

**CITY OF BEAVERTON
ECONOMIC OPPORTUNITIES ANALYSIS
(OREGON STATEWIDE PLANNING GOAL 9)**



**Prepared by Johnson Economics
July 2015**



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I. INTRODUCTION

This report introduces analytical research presenting an Economic Opportunities Analysis (EOA) for the City of Beaverton. The report fills the requirements of statewide Planning Goal 9, specifically OAR 660-009, which describes the EOA as:

"The economic opportunities analysis must identify the major categories of industrial or other employment uses that could reasonably be expected to locate or expand in the planning area based on information about national, state, regional, county or local trends."

Cities are required to reconcile estimates of future employment land demand with existing inventories of vacant and redevelopable employment land within the Urban Growth Boundary. The principal purpose of the analysis is to provide an adequate land supply for economic development and employment growth. This is intended to be conducted through a linkage of planning for an adequate land supply to infrastructure planning, community involvement and coordination among local governments and the state.

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

- **Economic Trends:** Provides an overview of national, state and local economic trends affecting Beaverton, including population projections, employment growth, retail trends and a demographic profile.
- **Target Industries:** Analysis of key industry typologies the City should consider targeted 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 the City of Beaverton's Urban Service Boundary (USB).
- **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.
- **Recommendations:** Summary of findings and policy implications

III. EXECUTIVE SUMMARY

The City of Beaverton is a first tier suburb within the Portland-Vancouver metropolitan area. While the City has excellent locational attributes, its land supply has largely been developed in previous business cycles, at densities that reflected market conditions at the time of development. As a result, the City's capacity for future employment growth is largely represented by redevelopment opportunities. This type of development is inherently difficult to achieve, as current improvements typically have significant economic value.

The City of Beaverton has seen strong population growth, although the rate of growth in recent years has been moderated due to supply constraints. The City added 13,674 new residents from 2000 through 2010 (1.7% average annual growth rate, or AAGR), and an additional 3,592 from 2010 through 2014 (1.0% AAGR). Beaverton's population is relatively young and well educated, with an unusually high concentration of residents in the 25 to 34 age cohort. The City also benefits from a strong and market-recognized school district, which increases the area's ability to attract a quality work force.

Performance has varied substantively by industrial sector within the City of Beaverton USB during the recent recession and subsequent recovery period. During the recession, the Manufacturing, Retail, and Construction sectors were hit the hardest, accounting for 55% of net job losses. Health Care and Education were the only two sectors that did not decline during the recession. Across all industries, some have recovered much stronger than others. In addition to Education and Health Care, four other sectors (Professional & Business, Wholesaling, Leisure & Hospitality, and Transportation, Warehousing & Utilities) have recovered fully and have exceeded pre-recession employment levels.

Our analysis included an investigation of how industries are organized with respect to their cross industry linkages. Excluding service industries, we classified all firms with 15 or more employees by their economic function. This covered over three-quarters of all employment in the study area. Industry class was used to aggregate smaller firms. We organized the local economy into six distinct target industry clusters: activewear; media, advertising and film production; software and information technology; high-tech manufacturing; business support and back office operations; and medical device, health care, and biotechnology.

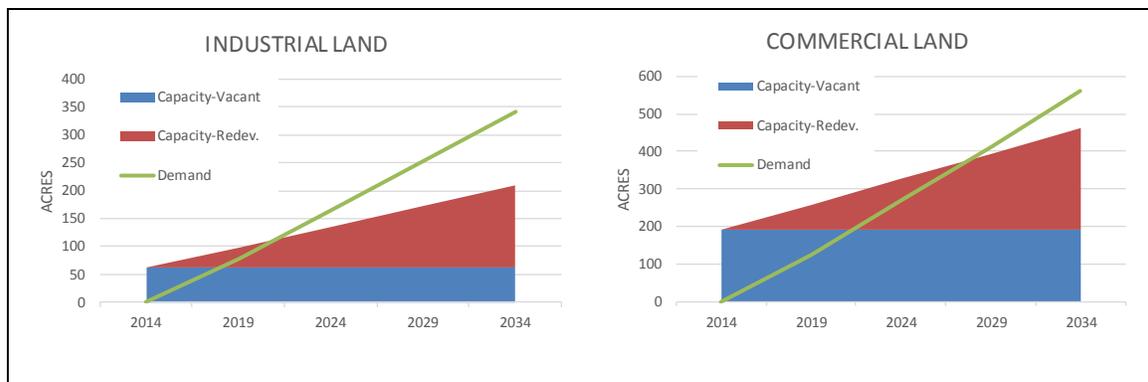
Employment forecasts by industrial sector were converted to projected employment by development typology, converted to square footage of space demand and then translated into associated acreage needs. The resulting forecasted employment land need is for over 900 acres over a twenty year horizon, of which 342 is for industrial uses and 561 for commercial uses.

