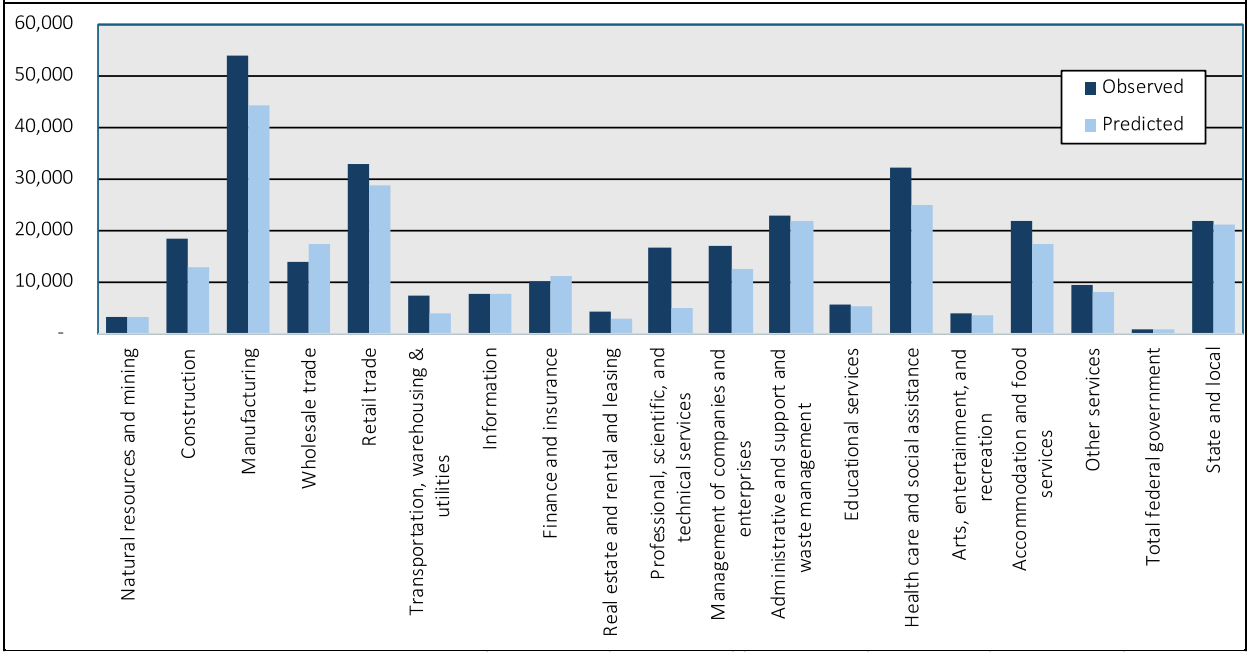
Contracting, Underperforming: Industries that are declining locally at a rate faster than the national average. These industries have structural issues that are impacting growth industry wide. However, some local or regional factors are making it increasingly tough on local firms.

The average annual growth rate by industry from 2012 to 2022 in Washington County was compared to the national rate. The observed local change was compared to a standardized level reflecting what would be expected if the local industry grew at a rate consistent with national rates for that industry.

As shown in Figure 4.07, more county industries grew at a faster rate than the rest of the country than those that grew at a slower rate. Sectors that experienced the most notable positive regional shift in employment during this period were professional, scientific, and technical services, manufacturing, health care & social assistance, construction, and management of companies and enterprises. The sectors that showed negative regional shift in employment were wholesale trade, finance and insurance, and information.

FIGURE 4.07: INDUSTRY SECTOR SHIFT SHARE ANALYSIS, WASHINGTON COUNTY (2012 – 2022)

Industry	Average Employment		Net Change		Standardized	Regional
	2012	2022	Total	AAGR	Level - 2022	Shift
Natural resources and mining	3,134	3,220	86	0.27%	3,111	109
Construction	12,480	18,517	6,037	4.02%	12,884	5,633
Manufacturing	44,140	53,861	9,721	2.01%	44,450	9,411
Wholesale trade	17,446	13,977	3,469	-2.19%	17,544	3,567
Retail trade	28,608	32,772	4,164	1.37%	28,724	4,048
Transportation, warehousing & utilities	3,664	7,480	3,816	7.40%	3,803	3,677
Information	7,587	7,632	45	0.06%	7,681	49
Finance and insurance	10,948	10,122	826	-0.78%	11,097	975
Real estate and rental and leasing	2,998	4,182	1,184	3.38%	3,059	1,123
Professional, scientific, and technical services	4,763	16,808	12,045	13.44%	4,901	11,907
Management of companies and enterprises	12,297	16,910	4,613	3.24%	12,573	4,337
Administrative and support and waste management	21,420	22,852	1,432	0.65%	21,798	1,054
Educational services	5,112	5,728	616	1.14%	5,175	553
Health care and social assistance	24,515	32,161	7,646	2.75%	24,938	7,223
Arts, entertainment, and recreation	3,482	3,839	357	0.98%	3,537	302
Accommodation and food services	17,129	21,722	4,593	2.40%	17,357	4,365
Other services	7,996	9,481	1,485	1.72%	8,020	1,461
Total federal government	722	871	149	1.89%	723	148
State and local	21,034	21,886	852	0.40%	21,296	590
Total	**249,564**	**304,754**	**55,190**	**2.02%**	**252,672**	**52,082**

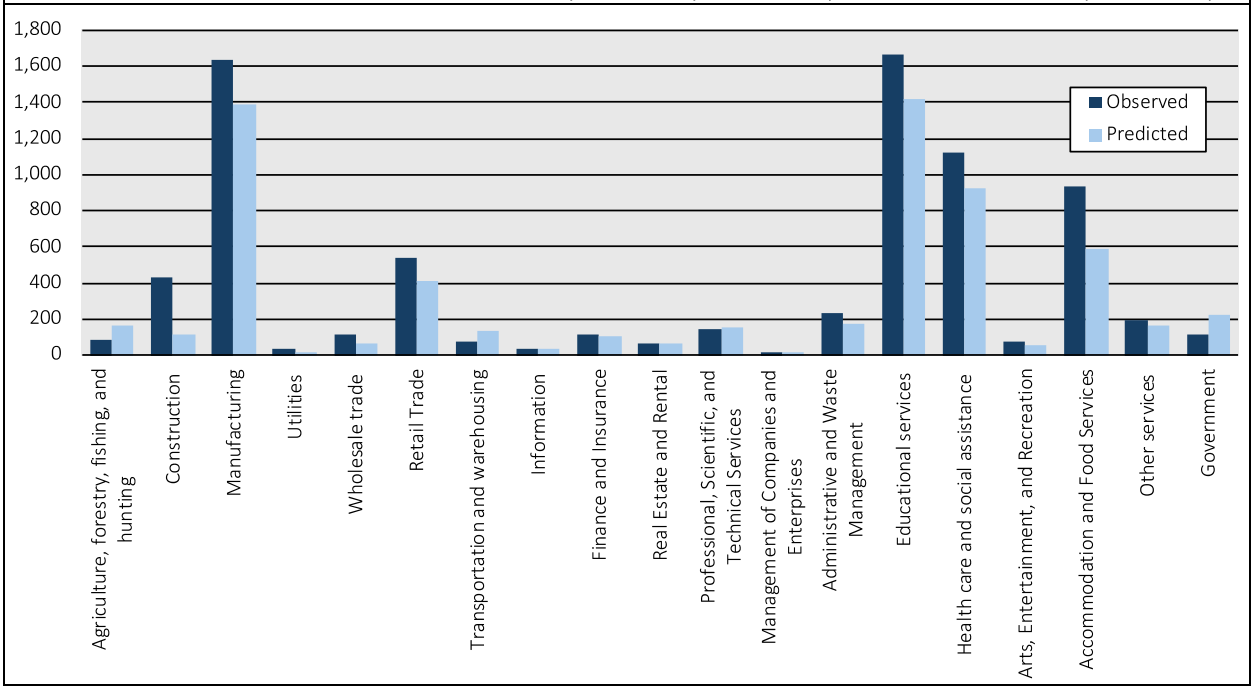


SOURCE: Oregon Employment Department

When the same analysis is done for the City of Forest Grove, the city's growth outperformed the rest of the country in additional industries. The best performing sectors on this measure in the local economy were accommodation & food services, construction, manufacturing, and educational services. The sectors that showed a negative shift in employment were government, agriculture, forestry, fishing and hunting, and transportation and warehousing.

FIGURE 4.08: INDUSTRY SECTOR SHIFT SHARE ANALYSIS, CITY OF FOREST GROVE (2012 – 2022)

Industry	Average Employment		Net Change		Standardized	Regional
	2012	2022	Total	AAGR	Level	Shift
Agriculture, forestry, fishing, and hunting	164	81	83	-6.81%	165	84
Construction	109	431	322	14.74%	113	318
Manufacturing	1,375	1,637	262	1.76%	1,385	252
Utilities	17	32	15	6.53%	17	15
Wholesale trade	60	110	50	6.25%	60	50
Retail Trade	408	539	131	2.82%	410	129
Transportation and warehousing	132	78	54	-5.12%	138	60
Information	31	36	5	1.51%	31	5
Finance and Insurance	106	114	8	0.73%	107	7
Real Estate and Rental	60	65	5	0.80%	61	4
Professional, Scientific, and Technical Services	145	147	2	0.14%	149	2
Management of Companies and Enterprises	12	11	1	-0.87%	12	1
Administrative and Waste Management	168	234	66	3.37%	171	63
Educational services	1,403	1,668	265	1.75%	1,423	245
Health care and social assistance	903	1,119	216	2.17%	921	198
Arts, Entertainment, and Recreation	53	79	26	4.07%	54	25
Accommodation and Food Services	579	935	356	4.91%	587	348
Other services	160	189	29	1.68%	159	30
Government	218	118	100	-5.95%	221	103
Total	**6,103**	**7,623**	**1,520**	**2.25%**	**6,196**	**1,427**



SOURCE: Oregon Employment Department

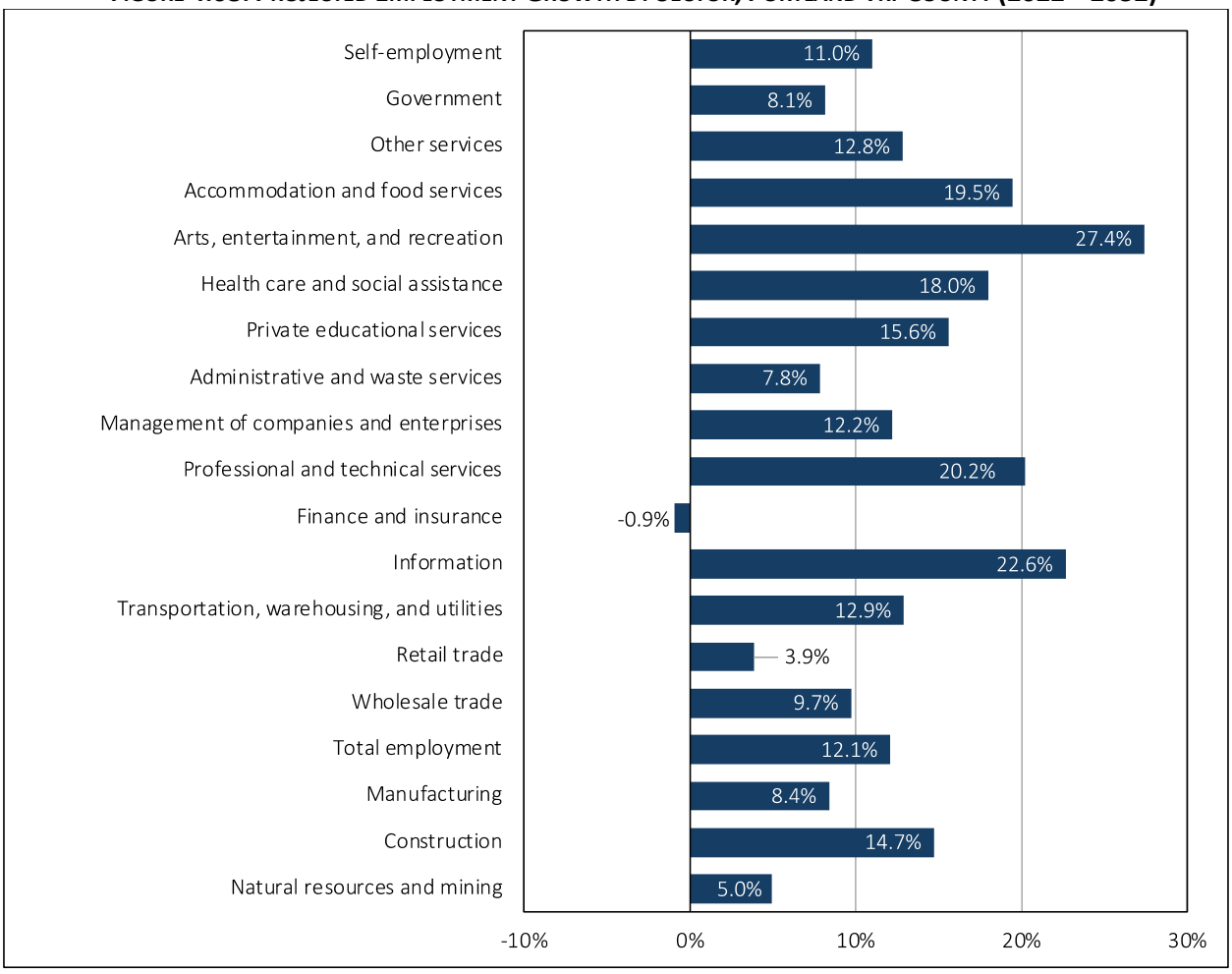
The indicated decline in government reflects a shift in categorization of employment as opposed to an absolute decline. The 2022 reporting for the City of Forest Grove shifted the classification of 46 city jobs to the construction sector, 14 to information, 5 to professional services, and 73 to arts, entertainment, and recreation.