| Category Building Type | Five-Year Demand | | Twenty-Year Demand | |
|------------------------------|------------------|--------------|--------------------|--------------|
| | Square Feet | Acres | Square Feet | Acres |
| Industrial | | | | |
| <i>Flex</i> | 338,087 | 23.9 | 1,506,315 | 106.4 |
| <i>General Manufacturing</i> | 355,108 | 25.1 | 1,566,181 | 110.6 |
| <i>Warehouse</i> | 403,199 | 28.5 | 1,773,318 | 125.2 |
| <i>Total-Industrial</i> | 1,096,393 | 77.4 | 4,845,814 | 342.1 |
| Commercial | | | | |
| <i>Retail</i> | 786,079 | 53.5 | 3,513,706 | 239.0 |
| <i>Office</i> | 885,879 | 50.5 | 4,029,124 | 229.8 |
| <i>Institutional</i> | 526,493 | 20.3 | 2,401,179 | 92.5 |
| <i>Total- Commercial</i> | 2,198,451 | 124.3 | 9,944,009 | 561.2 |
| Overall Total | 3,294,845 | 201.7 | 14,789,824 | 903.4 |

The City of Beaverton’s capacity for additional employment growth is affected by a limited supply of vacant property. The remaining capacity is largely associated with likely redevelopment of properties with relatively low current improvement values. These include older structures as well as a significant number of older industrial parks that have the potential to increase their intensity of use over time.

The City’s recently completed Buildable Lands Inventory (BLI) shows a total of 392 vacant acres within the City’s USB, representing 10.5% of the total inventory of sites zoned for employment uses in the area. The vacant inventory includes a total of 419 parcels with an average size of 0.9 acres. The inventory includes only one vacant parcel greater than 25 acres in size, and one site between 10 and 25 acres in size. The City of Beaverton accounts for 65% of developed acreage, and 58% of vacant acreage within the USB. In terms of vacant land, approximately 11.8% of the land within the USB is undeveloped, compared to 10.6% within the city boundary.

Under the assumed employment growth scenario, the capacity within the USB is insufficient to accommodate the projected aggregate twenty year needs for both commercial and industrial uses. The reconciliation of projected employment needs and available capacity results in a projected shortage of a total of 132 acres of industrial land and 100 acres of commercial property by 2034.



The preceding charts assume that all vacant property is available, and that redevelopment capacity will be consumed over time during the 20-year planning period. As illustrated, the projected capacity shortfall is most pronounced for industrial land, with the current capacity likely to be adequate to meet needs in the

near-term (five-year horizon), but unlikely to meet longer term needs. Commercial capacity can accommodate projected demand for a longer period of time. Redevelopment capacity is not typically counted in determining short-term needs, as existing developed sites are often difficult to develop and not readily available. Taking redevelopment capacity out of the equation results in a short-term supply deficit for industrial land in the USB.

Of the target industries identified, only activewear and apparel and high-tech manufacturing are likely to have highly specific site requirements. For high tech manufacturing, the city's lack of large sites will likely limit potential for this target industry, but even without a major new anchor manufacturer, Beaverton is well positioned to benefit from the expansion of support industries associated with the high tech cluster.

Recommended strategies to foster economic development in the future include support for quality of life issues, as well as more directed economic development actions. It is important to recognize that the community's quality of life is a key economic development advantage, and efforts to retain and improve local attributes are supportive of economic development goals. Strategies to support and accommodate local employment growth include a focus on target industries to maximize efficient utilization of the City's limited capacity over time. While the City has a goal to maintain its current share of regional employment, this will be highly challenging due to the City's capacity constraints.

IV. ECONOMIC TRENDS

This report section summarizes long and intermediate-term trends at the national, state, and local levels that will influence economic conditions in Beaverton over the 20-year planning period. This section is intended to provide an economic context for growth projections and establish a socioeconomic profile of the community. This report’s national evaluation has a focus on potential changes in structural socioeconomic conditions both nationally and globally. Our localized analysis considers local growth trends, demographics, and economic performance. The content contained herein is consistent with OAR 660-009-0015(1).

NATIONAL TRENDS

The most commonly used primary metric by which economic prosperity is evaluated is real gross domestic product (GDP) per capita, based on the principle that increased purchasing power of the population translates into greater investment in health care, education, housing, leisure, and many other factors¹. Interestingly, the U.S. economy has exhibited surprisingly stable real GDP per capita growth with relatively little variability. Spanning over a 100+ year period, only modest and temporary deviations from an average 1.8% growth rate have been exhibited in any given decade². This stability has occurred despite considerable shifts in economic and social conditions—suggesting long-term economic growth has structural underpinnings relating to demographics and investment in physical and human capital (Elwell 2006). In other words, monetary, economic, and fiscal policy may influence growth in relation to potential economic output of a given business cycle, but long-term growth stems out of capital investment, demographic conditions, and global influences.

Considering this preface, this section of our analysis provides a foundation of how these factors can be expected to influence economic conditions on national and local scales during the planning period.

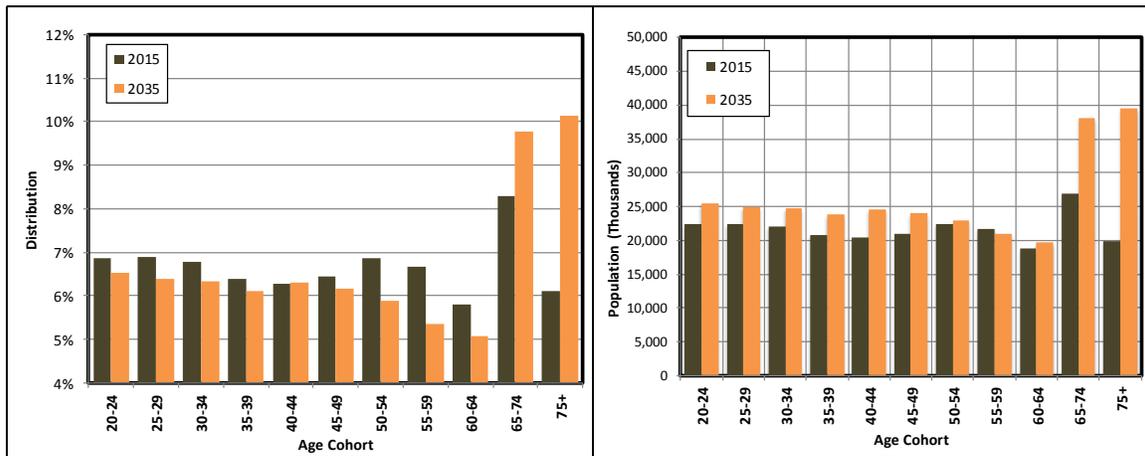
Demographic Factors and Labor Force Participation

The aging of the Baby Boomers into their retirement years will perhaps be the greatest challenge to the U.S. economy over the planning period. By 2035, the share of the population age 65 and over will have grown to 21% from 14.5% today. Despite the fact that an increasing number of Boomers expect to work at least part time past age 65, the impact of this demographic shift on the labor force participation rate, and by extension potential output, will be considerable. Such a demographic shift will undoubtedly reduce the size of the workforce considerably over the next 20 years.

¹ We acknowledge however that many other factors influence quality of life, such and social and economic equality, crime, environmental factors, etc.

² Elwell, Craig. CRS Report to Congress: Long-Term Growth of the U.S. Economy: Significance, Determinants, and Policy (2006).

FIGURE 4.1: DISTRIBUTION OF THE RESIDENT POPULATION BY AGE, UNITED STATES (2015)



SOURCE: U.S. Census Bureau, American Community Survey

Boomers, however, are not the whole story. Labor force participation is also likely to shift within some cohorts. On the positive side, persons aged under 25 years, discouraged in recent years by a dismal labor market, fled to colleges and universities across the country. The enrollment rate for 18-24 year olds increased from 37.3% to 42.0% between 2006 and 2011³. They are expected to return with vigor and an enhanced productive capacity from their educational endeavors. However, growth in the labor force participation rate among women in their most productive working years (25-54), a segment that has grown steadily over the last half century, has likely reached its peak. To a lesser degree, labor force growth will also be modestly tempered by changes in people’s economic incentives associated with the Affordable Care Act (ACA)⁴. According to the Congressional Budget Office, the ACA will reduce total hours worked by 1.5% to 2.0% through their 2024 estimate.