PROJECTED EMPLOYMENT GROWTH (OED)

The State of Oregon produces employment forecasts by sector at the broader regional level, which groups Clackamas, Washington, and Multnomah Counties together into one "Portland Tri-County" region. The most recent forecast anticipates a gain of 127,500 jobs from 2022 through 2032, reflecting an average annual growth rate of about 1.2% during the period.

In this region, the industries with the fastest growth rates are projected to be arts, entertainment, and recreation, information, & professional and technical services, followed by accommodation & food services, and health care and social assistance. Furthermore, the only industry projected to experience negative growth in the coming years is finance and insurance.

FIGURE 4.08: PROJECTED EMPLOYMENT GROWTH BY SECTOR, PORTLAND TRI-COUNTY (2022 – 2032)



SOURCE: Oregon Employment Department, Workforce and Economic Research Division

V. FOREST GROVE TARGET INDUSTRIES ANALYSIS

The preceding analysis provides a basis for narrowing target industries for the City of Forest Grove. These indicators point to sectors of past and potential growth, as well as locally expressed economic development vision for the community. The following is a summary of targeted sectors and indicators for Forest Grove.

FIGURE 5.01: FOREST GROVE TARGET INDUSTRIES AND KEY INDICATORS

TARGET INDUSTRIES
Educational Services
Health Care and Social Assistance
Food Product Manufacturing
Wood Product Manufacturing
Metals Manufacturing
Information
Professional, Scientific, and Technical Services

CURRENT LARGEST EMPLOYMENT
Educational Services
Health Care and Social Assistance
Accommodation and Food Services
Metals Manufacturing
Food Manufacturing
Construction
Retail Trade

STRONG SHIFT SHARE INDICATOR
Educational Services
Metal Manufacturing
Food Manufacturing
Accommodation and Food Services
Wood Manufacturing

STRONG LOCATION QUOTIENT
Metal Manufacturing
Educational Services
Food Manufacturing
Wood Manufacturing
Accommodation and Food Services
Agriculture, Forestry, Fishing, and Hunting

CITY OF FOREST GROVE TARGET INDUSTRIES

The preceding analysis of industry strengths and regional priorities provided a foundation for the discussion of local target industries for the City of Forest Grove. Through the EOA planning process, the city's Economic Development Commission reviewed the economic goals, priorities, and target industries from the prior adopted plans, and agreed upon the following list of priority sectors to help meet the community's economic development goals.

The selected industries reflect the community's historical strengths and advantages, regional trends, and local goals and objectives. These are discussed in more detail in the following pages:

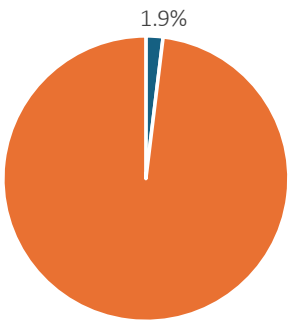
- Professional, Scientific, and Technical Services
- Information
- Health Care and Social Services
- Technology
- Education
- Food Manufacturing
- Wood Manufacturing
- Metal Manufacturing

Note: The following discussion of target sectors relies on the most recent QCEW data from the Oregon Employment Department, dating to 2022.

A. Professional, Scientific, and Technical Services

Professional, scientific, and technical services are are not well represented in Forest Grove. This sector has poor location quotient and shift share indicators, with the sector only employing 1.9% of the local population. TTM Technologies North American provide a lot of the jobs in this industry, as well as the metal manufacturing industry. The majority of these jobs from companies providing one to four jobs. The trends in working from home could be a major benefit to this industry. Since the pandemic, work from home jobs have skyrocketed, leading to more people moving away from the city where they can live a quieter life in a more inexpensive living area. As a city that is small but still close in proximity to Portland, Forest Grove has the potential to be attractive to some of these higher-earning individuals.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	147
Average Annual Wage	$109,100
Growth 2012-2022	2
Estimated Export Employment	(410)

MAJOR LOCAL EMPLOYERS
TTM Technologies North America
Alliance for Sustainable Energy
Kindness Family Pet Clinic
Companion Pet Care

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
541	Professional, Scientific, and Technical Services	147	2	0.1%	$109,100
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

Professional, scientific, and technical services has a very high average income, at $109,100. The covered employment level in this sector was 147 in 2022, representing roughly 1.9% of the local employment base. Employment levels in the sector increased by only two people from 2012 through 2022.

Cluster Strengths

- High wages.
- Promising wave of people working from home.

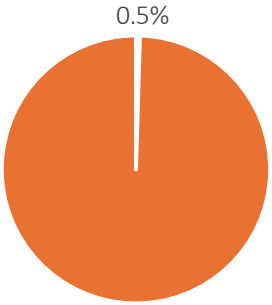
Cluster Challenges

- Very little realized growth.

B. Information

The Information sector is small and with a small location quotient and negative export employment. The City of Forest Grove and the Forest Grove News Times were the only two significant employers with more than two employees. The overall employment level in this sector was very low, however Forest Grove has the potential to attract a large information center project. An information center like this is unlikely to bring many jobs, but it could provide significant fiscal benefits to the city in terms of taxes and fees without increasing traffic or home prices.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	36
Average Annual Wage	$86,693
Growth 2012-2022	5
Estimated Export Employment	(125)

MAJOR LOCAL EMPLOYERS

City of Forest Grove
Forest Grove News Times

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
51	Information	36	5	1.5%	$86,693
513	Publishing industries	20	-6	-2.6%	$111,003
517	Telecommunications	2	0	0.0%	$87,550
519	Other Information Services	14	14	N/A	$51,557
Total		**7,623**	**1,520**	**2%**	**$52,348**

The employment level of the information industry was only 36 in 2022, making up 0.5% of the total employment. The average annual wage was approximately $86,693 per year in 2022, significantly higher than average. Employment levels in the sector increased by 16% from 2012 through 2022. The key prospects in this sector are data centers, which have seen aggressive expansion nationwide over the last several years.

Cluster Strengths

- High paying jobs.
- Potential to bring in a large information center.
- Can bring the city income by form of energy usage.
- Proximity to high-tech manufacturing and biotechnology firms.
- Low seismic threat relative to other West Coast markets
- Access to subsea cables, reducing latency to high value Asia-Pacific markets.

Cluster Challenges

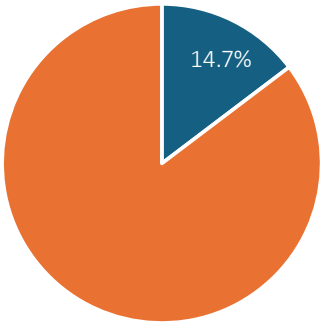
- Low employment densities
- High electrical needs and limited availability
- Potential significant water needs

The information industry, particularly data centers, has a very high level of anticipated growth, but the availability of power will limit the city's ability to accommodate growth in this sector. While the City of Forest Grove manages its own electrical utility, it does not generate its own power and relies upon the Bonneville Power Administration (BPA) for supply. The availability of electricity and transmission line capacity represent significant limiting factors in the ability of the jurisdiction to attract and serve large scale data centers in the future. The city has requested additional power allocation from BPA, but it will be five to seven years at a minimum before any is available.

C. HEALTH CARE AND SOCIAL SERVICES

Like most communities, Forest Grove will increasingly face growing health care needs from a growing and aging population. The health care needs of the Baby Boom generation, the oldest of which are approaching 80 years old and the youngest approaching 60, are expected to increase the need for health care facilities and workforce over the next 20 years. Forest Grove can be an ideal location for retirees, furthering the need for stable healthcare facilities and jobs.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	1,119
Average Annual Wage	$42,150
Growth 2012-2022	216
Estimated Export Employment	43

MAJOR LOCAL EMPLOYERS

Forest Grove Beehive, Hawthorne House
Masonic & Eastern Star Home
PCI Care Venture
Pacific Grove Senior Living
Marquis Companies I Inc

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
62	Health Services & Social Assistance	1,119	1,116	2.2%	$42,150
621	Ambulatory Health Care Services	185	30	-1.5%	$51,671
622	Hospitals	39	39	N/A	$71,601
623	Nursing and Residential Care Facilities	680	100	1.6%	$43,154
624	Social Assistance	214	106	7.1%	$25,538
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

The overall employment level in this sector was 1,119 in 2022, representing just under 15% of the local employment base. The average annual wage was approximately $42,150 per year in 2022, with an average wage range of $26,117 for social workers and $55,202 for ambulatory health care workers. Employment levels in the sector increased by 24% from 2012 to 2022.

Cluster Strengths

- Growing and aging population base.
- Low local competition for many specialties and more advanced healthcare for rural populations to the north, west, and south of the city.
- Ability to serve larger market of the far western Portland Metro suburbs.

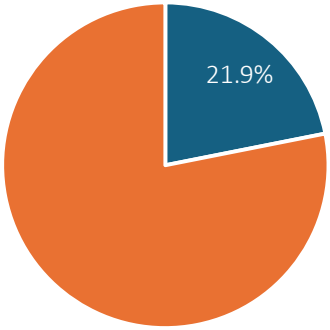
Cluster Challenges

- Attracting a major medical group.
- Potential competition with Hillsboro/Portland Metro market.

D. EDUCATION

Education is one of the most well-represented industries in Forest Grove, with a location quotient of 9.94. A substantial portion of this employment is from Pacific University. Besides professors and other staff, Pacific University also brings in students who would otherwise not spend money in the area. Other major employers are from the public school system. The employment growth of this industry will generally rely on the growth of Pacific University and the youth population.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	1,668
Average Annual Wage	$63,542
Growth 2012-2022	265
Estimated Export Employment	1,500

MAJOR LOCAL EMPLOYERS

Pacific University
Forest Grove High School
Forest Grove School District
Tom McCall Upper Elementary School
Neil Armstrong Middle School
Adelante Mujeres

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
61	Educational Services	1,668	265	1.7%	$63,542
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

The overall employment level in this sector was 1,668 in 2022, representing roughly 22% of the local employment base. The average annual wage was $63,542. Employment levels in the sector grew by roughly 19% from 2012 through 2022.

Cluster Strengths

- Presence of Pacific University.
- Students at the University spend money in Forest Grove.
- Well-paid employees.

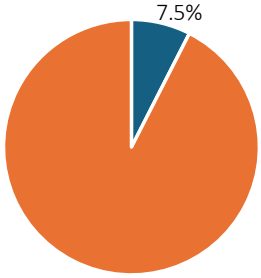
Cluster Challenges

- Reliance on Pacific University for growth.