Over the near-term, an improved economic landscape and positive wage pressure will incentivize a return to the workforce for some workers, narrowing the gap between actual and potential output. However, the aforementioned structural factors will generally limit long-term growth in productive capacity to a rate below that exhibited in previous expansions.

Global Impacts on Migration

Rising globalization has driven growth in emerging economies over the last twenty years, specifically in China, Southeast Asia, India, Latin America and some African countries. This growth has increased incomes and purchasing power in many parts of the world. With incomes in emerging economies expected to grow at an accelerated rate relative to the U.S. over at least the next 50 years, the differential between domestic and foreign incomes and standards of living will certainly decrease.

While improved incomes will undoubtedly result in a reduction in poverty in emerging countries accompanied by an increasing global demand for goods and services (some of which are produced in the United States), they will also reduce the competitive labor advantages of those nations. Many who otherwise would choose to immigrate to the U.S. for better opportunities will begin to find those

³ National Center for Education Statistics, Digest of Education Statistics (2013)

⁴ Congressional Budget Office, The Budget and Economic Outlook: 2014 – 2024 (Feb 2014).

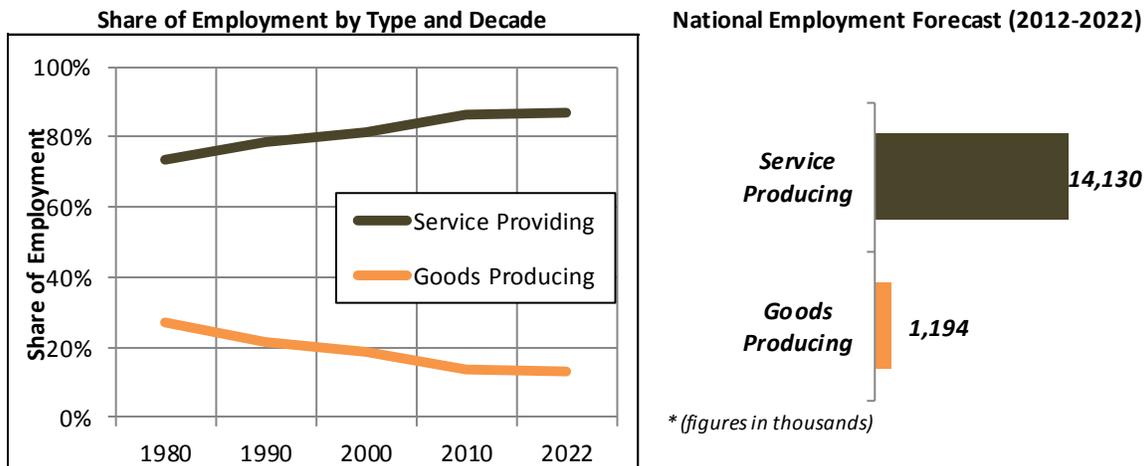
opportunities at home—resulting in lower rates of international migration to the U.S. Over the last 25 years roughly 35% of population growth in the U.S. was derived from international migration⁵.

Taken together with domestic demographic trends, the U.S. labor force could be facing the dual impacts of an aging population *and* lower migration. One estimate suggests these combined factors could result in a 15% reduction of the domestic labor force by 2060⁶. In this context, future gains in per-capita GDP will be increasingly dependent on gains in productivity, skills, innovation, and technical knowledge. In a way, this shift will favor U.S. economic strengths; provided the United States maintains its competitive advantage in education and innovation.

Shifting Industrial Patterns

The pressure on innovation to drive growth will continue to support the on-going shift in domestic industrial composition. Over the next ten years, service providing industries⁷ are expected to account for 92% of non-agricultural wage and salary growth in the United States⁸. This condition will continue the trend of a higher composition of employment in the United States concentrated in service oriented sectors.

FIGURE 4.2: EMPLOYMENT BY TYPE, UNITED STATES



SOURCE: Bureau of Labor Statistics

Reshoring Prospects

The offshoring trend that occurred over the last half-century saw firms capitalize on the cost advantages of labor and to some extent materials in foreign markets, resulting in a shift in production and investment abroad. This phenomenon extended beyond production activities and into some back office functions (i.e. call centers, IT Services, etc.) to shift millions of jobs abroad.

This offshoring trend began to decline over the last decade, with companies facing mounting challenges to their offshore production functions. This has led many economists to speculate on the prospects of a

⁵ Migration Policy Institute tabulation of data from the United Nations, Department of Economic and Social Affairs (2013).
⁶ OECD (2014), "Shifting Gear: Policy Challenges for the next 50 Years", OECD Economics Department Policy Notes, No. 24 July 2014.
⁷ The seven service industries are: Professional and Business Services, Education and Health Services, Financial Activities, Trade/Transport/Utilities, Leisure and Hospitality, Financial Activities, Information, and Other Services
⁸ Bureau of Labor Statistics, Occupational Employment Projections (2012-2022)

pending renaissance of manufacturing activity in America. For example, a recent study by the Massachusetts Institute of Technology found that 33% of surveyed companies were considering moving some production activities back to the U.S.⁹ It is almost certain that some level of reshoring of manufacturing activities is likely to occur over the next few business cycles.

The most commonly cited production challenges are a deterioration of labor cost advantages and increasing times to market. Moreover, many manufacturing processes are exhibiting an increasing reliance on more technically skilled labor—a challenge to foreign production. Other issues such as value chain management, intellectual property rights, and political stability are added concerns (Simchi-Levi 2012).

Domestically, firms looking to reshore are finding labor force availability to be the primary limitation. Further, the regulatory process and costs for getting production facilities up and running are considerably higher. This in particular is a constraint exhibited locally in the context of limited industrial land availability¹⁰.

In the end, reshoring is likely to occur, but will be limited to sectors where it is most advantageous. Firms with low labor force utilization in their production activities that can capitalize on the United States' growing energy advantage will see the biggest shift. Firms with less reliance on foreign demand will also be a factor. Generally, these industries include, (but are not limited to) early value chain products such as metals, glass, chemicals, machinery, plastics, and some technology products.

Global Factors Influencing Growth

In addition to the aforementioned conditions, the following global dynamics are expected to influence economic conditions nationally and locally over the planning period.

- Concurrent with the narrowing of cross-country economic gaps and potential adoption of the Trans-Pacific Partnership, trade linkages between nations are likely to increase, resulting in a rise in global value chain linkages. This will influence global demand for domestic products as well as the balance of trade between the United States and its trading partners.
- Rising global demand is expected to benefit the primary sectors of resource rich countries to the greatest degree. This bodes well for U.S. energy and agricultural markets, provided the U.S. can keep pace with supporting export capacity.
- An ancillary benefit of rising global interdependency is a dilution of risk associated with domestic shocks, a product of which should lead to greater global stability.

Other Factors Influencing Growth

- Increased life expectancy along with demographic shifts will continue to support growth in demand for health care services while placing additional pressure on the transfers of income necessary to support federal obligations for Social Security and Medicare.

⁹ Simchi-Levi. *Supply Chain Digest*, Massachusetts Institute of Technology 2012.

¹⁰ Value of Jobs Coalition, Land Availability Limited Options (2012)

- The impacts of lower international migration could adversely impact innovation in America. Immigrants were twice as likely to start a business compared to domestic residents¹¹. This is especially the case in the high-tech sector where 25% of U.S. technology and engineering companies started over the last 20 years had at least one immigrant founder¹².
- Lower domestic energy costs, specifically derived from natural gas, are expected to increase manufacturing competitiveness in some industries. As it exists today, export capacity and Oceanic transport of natural gas is limited, making domestic supply increases largely captive—a condition that is likely to persist for some time given identified reserves. As a result, natural gas is expected to maintain a cost advantage over the planning period. Industries that can capitalize on this shift (and their supply chain derivatives), including power generation, fleet transportation, chemicals, and metals are in the best position to increase cost competitiveness.
- Global Climate Change has the potential to reduce global GDP by as much as 1.5% and almost 6% in Southeast Asia if unmitigated (Elwell 2006).
- The negative impacts of the “Great Recession” will be long lasting on potential output. Over the intermediate-term potential output will grow at a rate below average due to deterioration of skills from the long-term unemployed (those out of work for longer than a year).