E. Food Manufacturing

The food manufacturing industry is much more concentrated in Forest Grove compared to the nation, as shown by high location quotient and export employment numbers. The biggest employer by a significant margin is Old Trapper Smoked Products, followed by Chaucer Foods, Lieb Foods, and SakeOne Corp. Forest Grove's proximity to Portland provides the city a lot of potential for growth in the manufacturing sector, allowing manufacturing companies to quickly transport goods to a larger market while enjoying the friendlier rental prices of Forest Grove.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	571
Average Annual Wage	$55,968
Growth 2012-2022	386
Estimated Export Employment	481
MAJOR LOCAL EMPLOYERS	
Old Trapper Smoked Product	
Chaucer Foods Inc	
Lieb Foods	
Sakeone Corp	

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
31	Manufacturing	571	387	12.0%	$55,968
311	Food manufacturing	535	376	12.9%	$55,020
312	Beverage & Tobacco Manufacturing	36	11	3.7%	$70,070
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

Cluster Strengths

- Very fast industry growth
- Proximity to agricultural production
- Above average wages.

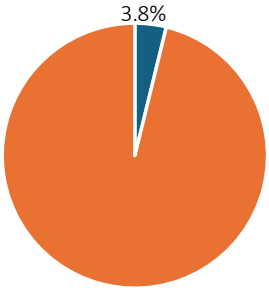
Cluster Challenges

- Other cities surrounding Portland have better access to the I-5 corridor.

The overall employment level in this sector was 571 in 2022, representing roughly 7.5% of the local employment base. The average annual wage was $53,836 per year in 2022. Employment levels grew at an astonishing rate, increasing by 208.6% from 2012 to 2022.

F. WOOD MANUFACTURING

This sector features a high location quotient and shift share rating, indicating a larger than usual share of employment. The wood manufacturing has grown at a very fast rate, increasing employment by 67% from 2012 to 2022. A lot of this growth is due to DMH Inc, who has increased their employment by 130%, as well as MGC Pure Chemicals moving to Forest Grove in 2017. This industry greatly benefits from the presence of the timber industry in rural western Oregon.



TARGET SECTOR STATS	
2022 Employment	571
Average Annual Wage	$57,376
Growth 2012-2022	386
Estimated Export Employment	481

MAJOR LOCAL EMPLOYERS
DMH Inc
Woodfold MFG
High Tech Crating

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
32	Manufacturing	291	117	5.3%	$57,376
321	Wood Product Manufacturing	224	82	4.7%	$52,731
323	Printing and Related Support Activities	8	6	14.9%	$17,856
325	Chemical Manufacturing	31	31	N/A	N/A
326	Plastics and rubber products manufacturing	2	-17	-20.2%	N/A
327	Nonmetallic mineral product manufacturing	26	15	9.0%	N/A
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

Cluster Strengths

- Fast growing industry.
- Experienced labor force.
- Supported by the timber industry.
- Above average wages

Cluster Challenges

- Strong reliance on one company

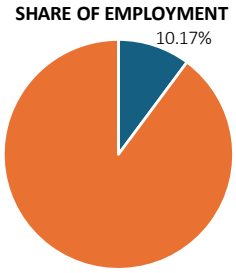
The employment level in this sector was roughly 291 in 2022, representing roughly 3.8% of the local employment base. The average annual wage is higher than average at approximately $57,376 per year in 2022.

G. METAL MANUFACTURING

Metal manufacturing is one of the most strongly represented industry in Forest Grove when compared with the nation, having a location quotient of 1.95 and an estimated export employment of 377. The majority of these employees work for TTM Technologies, a global corporation whose Forest Grove location specializes in manufacturing circuit boards. Their 2014 acquisition of Viasystems Corporation decreased employment by just under 200 employees, but the large investment in the location provides some employment security. The presence of other chip processing factories and companies in the nearby area can provide an opportunity Over the last 10 years, the metal manufacturing industry employment has decreased by roughly 24%.

Chip manufacturing can have huge benefits for other related industries, such as industrial gas manufacturing, electric power transmission & distribution, and facilities support services. Like all manufacturing, it also increases the need for warehousing and building the facilities increases construction and concrete manufacturing.

The City of Forest Grove is expected to see opportunities over the planning horizon in the technology sector. While the city is unlikely to capture a major chip manufacturing facility, proximity to the Silicon Forest concentration in Hillsboro will provide opportunties to capture related industries.



TARGET SECTOR STATS	
2022 Employment	775
Average Annual Wage	$54,956
Growth 2012-2022	-241
Estimated Export Employment	756

MAJOR LOCAL EMPLOYERS
TTM Technologies North America
Pacific Air Switch Corp
Westak of Oregon
RDF&P

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
33	Manufacturing	775	241	-2.7%	$54,956
332	Fabricated Metal Product Manufacturing	88	88	N/A	$60,390
333	Machinery Manufacturing subsector	4	4	N/A	N/A
334	Computer & Electronic Product Manufacturing	594	249	-3.4%	$52,656
335	Manufacturing of electrical equipment, appliances,& components	85	6	0.7%	N/A
337	Furniture and Related Product Manufacturing	3	8	-12.2%	$43,338
339	Miscellaneous Manufacturing	1	20	-26.2%	N/A
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

The overall employment level in this sector was roughly 775 in 2022, representing roughly 10.2% of the local employment base. The average annual wage is slightly above average in Forest Grove at approximately $54,956 in 2022.

Cluster Strengths

- Large companies anchoring the industry.
- Experienced labor force already living in the surrounding areas, Intel.
- Existence of established chip manufacturing companies in nearby areas gives Forest Grove potential to bring new companies to the city.
- Proximity to Oregon's largest high-tech manufacturing concentration.

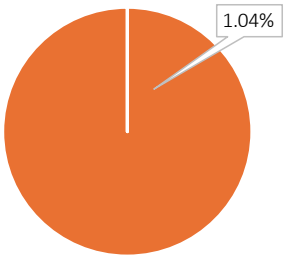
Cluster Challenges

- Negative recent growth rate
- Limited supply of industrial land, specifically shovel-ready large parcels.
- Lack of direct transportation connections to the north Hillsboro employment area.

H. ARTS, ENTERTAINMENT, AND RECREATION

The arts, entertainment, and recreation industry has a low location quotient and negative export employment. The industry has grown at a relatively fast rate, averaging a 4.1% increase in employment every year since 2012. There is certainly potential for growth in this industry, especially in targeting the younger population attending Pacific University. Potential entertainment tenants that could fill this role are a pickle ball venue, arcades, or go karts. Creating more night life options such as bars, karaoke, or a comedy club is also a potential option.

SHARE OF EMPLOYMENT



TARGET SECTOR STATS	
2022 Employment	79
Average Annual Wage	$22,776
Growth 2012-2022	16
Estimated Export Employment	(43)
MAJOR LOCAL EMPLOYERS	
City of Forest Grove	
Rainbow Lanes Bowling	
Adventures Without Limits	
Forest Grove Fitness	

NAICS	Description	2022 Employment	Growth '12-'22 Total	Growth '12-'22 %	Average Wage
71	Arts, Entertainment, and Recreation	79	26	4.1%	$22,776
711	Performing arts, spectator sports, and related industries	1	1	N/A	N/A
712	Museums, Historical Sites, and Similar Institutions	8	8	N/A	$46,477
713	Amusement, gambling, and recreation industries	70	17	2.8%	$18,800
Total		**7,623**	**1,520**	**2.2%**	**$52,348**

Cluster Strengths

- Fast growing industry.
- Large population of potential young consumers due to Pacific University.

Cluster Challenges

- Low wages
- Little current employment

The employment level in this sector was roughly 79 in 2022, representing roughly 1.03% of the local employment base. The average annual wage is significantly lower than average at approximately $22,776 per year in 2022.

VII. FORECAST OF EMPLOYMENT AND LAND NEED

CITY OF FOREST GROVE EMPLOYMENT FORECAST

Goal 9 requires that jurisdictions plan for a 20-year supply of commercial and industrial capacity. Because employment capacity is the physical space necessary to accommodate new workers in the production of goods and services, employment need forecasts typically begin with a forecast of employment growth in the community. The previous analysis of economic trends and targeted industries set the context for these estimates. This analysis translates those trends into estimates of employment growth by industry sector. Forecasts are produced at the sector or subsector level (depending on available information) and subsequently aggregated into two-digit North American Industry Classification System (NAICS) sectors. Estimates in this analysis are intended for long-range land planning purposes and are not designed to predict or reflect short-term business cycle fluctuation.

The projections in this analysis are built on an estimate of employment in 2024, the commencement year for the planning period. Employment growth will come as the result of net-expansion of existing businesses in the community, new business formation, or the relocation/recruitment of new firms. Forecast scenarios consider a range of factors influencing growth. Long-range forecasts typically rely on a macroeconomic context for growth. The forecast does not consider the impact of a significant exogenous shift in employment such as recruitment of an unforeseen major employer.

OVERVIEW OF EMPLOYMENT FORECAST METHODOLOGY

Our methodology starts with employment forecasts for major commercial and industrial sectors. Forecasted employment is allocated to building type, and a space demand is a function of the assumed square footage per employee ratio multiplied by projected change. The need for space is then converted into land and site needs based on assumed development densities using floor area ratios (FARs).

FIGURE 6.01: UPDATE TO 2024 BASELINE AND CONVERSION OF COVERED TO TOTAL EMPLOYMENT

The first analytical step of the analysis is to update covered employment to the 2024 base year. The Quarterly Census of Employment and Wages (QCEW) data was used to determine the City of Forest Grove's covered employment by industry through 2022, the latest year available. To update these estimates, we use observed industry specific growth rates for Washington County between 2022 and 2024.

The second step in the analysis is to convert "covered"[4] employment to "total" employment. Covered employment only accounts for a share of overall employment in the economy. Specifically, it does not consider sole proprietors or commissioned workers. Covered employment was converted to total employment based on observed ratios at the national level derived from the Bureau of Economic Analysis from 2014 through 2021. The differential is the most significant in administration services, professional & technical services, and other services. The adjusted 2024 total employment base for the City of Forest Grove is 8,449 jobs.

FIGURE 6.02: UPDATE TO 2022 BASELINE AND CONVERSION OF COVERED TO TOTAL EMPLOYMENT, CITY OF FOREST GROVE (2022 – 2024)

	QCEW Employment				
Major Industry Sector	2022 Employment	'22-'24 County Δ[1]	2024 Estimate	Total Emp. Conversion[2]	2024 Estimate
Agriculture	81	0.0%	81	38.5%	210
Construction	431	1.7%	438	77%	569
Manufacturing	1,637	-0.8%	1,624	98%	1,659
Wholesale Trade	110	3.8%	114	98%	116
Retail Trade	539	-1.7%	530	95%	558
T.W.U.	110	0.8%	111	91%	121
Information	36	-2.2%	35	95%	37
Finance & Insurance	114	-3.1%	110	91%	121
Real Estate	65	3.4%	67	91%	74
Professional & Technical Services	147	-2.1%	144	90%	161
Administration Services	245	1.9%	250	90%	279
Education	1,668	-1.1%	1,649	95%	1,735
Health Care & Social Assistance	1,119	11.2%	1,244	95%	1,309
Leisure & Hospitality	1,014	5.8%	1,073	95%	1,132
Other Services	189	6.3%	201	83%	243
Government	118	5.4%	124	100%	124
TOTAL	**7,623**	**2.3%**	**7,796**	**92%**	**8,449**

1/Growth rate calculated using CES data for the Portland-Vancouver-Hillsboro, OR-WA MSA

2/ Bureau of Economic Analysis

SCENARIO 1: BASELINE "SAFE HARBOR" FORECAST

The Goal 9 statute does not have a required method for employment forecasting. However, OAR 660-024-0040(9)(a) outlines several safe harbor methods, which are intended to provide jurisdictions with a methodological approach that will not be challenged. The recommended approach for the City of Forest Grove is 660-024-0040(9)(a)(A), which allows reliance on the most recent regional forecast published by the Oregon Employment Department.[5] This method applies industry specific growth rates for the Workforce Region (Clackamas, Multnomah, and Washington counties) to the City of Forest Grove's 2024 base employment. This method results in an average annual growth rate of 1.3%, with a total growth of 2,427 jobs over the forecast period.

4 The Department of Labor's Quarterly Census of Employment and Wages (QCEW) tracks employment data through state employment departments. Employment in the QCEW survey is limited to firms with employees that are "covered" by unemployment insurance.

5 The second safe harbor method described under OAR 660-024-0040(9)(B) allows using the most recently forecasted population growth rate for the City from the PSU Population Research Center. The employment growth rate may be assumed to match the population growth rate. This option was reviewed by the Technical Advisory Group but ultimately declined.