OREGON TRENDS

Factors affecting growth in the State of Oregon can be evaluated in the context of broad economic conditions previously discussed. Here, we consider some of these factors, among others. Further, this section draws on some observations explicitly addressed in the Oregon Office of Economic Analysis’ (OEA) most recent economic forecasts¹³.

Urbanization: Within Oregon, the broader trend of increased urbanization is likely to continue. A larger share of the world’s population is living in urban areas and Oregon is no different. The share of Oregon residents living in the Willamette Valley is expected to reach 71% by 2040¹⁴. While the City of Beaverton has constraints in terms of readily developable residential property, continued pressure from growth is expected to support higher levels of redevelopment and infill over time.

Housing: Oregon should maintain its competitive advantage in housing and cost of living in relation to other west coast markets such as San Francisco and Seattle. While expectations were that housing investment and construction would provide a greater contribution to Oregon’s emergence from the Great Recession, the housing market has seen only moderate growth. The sales of existing homes and new construction activity remains well below normal levels, while foreclosures and long-term delinquency rates remain somewhat elevated.

¹¹ Kaufman Index of Entrepreneurial Activity

¹² Wadhwa, Vivek, et al. *America’s New Immigrant Entrepreneurs*, 2007

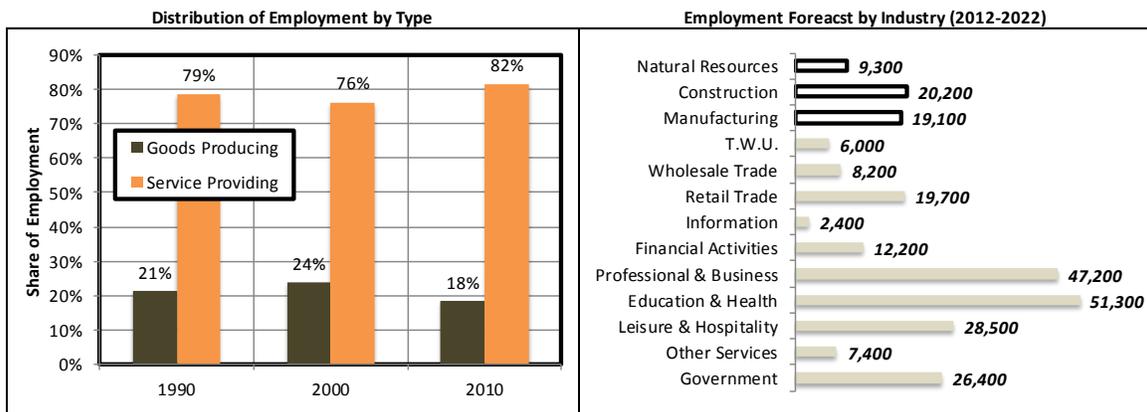
¹³ Oregon Office of Economic Analysis, “Oregon Economic and Revenue Forecasts (June 2014 and June 2015).

¹⁴ Oregon Office of Economic Analysis: Demographic Forecast (2012)

Even as the housing market recovers, new supply entering the market has not kept up with demand and housing affordability is becoming a larger risk to the outlook. Expectations are that new construction will pick up over the next three years, responding to increasing demand, which will alleviate price pressures. However, to the extent that supply does not match demand, home prices and rents increasing significantly faster than income or annual for the typical household is a major concern.

Shifting Industrial Composition: Oregon has experienced a decades-long shift away from natural resource based industries toward more value-added manufacturing activities such as technology, machinery, equipment, and fabricated metals. This trend is expected to continue. More so, Oregon should continue to follow the national trend of growth in service-oriented industries outpacing goods production. The City of Beaverton has been a beneficiary of this trend, as the local economy is strong in many of these sectors.

FIGURE 4.3: 10-YEAR EMPLOYMENT FORECAST BY INDUSTRY SECTOR, STATE OF OREGON (2012-2022)



SOURCE: Oregon Employment Department

Exports: With port capacity and a location along the Pacific Rim, Oregon is well positioned to build global markets and increase exports considerably. Oregon exports are primarily concentrated in computers & electronics, equipment and machinery, and agriculture. China and Canada are Oregon’s major trading partners, with Japan, Korea, and Malaysia also accounting for a measurable share. The Portland Metropolitan Area has the highest export intensity in the United States (24.4% of GDP compared to 13.2% nationally). The Portland region has established a strategy to double exports in five years¹⁵. The City of Beaverton and broader Urban Service Area include major export firms in apparel, information and advanced manufacturing. These sectors are discussed in more detail in the target industries discussion.