SCENARIO 2: METRO URBAN GROWTH REPORT

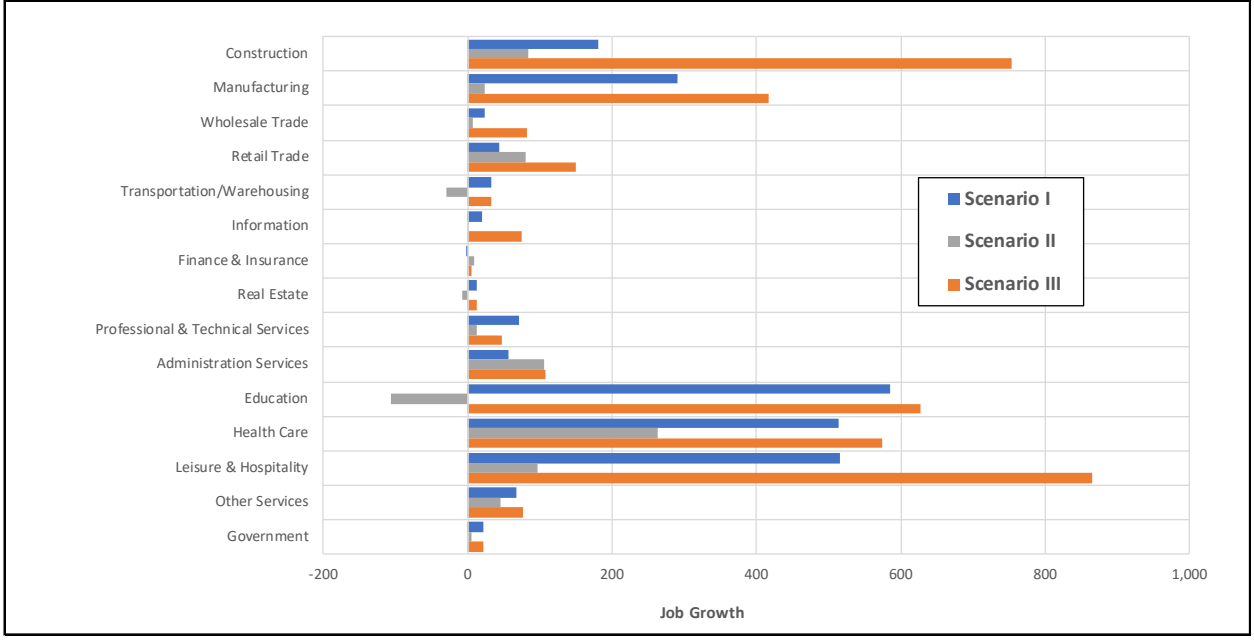
Metro's current draft Urban Growth Report (UGR) includes a regional forecast for the Portland metropolitan area. This forecast included projected growth by industrial sector for the region. This scenario applied the projected growth rates at the industry level to the City of Forest Grove's current employment base. The resulting average annual growth rate was a very modest 0.3%, reflecting a net gain of 589 jobs over the next twenty years.

SCENARIO 3: ADJUSTED EMPLOYMENT FORECAST

A third adjusted forecast scenario was informed by the research and analysis conducted in the EOA. This scenario formulates an employment growth trajectory based on identified trends, a more optimistic growth outlook for targeted industries, and input from the project technical advisory group. Further, the alternative scenario recognizes that economic development efforts and public policy can influence realized growth in targeted sectors. Under this scenario employment growth would be 3,843 over the period, reflecting a 1.9% average annual growth rate.

FIGURE 6.03: COMPARISON OF ALTERNATE FORECASTS, CITY OF FOREST GROVE (2024 - 2044)

	SCENARIO I (Regional Forecast)				SCENARIO II (Metro UGR)				SCENARIO III (Adjusted)			
Industry	2024	2044	Chg.	AAGR	2024	2044	Chg.	AAGR	2024	2044	Chg.	AAGR
Construction	569	749	180	1.4%	569	654	84	0.7%	569	1,322	753	4.3%
Manufacturing	1,659	1,949	290	0.8%	1,659	1,683	24	0.1%	1,659	2,075	416	1.1%
Wholesale Trade	116	140	24	0.9%	116	123	6	0.3%	116	199	82	2.7%
Retail Trade	558	602	44	0.4%	558	638	80	0.7%	558	708	150	1.2%
Transportation/Warehousing	121	155	33	1.2%	121	92	-29	-1.4%	121	155	33	1.2%
Information	37	56	19	2.1%	37	38	1	0.1%	37	111	74	5.6%
Finance & Insurance	121	119	-2	-0.1%	121	130	9	0.4%	121	126	4	0.2%
Real Estate	74	86	12	0.8%	74	66	-7	-0.5%	74	86	12	0.8%
Professional & Technical Services	161	232	71	1.9%	161	173	12	0.4%	161	207	47	1.3%
Administration Services	279	334	55	0.9%	279	385	106	1.6%	279	387	108	1.7%
Education	1,735	2,319	584	1.5%	1,735	1,629	-106	-0.3%	1,735	2,363	628	1.6%
Health Care	1,309	1,822	513	1.7%	1,309	1,572	263	0.9%	1,309	1,883	574	1.8%
Leisure & Hospitality	1,132	1,648	516	1.9%	1,132	1,228	96	0.4%	1,132	1,996	864	2.9%
Other Services	243	310	66	1.2%	243	289	46	0.9%	243	319	76	1.4%
Government	124	145	21	0.8%	124	129	5	0.2%	124	145	21	0.8%
TOTAL:	**8,239**	**10,666**	**2,427**	**1.3%**	**8,239**	**8,828**	**589**	**0.3%**	**8,239**	**12,082**	**3,843**	**1.9%**



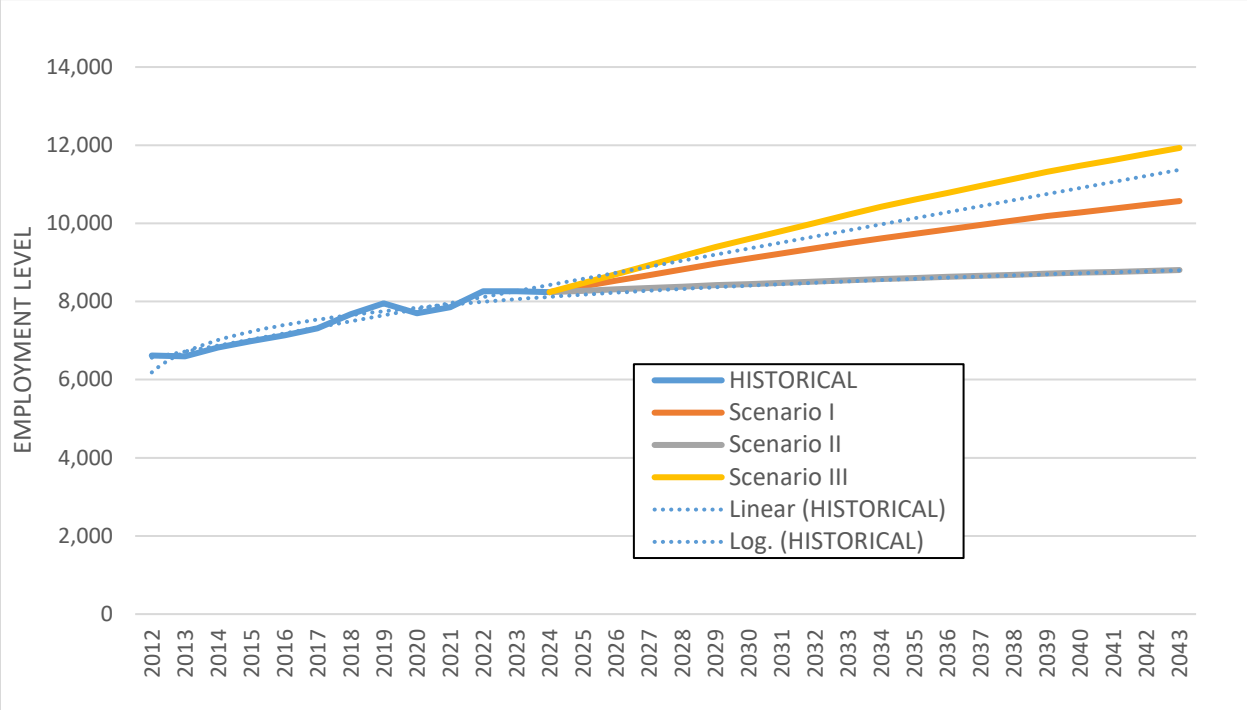
Source: Oregon Employment Department, Johnson Economics

The adjusted scenario considers the influence of known or anticipated development over the near- and medium-term horizon, and local economic development goals. The forecasted rate is consistent with the realized employment growth rate since 2010 of 1.9% per year, (source: Oregon Employment Department, QCEW data).

SUMMARY OF EMPLOYMENT FORECAST SCENARIOS

The three forecast scenarios in this analysis range from 0.3% to 1.9% average annual growth. Job growth estimates range from 589 to 3,786 jobs over the 20-year period. Forecasts grounded in broad based economic variables cannot account for all the realities of local businesses and trends among evolving industries. Any long-term forecast is inherently uncertain and should be updated on a regular basis to reflect more current information. This is particularly true in a smaller jurisdiction such as Forest Grove, in which a single large firm's location and/or operational decision may substantively impact on the rate of growth.

FIGURE 6.04: HISTORIC EMPLOYMENT GROWTH AND PROJECTION SCENARIOS, CITY OF FOREST GROVE



The forecasts were further broken into four five-year increments, assuming a declining rate of growth over the period. We would expect that a twenty-year forecast will include multiple business cycles, and that growth will be more variable than shown.

FIGURE 6.05: SUMMARY OF PROJECTION SCENARIOS, CITY OF FOREST GROVE

Industry	Overall Employment					Net Change by Period				Total
	2024	2029	2034	2039	2044	24-29	29-34	34-39	39-44	24-44
SCENARIO I (Regional Forecast) 0										
Construction	569	623	672	714	749	54	48	42	36	180
Manufacturing	1,659	1,746	1,823	1,891	1,949	87	78	68	58	290
Wholesale Trade	116	124	130	136	140	7	6	6	5	24
Retail Trade	558	571	583	594	602	13	12	10	9	44
Transportation/Warehousing	121	131	140	148	155	10	9	8	7	33
Real Estate	74	77	81	83	86	4	3	3	2	12
Professional & Technical Services	161	182	201	218	232	21	19	17	14	71
Administration Services	279	295	310	323	334	17	15	13	11	55
Health Care	1,309	1,463	1,601	1,720	1,822	154	138	120	102	513
Leisure & Hospitality	1,132	1,287	1,425	1,545	1,648	155	138	120	102	516
Other Services	243	263	281	296	310	20	18	15	13	66
Government	124	131	136	141	145	6	6	5	4	21
TOTAL:	**8,239**	**8,967**	**9,619**	**10,184**	**10,666**	**728**	**651**	**566**	**482**	**2,427**
SCENARIO II (Metro UGR) 0										
Construction	569	595	617	637	654	25	23	20	17	84
Manufacturing	1,659	1,666	1,672	1,678	1,683	7	6	6	5	24
Wholesale Trade	116	118	120	122	123	2	2	2	1	6
Retail Trade	558	582	603	622	638	24	21	19	16	80
Transportation/Warehousing	121	113	105	98	92	-9	-8	-7	-6	-29
Real Estate	74	71	70	68	66	-2	-2	-2	-1	-7
Professional & Technical Services	161	164	168	171	173	4	3	3	2	12
Administration Services	279	311	339	364	385	32	29	25	21	106
Health Care	1,309	1,388	1,459	1,520	1,572	79	71	61	52	263
Leisure & Hospitality	1,132	1,161	1,187	1,209	1,228	29	26	22	19	96
Other Services	243	257	269	280	289	14	12	11	9	46
Government	124	126	127	128	129	1	1	1	1	5
TOTAL:	**8,239**	**8,416**	**8,574**	**8,711**	**8,828**	**177**	**158**	**137**	**117**	**589**
SCENARIO III (Adjusted) 0										
Construction	569	795	997	1,173	1,322	226	202	176	150	753
Manufacturing	1,659	1,784	1,895	1,992	2,075	125	112	97	83	416
Wholesale Trade	116	141	163	182	199	25	22	19	16	82
Retail Trade	558	603	643	678	708	45	40	35	30	150
Transportation/Warehousing	121	131	140	148	155	10	9	8	7	33
Real Estate	74	77	81	84	86	4	3	3	2	12
Professional & Technical Services	161	175	187	198	207	14	13	11	9	47
Administration Services	279	311	340	365	387	32	29	25	21	108
Health Care	1,309	1,481	1,635	1,769	1,883	172	154	134	114	574
Leisure & Hospitality	1,132	1,391	1,623	1,825	1,996	259	232	201	172	864
Other Services	243	266	286	304	319	23	20	18	15	76
Government	124	131	136	141	145	6	6	5	4	21
TOTAL:	**8,239**	**9,392**	**10,423**	**11,319**	**12,082**	**1,153**	**1,031**	**896**	**763**	**3,843**

Source: Johnson Economics

EMPLOYMENT LAND FORECAST

The next analytical step in our analysis is to convert projections of employment into forecasts of land demand over the planning period. The generally accepted methodology for this conversion begins by allocating employment by sector into a distribution of building typologies those economic activities typically use. As an example, insurance agents typically locate in traditional office space, often along commercial corridors. However, a percentage of these firms are also located in commercial retail space adjacent to retail anchors. Cross tabulating this distribution provides an estimate of employment in each typology.

The next step converts employment into space using estimates of the typical square footage exhibited within each typology. Adjusting for typical stabilized market vacancy we arrive at an estimate of total space demand for each building type. Finally, we can consider the physical characteristics of individual building types and the amount of land they typically require for development. The site utilization metric commonly used is referred to as a "floor area ratio" or FAR. For example, assume a 25,000-square foot general industrial building requires roughly a site of roughly 100k

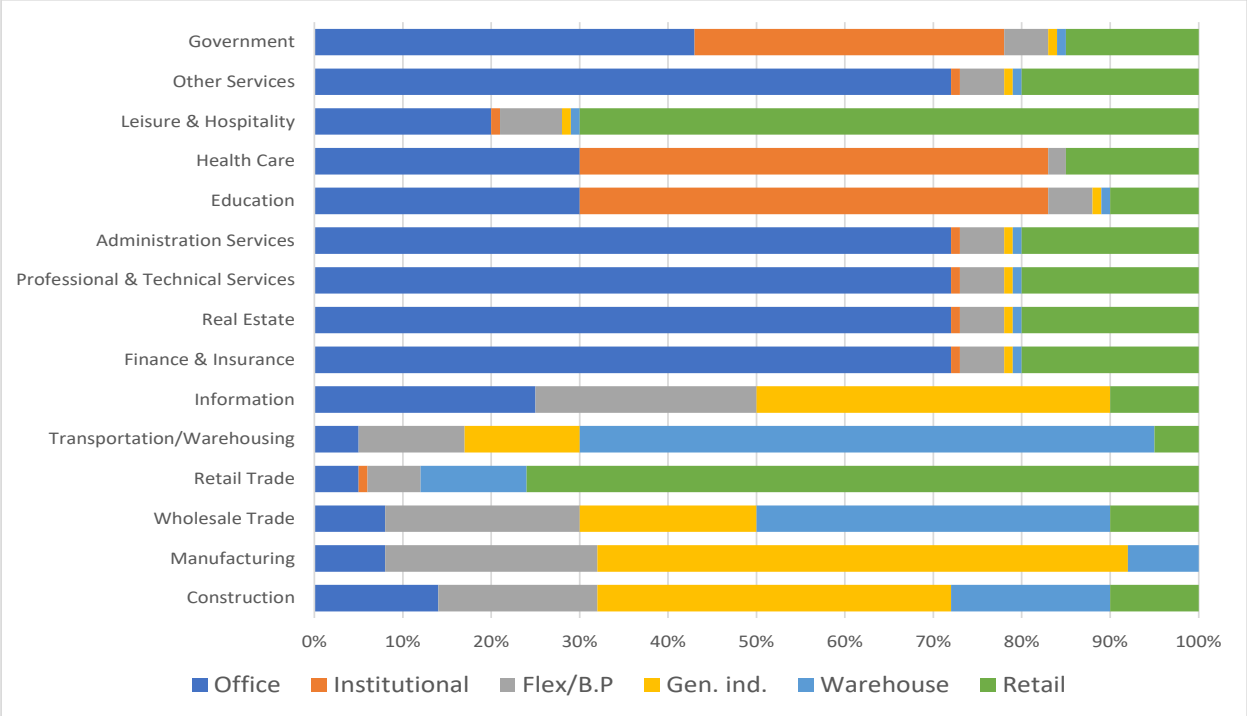
square feet to accommodate its structure, setbacks, parking, and necessary yard/storage space. This building would have a FAR of roughly 0.25. Demand for space is then converted to net acres using a standard floor area ratio FAR for each development form.

LAND DEMAND ANALYSIS – ADJUSTED FORECAST

In this analytical step we allocate employment growth to the standard building typologies. The building typology matrix represents the share of sectoral employment that is located across various building types.

FIGURE 6.05: DISTRIBUTION OF EMPLOYMENT BY SPACE TYPE, CITY OF FOREST GROVE (ADJUSTED FORECAST)

	20-year Job Forecast		BUILDING TYPE MATRIX					
Industry Sector	Number	AAGR	Office	Institutional	Flex/B.P	Gen. ind.	Warehouse	Retail
Construction	753	4.3%	14%	0%	18%	40%	18%	10%
Manufacturing	416	1.1%	8%	0%	24%	60%	8%	0%
Wholesale Trade	82	2.7%	8%	0%	22%	20%	40%	10%
Retail Trade	150	1.2%	5%	1%	6%	0%	12%	76%
Transportation/Warehousing	33	1.2%	5%	0%	12%	13%	65%	5%
Information	74	5.6%	25%	0%	25%	40%	0%	10%
Finance & Insurance	4	0.2%	72%	1%	5%	1%	1%	20%
Real Estate	12	0.8%	72%	1%	5%	1%	1%	20%
Professional & Technical Services	47	1.3%	72%	1%	5%	1%	1%	20%
Administration Services	108	1.7%	72%	1%	5%	1%	1%	20%
Education	628	1.6%	30%	53%	5%	1%	1%	10%
Health Care	574	1.8%	30%	53%	2%	0%	0%	15%
Leisure & Hospitality	864	2.9%	20%	1%	7%	1%	1%	70%
Other Services	76	1.4%	72%	1%	5%	1%	1%	20%
Government	21	0.8%	43%	35%	5%	1%	1%	15%
TOTAL	**3,843**	**1.9%**	**23%**	**17%**	**10%**	**16%**	**7%**	**26%**



Source: Johnson Economics

Under the employment forecast scenario, employment housed in retail space accounts for the greatest share of growth, followed by employment housed in office and institutional space. The combined employment forecast for commercially zoned space (~2,500 jobs) is greater than that forecast for industrially zoned space (~1,280 jobs).

FIGURE 6.06: NET GROWTH IN EMPLOYMENT BY BUILDING TYPE, CITY OF FOREST GROVE (ADJUSTED FORECAST)

	NET CHANGE IN EMPLOYMENT BY BUILDING TYPE - 2023-2043						
Industry Sector	**Office**	**Institutional**	**Flex/B.P**	**Gen. Ind.**	**Warehouse**	**Retail**	**Total**
Construction	105	0	136	301	136	75	753
Manufacturing	33	0	100	250	33	0	416
Wholesale Trade	7	0	18	16	33	8	82
Retail Trade	7	1	9	0	18	114	150
Transportation/Warehousing	2	0	4	4	22	2	33
Information	19	0	19	30	0	7	74
Finance & Insurance	3	0	0	0	0	1	4
Real Estate	9	0	1	0	0	2	12
Professional & Technical Services	34	0	2	0	0	9	47
Administration Services	78	1	5	1	1	22	108
Education	188	333	31	6	6	63	628
Health Care	172	304	11	0	0	86	574
Leisure & Hospitality	173	9	60	9	9	605	864
Other Services	55	1	4	1	1	15	76
Government	9	7	1	0	0	3	21
TOTAL	**894**	**657**	**402**	**619**	**259**	**1,013**	**3,843**

Source: Johnson Economics

Employment growth estimates by building type are then converted to demand for physical space. This conversion assumes the typical space needed per employee on average. This step also assumes a market average vacancy rate, acknowledging that equilibrium in real estate markets is not 0% vacancy. We assume a 10% vacancy rate for office, retail, and flex uses, as these forms have high rates of speculative multi-tenant usage. A 5% rate is used for general industrial and warehouses. These uses have higher rates of owner occupancy that lead to lower overall vacancy. Institutional uses are assumed to have no vacancy, as they are typically purpose-built for healthcare, nonprofit, government, or related users.

The demand for space is converted into an associated demand for acreage using an assumed Floor Area Ratio (FAR), based upon the observed FAR in existing commercial and industrial properties. The combined space and FAR assumptions further provide estimates indicated of job densities, determined on a net-developable acre basis.

FIGURE 6.08: NET ACRES REQUIRED BY BUILDING TYPOLOGY, CITY OF FOREST GROVE (ADJUSTED FORECAST) – 20-YEAR

	DEMAND BY GENERAL USE TYPOLOGY, 2023-2043						
	Office	Institutional	Flex/B.P	Gen. Ind.	Warehouse	Retail	Total
Employment Growth	894	657	402	619	259	1,013	3,843
Avg. SF Per Employee	350	600	990	600	1,850	500	640
Demand for Space (SF)	313,000	394,000	398,000	371,000	479,000	506,000	2,461,000
Floor Area Ratio (FAR)	0.35	0.35	0.30	0.30	0.30	0.25	
Market Vacancy	10.0%	0.0%	10.0%	5.0%	5.0%	10.0%	
Implied Density (Jobs/Acre)	28.0	18.2	11.9	20.7	6.7	15.7	16.4
Net Acres Required	31.9	36.2	33.8	29.9	38.6	64.5	235.0
Industrial Acreage	0.0	0.0	33.8	29.9	38.6	0.0	102.3
Commercial Acreage	31.9	36.2	0.0	0.0	0.0	64.5	132.6

Source: Johnson Economics

Commercial office and retail densities are 28 and 16 jobs per acre, respectively. Industrial uses range from 21 for general industrial to less than 7 jobs per acre for warehouse/distribution. The overall weighted employment density is 16.4 jobs per acre, with the projected 3,843-job expansion in the local employment base through 2044 requiring an estimated 235 net acres of employment land. An estimated 56% of this forecasted need is commercial land, and 44% industrial land.

VIII. RECONCILIATION OF EMPLOYMENT NEED AND INVENTORY

This section summarizes the demand for employment land as well as the current inventory of land zoned for employment uses.

SUMMARY OF LAND DEMAND (ACRES)

The estimate of future land need is represented below. A total need for 235 net acres was identified across a range of land use and building types under Scenario III, based on the adjusted growth forecast. The need under Scenario I was 140.4 acres, and only 32.3 under Scenario II.

FIGURE 7.1: SUMMARY OF FORECASTED 20-YEAR LAND NEED BY BUILDING TYPOLOGY

	DEMAND BY GENERAL USE TYPOLOGY, 2023-2043						
	Office	Institutional	Flex/B.P	Gen. Ind.	Warehouse	Retail	Total
SCENARIO I							
Net Acres Required	23.1	32.9	17.3	13.4	15.7	38.1	140.4
Industrial Acreage	0.0	0.0	17.3	13.4	15.7	0.0	46.3
Commercial Acreage	23.1	32.9	0.0	0.0	0.0	38.1	94.1
SCENARIO II							
Net Acres Required	7.3	4.9	3.3	2.3	1.8	12.6	32.3
Industrial Acreage	0.0	0.0	3.3	2.3	1.8	0.0	7.4
Commercial Acreage	7.3	4.9	0.0	0.0	0.0	12.6	24.8
SCENARIO III							
Net Acres Required	31.9	36.2	33.8	29.9	38.6	64.5	235.0
Industrial Acreage	0.0	0.0	33.8	29.9	38.6	0.0	102.3
Commercial Acreage	31.9	36.2	0.0	0.0	0.0	64.5	132.6

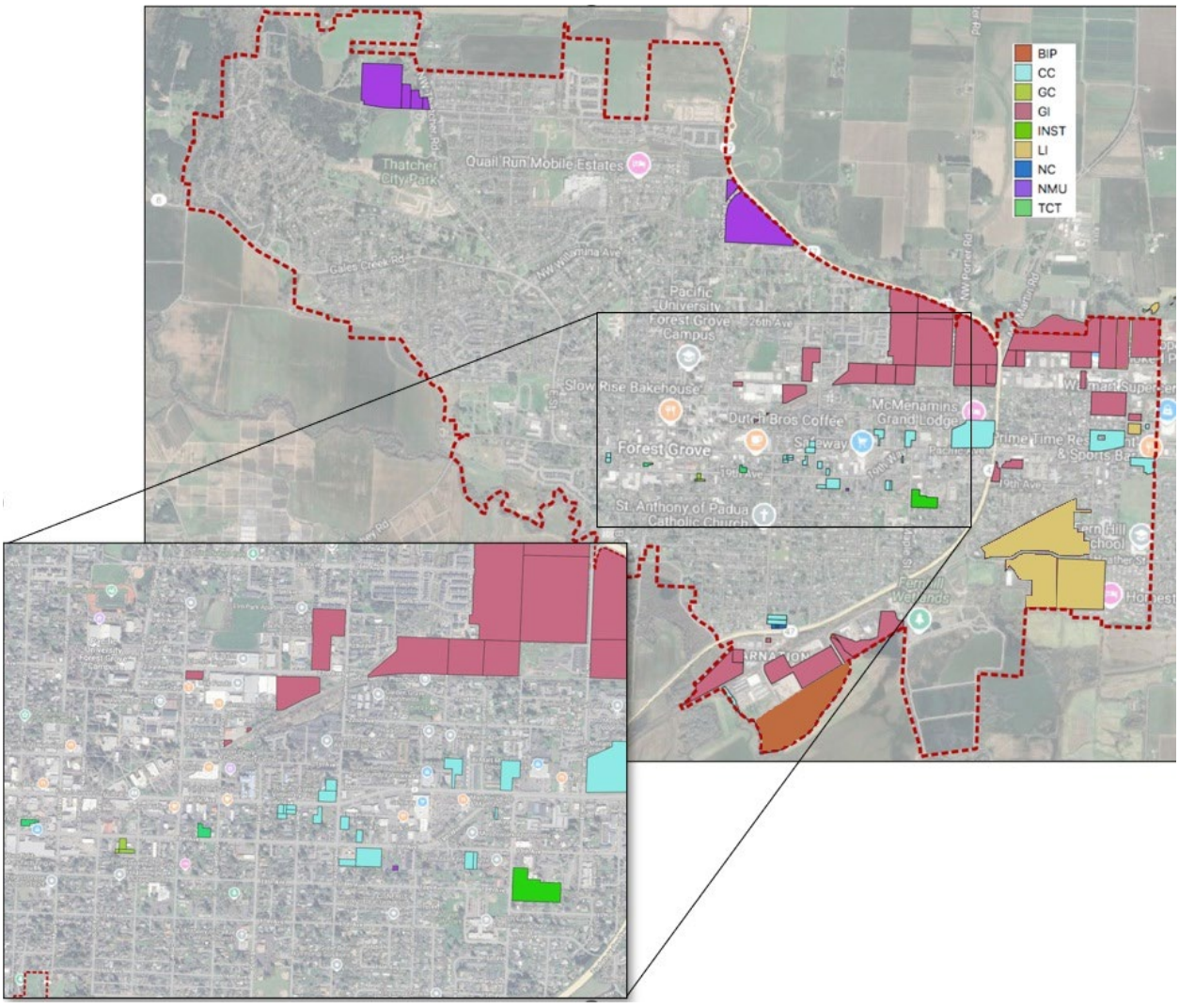
Source: Johnson Economics LLC

An estimated 35% of this forecasted need is industrial land (business park, general industrial, warehouse), and 65% commercial land (office, retail, institutional). There is a forecasted need for a total of 102 net acres of industrial land, and 133 net acres of commercial land.

SUMMARY OF LAND SUPPLY (ACRES)

To assess the remaining supply of buildable employment land suitable to accommodate the 20-year land need, an inventory of land with the proper zoning is required. For this analysis we rely upon the Buildable Lands Inventory maintained by Metro, which was adjusted to reflect local knowledge. The following map depicts Forest Grove's fully and partially vacant employment land.

FIGURE 7.2: REDEVELOPABLE EMPLOYMENT LANDS BY ZONE, FOREST GROVE (2024)



Source: City of Forest Grove, Metro, JOHNSON ECONOMICS

Most of the city's vacant employment parcels are made up of industrial-zoned parcels, specifically designated as "General Industrial" (GI). These zones are found along the peripheries to the northeast and southeast of the city's boundaries. There is also a group of "Light Industrial" (LI) land to the very east of the city. There are also two sizable groups of "Neighborhood Mixed Use" (NMU) parcels in the north and northwest of the city. There are a few

"Community Commercial" (CC), "Institutional" (INT), and "General Commercial" (GC) parcels that are potentially redevelopable along 19th Ave and Pacific Way which are commercial hubs in the city. Overall, the most of the redevelopable employment lands are found towards the east of the city as the west side is made up of mostly residential land.

The following table details the number of parcels and total acreages based on zoning code in the City of Forest Grove. The following is a summary of the results on that inventory.

FIGURE 7.3: LAND INVENTORY BY ZONE, FOREST GROVE (2024)

		Vacant		Partially Vacant		Total	
		Sites	Acres	Sites	Acres	Sites	Acres
COMMERCIAL							
TCT	Town Center Transition	2	0.7	0	0.0	2	0.7
CC	Community Commercial	17	4.6	11	23.0	28	27.5
NC	Neighborhood Commercial	3	0.6	0	0.0	3	0.6
INST	Institutional	0	0.0	1	0.0	1	0.0
NMU	Neighborhood Mixed Use	4	29.6	3	3.3	7	32.9
	Total Commercial	26	35.4	15	26.3	41	61.7
INDUSTRIAL							
BIP	Business Industrial Park	1	39.0	0	0.0	1	39.0
LI	Light Industrial	3	12.7	3	30.1	6	42.8
GI	General Industrial	14	68.6	18	139.1	32	207.8
	Total Industrial	18	120.3	21	169.2	39	289.6
TOTAL		44	155.7	36	195.6	80	351.3

SOURCE: Metro BLI and Johnson Economics

As shown, there are an estimated 61.7 acres of buildable Commercial land and an estimated 351.3 acres of buildable Industrial land. The BLI filtered all zoned employment land in Forest Grove by Commercial or Industrial zoning category, environmental constraints that will limit development, and whether the parcel is already developed, vacant, or partially vacant. The inventory was vetted to address development projects in the pipeline and known limitations on specific sites that will prevent development on all or a portion of the site.

The BLI was also broken down by site size, which is summarized in the following table.

FIGURE 7.4: VACANCY AND PARTIALLY DEVELOPED PROPERTY, FOREST GROVE (2024)

	< 5		5-10		10-20		20-50		50+	
	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres
COMMERCIAL										
Town Center Transition	2	0.7	0	0.0	0	0.0	0	0.0	0	0.0
Community Commercial	26	12.5	2	15.1	0	0.0	0	0.0	0	0.0
Neighborhood Commerci	3	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Institutional	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Neighborhood Mixed Use	5	4.7	0	0.0	2	28.2	0	0.0	0	0.0
Total Commercial	37	18.4	2	15.1	2	28.2	0	0.0	0	0.0
INDUSTRIAL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Business Industrial Park	0	0.0	0	0.0	0	0.0	1	39.0	0	0.0
Light Industrial	3	3.7	1	5.9	1	10.2	1	23.0	0	0.0
General Industrial	19	35.4	6	44.3	6	97.7	1	30.4	0	0.0
Total Industrial	22	39.1	7	50.2	7	107.9	3	92.4	0	0.0
TOTAL	59	57.5	9	65.3	9	136.1	3	92.4	0	0.0

SOURCE: Metro BLI and Johnson Economics

COMPARING RECONCILIATION OF 20-YEAR LAND SUPPLY AND DEMAND

Comparing the Buildable Land Inventory (including known sites under development) to the 20-year forecast of employment land need indicates that the City of Forest Grove has adequate industrial land capacity but may face a shortage of commercial land. A summary of the comparison of land supply and demand is presented below.

FIGURE 7.5: RECONCILIATION OF NEED AND CAPACITY BY SCENARIO

	BLI	DEMAND BY SCENARIO			NEED BY SCENARIO		
	ACRES	I	II	III	I	II	III
COMMERCIAL	61.7	94.1	24.8	132.6	32.4	(36.9)	70.9
INDUSTRIAL	289.6	46.3	7.4	102.3	(243.2)	(282.1)	(187.3)
TOTAL	351.3	140.4	32.3	235.0	(210.9)	(319.0)	(116.3)

Source: Johnson Economics LLC

This analysis indicates that the City of Forest Grove faces a deficit of commercial capacity under Scenarios I & II over a twenty-year horizon. This is consistent with the rapidly expanding household base in the city and limited supply of land. The commercial capacity within the UGB is adequate to meet twenty-year needs under the slower growth Scenario II.

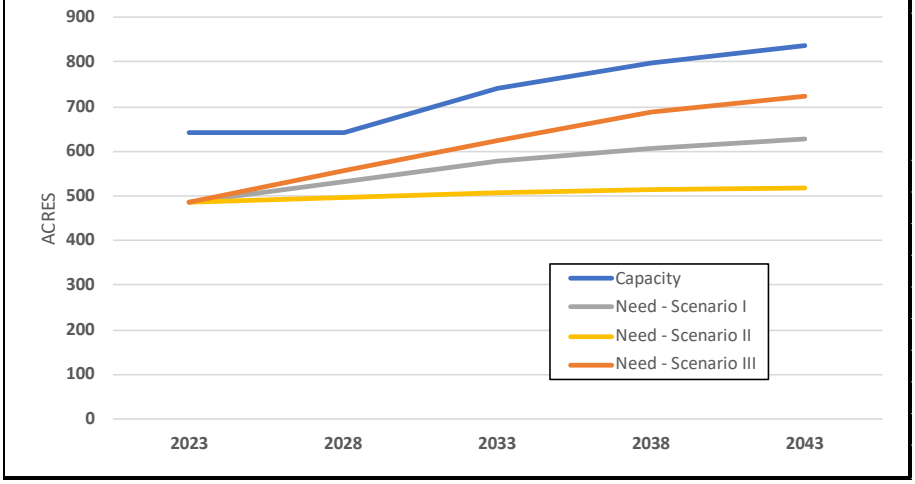
The industrial land supply in aggregate appears to be adequate to accommodate anticipated industrial land demand over the next twenty years under all three scenarios. The city has a limited inventory of larger sites, and this could limit the potential to attract and/or retain companies that will require these types of sites. Forest Grove's industrial inventory is highly reliant upon partially developed properties, which account for over 58% of industrial capacity.

It is important to note that some of the forecasted growth will include employers who may have specific site needs and preferences that are not reflected in the available buildable inventory. (See Appendix A for more details on site preferences for certain key industries.)

Some commercial demand is likely to be met on properties zoned for industrial uses, as many industrial developments include an office component. These sites tend to be poorly located for retail commercial uses, and as such are poor candidates to be rezoned to meet commercial needs.

FIGURE 7.6: RECONCILIATION OF LAND SUPPLY AND 20-YEAR DEMAND

	Buildable Inventory		Demand Forecast		Inventory Less Demand	
	5-Year	20-Year	5-Year	20-Year	5-Year	20-Year
SCENARIO I						
COMMERCIAL	35.4	61.7	29.3	94.1	6.1	(32.4)
INDUSTRIAL	120.3	289.6	14.3	46.3	106.0	243.2
TOTAL	**155.7**	**351.3**	**43.6**	**140.4**	**112.1**	**210.9**
SCENARIO II						
COMMERCIAL	35.4	61.7	7.6	24.8	27.8	36.9
INDUSTRIAL	120.3	289.6	2.5	7.4	117.9	282.1
TOTAL	**155.7**	**351.3**	**10.1**	**32.3**	**145.7**	**319.0**
SCENARIO III						
COMMERCIAL	35.4	61.7	39.8	132.6	(4.4)	(70.9)
INDUSTRIAL	120.3	289.6	30.5	102.3	89.8	187.3
TOTAL	**155.7**	**351.3**	**70.4**	**235.0**	**85.3**	**116.3**



Source: Johnson Economics LLC

The five-year buildable lands inventory in the preceding table reflects only vacant sites. It is assumed that partially vacant sites will be available to meet employment needs over a twenty-year period but may not be available to meet short-term needs.

IX. FINDINGS AND RECOMMENDATIONS

SUMMARY OF FINDINGS

The EOA report points to several key conclusions regarding economic development goals and target industries in Forest Grove over the next 20 years. It also quantifies projected employment growth and land need within the UGB, and the adequacy of the current supply of employment land to meet that need.

Employment Growth

Forest Grove is home to an estimated 8,449 jobs as of 2024. Based on a forecasted annual growth rate of 1.9%, the city is expected to add roughly 3,800 jobs by 2044. Employment growth over the next two decades is expected to include substantive growth in leisure and hospitality, construction, education, health care, manufacturing, and retail trade. The city's proximity and access to the broader Silicon Forest technology concentration is expected to drive future growth, while robust demographic growth is expected to drive future need for retail and other services. The education sector is expected to continue to represent a major component of the city's employment profile.

Expanding & Target Industries

The city has current advantages in several key industries including manufacturing, education, and a range of services. The following is a list of priority sectors to help meet the community's economic development goals. The selected industries reflect the community's historical strengths and advantages, regional trends, and local goals and objectives.

- Professional, Scientific, and Technical Services
- Information
- Health Care and Social Services
- Education
- Food Manufacturing
- Wood Manufacturing
- Metal Manufacturing

Supporting growth in a range of industries will help the community build a more diverse and sustainable employment and tax base for the future and be more resilient to economic impacts on the traditional local industries.

Employment Land Need

The EOA analysis finds that the forecasted 20-year job growth by industry will translate to a need for 235 total net acres of land zoned for employment uses. The distribution of land demand between commercial uses (Office, Institutional, Retail) and industrial uses (Industrial, Warehouse, Business Park) leans towards commercial (57% vs. 43%).

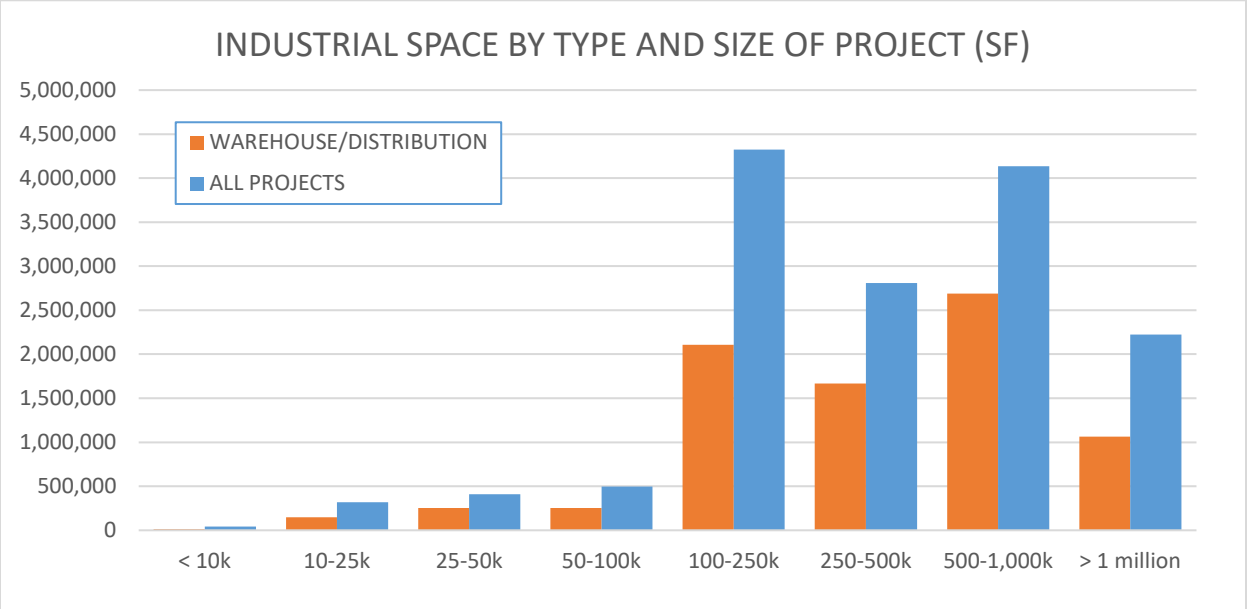
A range of site sizes will be needed, ranging from small to large to accommodate the projected business expansion. Different commercial and industrial users have different site requirements driven by the specific nature of their business operations, firm size, location and infrastructure requirements, and other factors. While the city appears to have an adequate developable inventory to meet its employment needs over the next twenty years in aggregate, it may lack sites meeting the requirements of specific employers.

Adequacy of Employment Land Supply

The Buildable Land Inventory (BLI) of employment lands completed in conjunction with the EOA found a total of 312.3 net buildable acres in Commercial and Industrial zones. This includes both vacant as well as partially vacant sites and was based on Metro's most current regional BLI reviewed and adjusted by city staff.

- The projected 20-year need for commercial land exceeds the available supply under Scenarios I and III, with an estimated 62 acres of commercial land remaining to meet a projected need for 133 acres under Scenario III. This indicates a deficit of 71 acres of commercial land.
- There is a projected supply of 289.6 acres of Industrial land to meet a projected need of 102 acres under Scenario III. This indicates an aggregate surplus of 148 acres of industrial land under the most aggressive of the forecast scenarios.
- The total estimated surplus of employment land ranges from 116 to 319 net acres, depending upon the scenario.
- It is important to recognize that aggregate site balance inherently understates needs, as the character of demand is not identical to supply.
- While the City of Forest Grove has adequate land capacity in aggregate, it currently has only two sites over 20-acres in size, and no sites over 50 acres. This could limit the city's ability to attract and/or retain businesses that may require larger sites.
    - Over the last decade, demand for industrial space has been dominated by projects over 100,000 SF in size.
    - 62% of space demand in projects over 250,000 SF in size, reflects an approximately 35-acre site.
    - 28% of demand for sites 35-70 acres in size
    - 15% of demand for sites over 70 acres

FIGURE 8.01: INDUSTRIAL SPACE DEVELOPMENT PROFILE BY SIZE OF SITE, PORTLAND METRO AREA (2018-2024)



- It is important to note that some prospective employers may have specific site needs and preferences that are not reflected in the available buildable inventory. (See Appendix A for more details on site preferences for certain key industries.)

EOA Implementation Recommendations

This section discusses a range of strategies and/or action items that the city may consider that are consistent with the findings of this report. (Adoption of this report does not imply official commitment to any of these steps although some of these strategies may be incorporated in Comprehensive Plan policies in some form.)

PROVIDE AN ADEQUATE SUPPLY OF EMPLOYMENT LAND & SITES		
CORE INITIATIVE		
	Actions	Notes
MEETING INDUSTRIAL AND COMMERCIAL LAND NEEDS		
1	Establish and maintain a competitive short-term and long-term supply of employment land, in readily developable sites.	The city should maintain an inventory of available employment land to meet the 20-year economic development needs of the community, including identifying sites of varying sizes that can be readily served with new infrastructure in the short-term. The City currently has an adequate capacity to meet employment needs, but it should evaluate options to increase commercial capacity.
2	Prioritize serving key industrial subareas and sites in the TSP and Capital Improvement Plan	Given limited public resources, ensure that all planning efforts reflect the prioritization and sequencing of infrastructure projects to serve key sites identified as providing capacity in the BLI.
3	Encourage infill, redevelopment, and/or adaptive reuse of obsolete or underused properties in current employment zones.	Some existing commercial and retail space in the Downtown area and along commercial corridors might be more intensively used, accommodating more job growth in existing employment areas. More intensive development and mixed-use construction often encounter a feasibility gap between costs and end value. Common approaches to bridging this gap include TIF funding, tax credit programs, tax incentives, and public/private partnerships.
4	Inventory properties that might be good opportunity sites for potential public/private catalyst projects.	Public control of a property by the City, TIF agency, or other public agency provides the public with a valuable incentive with which to forge a public/private deal that provides public benefits that a private development might not. Examples include incentivizing the developer to build at greater density, mixed uses, design elements, transit-oriented or other design elements, and other public goods.
5	Confirm the capacity in the BLI	Evaluate in greater detail the development readiness of the current site inventory in the BLI, including issues such as infrastructure availability, wetland and/or environmental restrictions, or brownfields.

POLICY AND CODE STRATEGIES		
6	Continuing to improve and streamline development regulations and review processes where possible, to reduce cost and time, and provide predictability.	The community and city work to be development and employer friendly.
7	Ensure that applicable Comp Plan designations and zoning allow the mix of uses sought in employment areas, and if necessary, limit those uses that do not contribute to goals.	Ensure that the desired zones are in place and permit the uses that are foreseen in the City's existing and future employment areas. Where current zoning does not match the vision, consider rezoning, or amending zone standards.
8	Review and update Development Code language to support the desired development types and patterns.	A review of code standards can reveal where the adopted standards for elements like building height, setbacks, floor-area-ratio, parking, etc. may be posing difficulties in achieving feasible development in the target industries. Some large commercial businesses and industrial users may benefit from more flexibility in site and building design to allow for creative design solutions and make projects more feasible.

TARGET INDUSTRIES AND BUSINESS DEVELOPMENT		
CORE INITIATIVE		
	Actions	Notes
SUPPORT AND EXPAND EMPLOYMENT IN TARGETED INDUSTRIES		
9	Adopt and regularly update target industry profiles.	Industry patterns can change significantly over time, and target industries should be assessed regularly. This may include shifts in the targeted industries and changes in site requirements for targeted industries.
10	Maintain and enhance business outreach and communication.	Coordinate business cluster and employment district networking opportunities. Participate in efforts of major regional economic development partners. Potential actions in support of this strategy include developing and updating marketing materials, attending industry trade shows, following up on referrals by partner organizations, publicizing the success of local businesses, and highlighting competitive advantages of the area for proposals.
11	Develop a marketing plan to attract businesses within the identified target industry business sectors.	Assemble and distribute materials of specific interest to targeted industries and identify key industry groups.
12	Support and engage regional and statewide partners.	Regularly meet and coordinate with groups such as the Westside Economic Alliance, Greater Portland Inc. (GPI), and Business Oregon. Promote available employment space and land.

13	Regularly update Oregon Prospector to promote available employment space and land to site selectors.	Business Oregon provides the Oregon Prospector tool which provides open, free data on available employment lands across the state, including both industrial and commercial properties. Ensure that all key sites are listed, and information is accurate and up to date.
14	Promote locally available tools: Enterprise Zone and Urban Renewal Grant Programs.	In all site listings and marketing materials, ensure that the benefits of the existing zones are mentioned where applicable.
SUPPORT SMALL BUSINESS DEVELOPMENT		
15	Develop and/or market programs to assist emerging and under-capitalized firms	Technical assistance, micro loans, storefront improvement programs, master leases, and credit enhancement. Refer businesses to partner agencies providing grants, training, and other programs.
16	Evaluate the development of incubator space or shared or collective space.	A shared work or incubator space, often affiliated with a college, economic development agency, or other agency, to provide space for small but promising companies to work and collaborate in a subsidized environment while they grow. These provide small spaces for professionals or craftsmen to work and share tools and knowledge, to incubate new businesses. This can also provide options for remote workers.
17	Connect small business opportunities with property owners.	The City can serve as a clearinghouse or matchmaker, matching business needs with local property owners. This could include food carts, which can serve as an incubator for future food service tenants. Consider using public land for food carts, artisan/craft fairs, or similar options that can support emerging businesses.
WORKFORCE INITIATIVES		
18	Support connections between local industry, K-12, PCC, and state education and training courses.	Help match training programs to employers, potentially coordinating internships, or regular interaction with local businesses. Ensure that these programs address target industries and stay up to speed on rapidly evolving industry norms and technology. Employers often report finding qualified workers to be a key challenge.
19	Promote workforce training resources.	Increase knowledge of existing resources for job seekers.
20	Ensure the housing policies allow for an appropriate mix of housing for the local workforce.	The community should strive to provide the full range of housing types and price points to meet the needs of the full workforce and encourage residents to both live and work in Forest Grove. This can include support for local affordable housing developers.
21	Prioritize childcare as a workforce readiness issue.	Childcare is a commonly identified need for working households. This topic is increasingly raised as an important part of attracting and maintaining an available workforce. Home-based childcare businesses are also usually a category of self-employment.

APPENDIX A: INDUSTRY SITE REQUIREMENTS

This section presents a series of tables that summarize key site requirements for a range of prospective tenant types.[6] This is followed by further discussion of needs for some industry sectors relevant to the local market.

The 14 site requirements listed on the matrix provide a basis for establishing a profile of the physical and other site needs of the identified industry. The site requirements are intended to address the typical needs of each of the industry categories, and it is recognized that there will likely be unique or non-typical needs of a specific user that will need to be evaluated on a case-by-case basis.

The following describes a few general requirements that apply to *all* industry type categories under consideration and then an overview of the 14 site requirements listed on the matrix.

GENERAL REQUIREMENTS:

- The underlying zoning on the site must allow the use outright within the identified category. For example, no zone change, conditional use, and/or similar land use review is necessary. Many jurisdictions typically require a design or development review which is acceptable, since the timeframe for obtaining such design-related approvals will be addressed in the State's rating system.
- The site under consideration must be located geographically within a UGB.
- The site is not located within a 100-year floodplain as mapped by FEMA, although sites with approved FEMA map amendments (e.g., LOMA & LOMR) are acceptable.
- The net contiguous developable area (NCDA) of the site does not include hazardous contaminants as verified by a Level 1 Environmental Report, or a Level 2 Report that has received a No Further Action approval from DEQ; or existing wetlands or other natural features which are regulated at the State, Federal or local level; or federally endangered species.
- The NCDA does not contain any cultural or historical resources that have been identified for protection at the State, Federal or local level.
- The NCDA does not have mitigation plans that can be implemented in 180 days or less.

SITE REQUIREMENTS:

1. **Total Site Size:** The site size is taken to mean the size of the building footprint and includes buffers, setbacks, parking, mitigation, and expansion space.
2. **Competitive Slope:** Most industrial uses require relatively large building footprints that do not accommodate steps in floor slabs, and sloping topography will require extensive excavation and retaining systems that increase development cost over flat sites. The figures given are the preferred maximum average slope across the developable portion of the site, recognizing that sites with additional area outside the building, or developments with multiple building pads, generally will have lower slope earthwork costs than sites with limited space outside the building footprint.
3. **Trip Generation:** Sites are frequently limited by a jurisdiction to a specified total number of vehicle trips entering and exiting the site. This site requirement is an estimate of the minimum number of average daily trips per acre (based on the range of building coverage) that should be available for each of the industrial categories based on the Institute of Traffic Engineers (ITE) Manual-Ninth Edition. The following table lists

[6] Business Oregon, Mackenzie.

the ITE codes used to estimate average trips for the industry profiles represented in the matrix.

4. **Miles to Interstate or Freight Route:** With few exceptions, access to major freeways or freight routes is critical for the movement of goods. This site requirement indicates the typical maximum distance, in miles, from the site to the freeway or highway access. The roadways/intersections between the site and freeway/highway must generally operate at a level of service 'D' or better in accordance with the Highway Capacity Manual methodologies and general engineering standards.
5. **Miles to Frequent Transit Service: Businesses** located walking distance (within one-quarter of a mile) to a bus stop that is serviced by a frequent bus line enjoy a competitive advantage over others that are more limited in transportation access options.[7]
6. **Railroad Access:** The need for access to railroad for the movement of goods within each industrial category is dependent upon individual users, so the site requirements are identified as either "Preferred," "Not Required," or "Avoid" in some cases where the presence of rail may be considered a deterrent to business.
7. **Proximity to Marine Port:** The need for access to a marine port for the movement of goods within each industrial category is dependent upon individual users.
8. **Proximity to International/Regional Airport:** The need for access to a regional airport for the movement of goods or business travel within each industrial category is dependent upon individual users.
9. **Availability of Water:** This requirement indicates the minimum sizes of domestic water and fire lines immediately available to the site. In certain rural cases, a comparable supply from an on-site water system (i.e., well or reservoir with available water rights) may be acceptable. In addition to lines sizes, preference for high-pressure water capabilities and average flow demand in gallons per day is specified for each industry type.
10. **Availability of Sanitary Sewer:** This requirement indicates the minimum size of public sanitary sewer service line immediately available to the site. In certain rural cases, an on-site subsurface system providing a comparable level of service may be acceptable. Sewer flow requirements were determined by calculating a percentage of the water flow for each industry type.
11. **Natural Gas:** This requirement indicates the minimum size natural gas line that is immediately available to the site. It is assumed that the pressure demand for all industry categories is 40-60 psi.
12. **Electricity:** This requirement indicates the minimum electrical demand readily available to each industry and where proximity to a substation and redundancy dependency rank on the continuum of less critical to more critical. Estimated demand is based on review of existing usage from local utility providers, referencing industrial NAICS codes for the various profiles.
13. **Telecommunications:** This requirement indicates whether the availability of telecommunication systems is readily available, and where major commercial capacity, route diversity and fiber optic lines rank on the continuum of less critical to more critical. All sites are assumed to have a T-1 line readily available.
14. **Special Considerations:** Notes on industry-specific factors.

[7] We have defined "frequent bus line" as one with service occurring in no longer than 15 minute intervals.

	CRITERIA / PROFILE		A	B	C	D	E	F	G	H	I	J
			Computer & Electronic Manufacturing (High-Tech R&D)	Software & Media	Multi-Tenant Office	Food Processing	Other Manufacturing	Life/Bioscience R&D Campus	Wholesaling	Retail	Data Center	Incubator
	GENERAL REQUIREMENTS		Use is permitted outright, located in UGB or equivalent and outside flood plain; and site (NCDA) does not contain contaminants, wetlands, protected species, or cultural resources or has mitigation plan(s) that can be implemented in 180 days or less.									
	PHYSICAL SITE											
1	TOTAL SITE SIZE*	Competitive Acreage**	5 - 100+	5 - 15	5 - 20	5 - 25+	5 - 50+	20 - 100+	10 - 100+	5 - 20	10 - 100+	5 - 25+
2	COMPETITIVE SLOPE:	Maximum Slope	0 - 5%	0 - 7%	0 - 7%	0 - 5%	0 - 5%	0 - 7%	0 - 3%	0 - 7%	0 - 7%	0 - 5%
	TRANSPORTATION											
3	TRIP GENERATION:	Average Daily Trips per Acre	40 - 60	80 - 200[1]	120 - 240[2]	50 - 60	40 - 50	60 - 150	50 - 60[3]	400 - 500[4]	20 - 30	40 - 50
4	MILES TO INTERSTATE OR FREIGHT ROUTE:	Miles	w/in 10	w/in 5	w/in 5	w/in 30	w/in 20	w/in 5	w/in 5	w/in 5	w/in 30	N/A
5	MILES TO FREQUENT TRANSIT SERVICE (15 MIN OR LESS)	Miles	0.6	0.5	0.8	< 0.1	0.2	0.1	0.3	< 0.1	0.1	< 0.1
6	RAILROAD ACCESS:	Dependency	Preferred	Not Required	Not Required	Preferred	Preferred	Preferred	Preferred	Avoid	Avoid	N/A
7	PROXIMITY TO MARINE PORT:	Dependency	Preferred	Not Required	Not Required	Preferred	Preferred	Preferred	Preferred	Not Required	Not Required	N/A
8	PROXIMITY TO INTERNATIONAL/ REGIONAL AIRPORT:	Dependency	Competitive	Required	Preferred	Preferred	Preferred	Required	Not Required	Not Required	Competitive	N/A
		Distance (Miles)	This criteria cannot be met in Eastern Oregon									

	PROFILE		A	B	C	D	E	F	G	H	I	J
	CRITERIA		Computer & Electronic Manufacturing (High-Tech R&D)	Software & Media	Multi-Tenant Office	Food Processing	Other Manufacturing	Life/Bioscience R&D Campus	Wholesaling	Retail	Data Center	Incubator
	UTILITIES											
9	WATER:	Min. Line Size (Inches/Dmtr)	12" - 16"	6" - 8"	8" - 10"	12" - 16"	6" - 10"	8" - 12"	6" - 10"	8" - 12"	16"	4" - 8"
		Min. Fire Line Size (Inches/Dmtr)	12" - 18"	8" - 10"	8" - 12"	10" - 12"	8" - 10"	8" - 12"	8" - 10"	8" - 12"	10"-12"	6" (or alternate source)
		High Pressure Water Dependency	Required	Not Required	Not Required	Required	Not Required	Preferred	Not Required	Not Required	Required	Not Required
		Flow (Gallons per Day per Acre)	5,200	1,200	1,500	3,150	1,850	2,450	1,200	1,800$_5$	50 - 200†	1,200
10	SEWER:	Min. Service Line Size (Inches/Dmtr)	12" - 18"	6" - 8"	8" - 10"	10" - 12"	6" - 8"	10" - 12"	6" - 8"	6" - 10"	8"- 10"	4" - 6" (or on-site source)
		Flow (Gallons per Day per Acre)	4,700	1,000	2,000	2,600	1,700	2,000	1,000	1,500$_5$	1,000‡	1,000
11	NATURAL GAS:	Preferred Min. Service Line Size (Inches/Dmtr)	6"	4"	4"	4"	4"	6"	4"	4" - 6"	4"	N/A
		On Site	Competitive	Preferred	Competitive	Preferred	Competitive	Competitive	Preferred	Competitive	Preferred	Preferred
12	ELECTRICITY:	Minimum Service Demand	4 - 6 MW	1 - 2 MW	0.5 - 1 MW	2 - 6 MW	0.5 MW	2 - 6 MW	0.5 MW	0.5 - 1 MW	5 - 25 MW	1 MW
		Close Proximity to Substation	Competitive	Competitive	Preferred	Not Required	Preferred	Competitive	Not Required	Preferred	Required, could be on site	Not Required
		Redundancy Dependency	Preferred	Preferred	Preferred	Not Required	Not Required	Competitive	Not Required	Preferred	Required	Not Required
13	TELECOMMUNICATIONS:	Major Communications Dependency	Required	Required	Required	Preferred	Required	Required	Preferred	Required	Required	Preferred
		Route Diversity Dependency	Required	Required	Required	Not Required	Not Required	Required	Preferred	Preferred	Required	Not Required
		Fiber Optic Dependency	Required	Required	Required	Preferred	Preferred	Required	Competitive	Preferred	Required	Not Required

	PROFILE	A	B	C	D	E	F	G	H	I	J
	CRITERIA	Computer & Electronic Manufacturing (High-Tech R&D)	Software & Media	Multi-Tenant Office	Food Processing	Other Manufacturing	Life/Bioscience R&D Campus	Wholesaling	Retail	Data Center	Incubator
14	SPECIAL CONSIDERATIONS:	Acreage allotment includes expansion space (often an exercisable option). Very high utility demands in one or more areas common. Sensitive to vibration from nearby uses.	[1]: Research & Development @ 80 ADTs per acre on the low end, estimated 200 ADTs per acre for general office on the high end. Location specific.	[2]: Range represents FAR 0.25 - 0.5 of office uses. Location to other cluster industries.	May require high volume/supply of water and sanitary sewer treatment. Often needs substantial storage/yard space for input storage. Onsite water pre-treatment needed in many instances.	Adequate distance from sensitive land uses (residential, parks) necessary. Moderate demand for water and sewer. Higher demand for electricity, gas, and telecom.	High diversity of facilities within business parks. R&D facilities benefit from close proximity to higher education facilities. Moderate demand on all infrastructure systems.	[3]: General warehousing rates	[4]: Based on discount warehouse @ 0.25 FAR [5]: Dependent on use, i.e., brewery vs. restaurant. Location to cluster industries.	Site size differs due to land cost and availability. Urban-area centers may require 10-20 acres, while E. Oregon centers will typically use larger sites. Also the trend is towards increasing site size as cloud storage needs continue to increase. Power delivery, water supply, and security are critical. Surrounding environment (vibration, air quality, etc.) is crucial. May require high volume/supply of water and sanitary sewer treatment.	Often established by municipalities and have symbiotic relationships with colleges and/or universities.

Terms:

More Critical ↑ Less Critical	**'Required'** factors are seen as mandatory in a vast majority of cases and have become industry standards.
	'Competitive' significantly increases marketability and is *highly recommended by Business Oregon* . May also be linked to financing in order to enhance the potential reuse of the asset in case of default.
	'Preferred' increases the feasibility of the subject property and its future reuse. Other factors may, however, prove more critical.
	'Not Required' does not apply for this industry and/or criteria.
	'Avoid' factors act as deterrents to businesses in these industries because of negative impacts.

*Total Site: Building footprint, including buffers, setbacks, parking, mitigation, and expansion space.

**Competitive Acreage: Acreage that would meet the site selection requirements of the majority of industries in this sector.

† Data Center Water Requirements: Water requirement is reported as gallons per MWh to more closely align with the Data Center industry standard reporting of Water Usage Effectiveness (WUE).

‡ Data Center Sewer Requirements: Sewer requirement is reported as 200% of the domestic usage at the Data Center facility. Water and sewer requirements for Data Centers are highly variable based on new technologies and should be reviewed on a case-by-case basis for specific development requirements.

Source: Business Oregon, Mackenzie