FIGURE 4.4: METRO AREA EXPORT VALUE

| Country | Export Value (in Millions) |
|-------------|----------------------------|
| China | \$3,381 |
| Canada | \$3,142 |
| Malaysia | \$1,860 |
| Japan | \$1,525 |
| South Korea | \$995 |

Source: U.S. Census Bureau

¹⁵ Brookings Institute. Greater Portland Export Plan (2012)

Green Technology: Among the strategic opportunities Oregon enjoys is leading growth in green energy and technology. The initiative to increase energy efficiency, reduce carbon emissions, and develop alternative means of energy has resulted in increased investment across a range of industries. Oregon has competitive advantage in many of these arenas, including biofuels, wind and wave energy, and solar energy. The extent to which these industries can achieve stabilized competitiveness through scale and/or technological advance will influence local opportunities. Beaverton’s strength in advanced manufacturing and high tech are consistent with these types of opportunities.

Other Long-Term Advantages: Oregon holds many other long-term competitive advantages on both a national and global scale, including but not limited to its relatively low electricity costs, strategic economic location on the Pacific Rim and proximity to Vancouver B.C., California, and Asia. Relative to these markets communities in Oregon boast clean water supplies, cost of living advantages, and lower space rents.

Economic Risks

The economic outlook for Oregon is not without risks, particularly over the long-term planning period. Those risks recently identified by the June 2014 OEA forecast include:

Federal Fiscal Policy—On-going effects of the 2013 spending reductions and sequester. Oregon has minimal risk due to low federal presence.

Housing Market Recovery—In the near-term housing is expected to be a catalyst for growth to achieve acceleration out of recent lackluster economic growth. Rising interest rates, stringent credit, and low inventories threaten the breadth of housing investment.

European Debt—While domestic credit markets are easing, problems in the Eurozone persist, with the threat of financial market contagion not fully abated.

Commodity Prices—While trending downward, commodity prices remain high and any demand driven commodity price inflation would threaten global expansion.

Other Global Spillovers—Political stability in the Middle East, Ukraine, and Israel, viral outbreaks or health crises in West Arica, growth in the Chinese economy, and inflation in emerging markets.

Real Wage Growth—Oregon’s growth in real wages has been stagnant for over a decade. Flat wages deteriorate relative purchasing power as well as threaten Oregon’s ability to attract the strongest workers.

LOCAL TRENDS

Local economic growth over the planning period will be, in part, functionally representative of demographic and economic trends observed locally and in the region. A review of these conditions provides a useful context for establishing a baseline expectation of future growth in Beaverton. In this section we consider

local demographic and workforce conditions, recent business activity, and the overall performance of the economy in recent years.

Population Growth

During the decade from 2000-2010, the City of Beaverton added over 13,600 new residents at a rate of roughly 1.7% per year. This rate was roughly consistent with the county level trend, and considerably higher than state level trends. In the first four years of the ensuing decade, growth across all three geographies has been more moderate, with the rate of growth in Beaverton decreasing most significantly. This can be attributed to several factors, among them the lackluster recovery of the economy and Beaverton’s lack of land/lots for housing expansion. In the current market Beaverton has only 339 vacant single-family lots available for development¹⁶. The City’s current Buildable Lands Inventory shows a total capacity of 950 additional single family units on vacant property, of which 611 are located in the South Cooper Mountain planning area. An additional capacity of 1,258 units is expected on infill/developed land.

FIGURE 4.5: RECENT POPULATION GROWTH TRENDS, OREGON, WASHINGTON COUNTY, AND BEAVERTON

| | Census | | '00-10 | | Est. 2014 | '10-'14 | |
|-------------------|---------------|---------------|---------------|-------------|---------------|--------------|-------------|
| | 2000 | 2010 | Growth | AAGR | | Growth | AAGR |
| Oregon | 3,421,399 | 3,831,074 | 409,675 | 1.1% | 3,962,710 | 131,636 | 0.8% |
| Washington County | 445,342 | 529,710 | 84,368 | 1.8% | 560,465 | 30,755 | 1.4% |
| Beaverton | 76,129 | 89,803 | 13,674 | 1.7% | 93,395 | 3,592 | 1.0% |

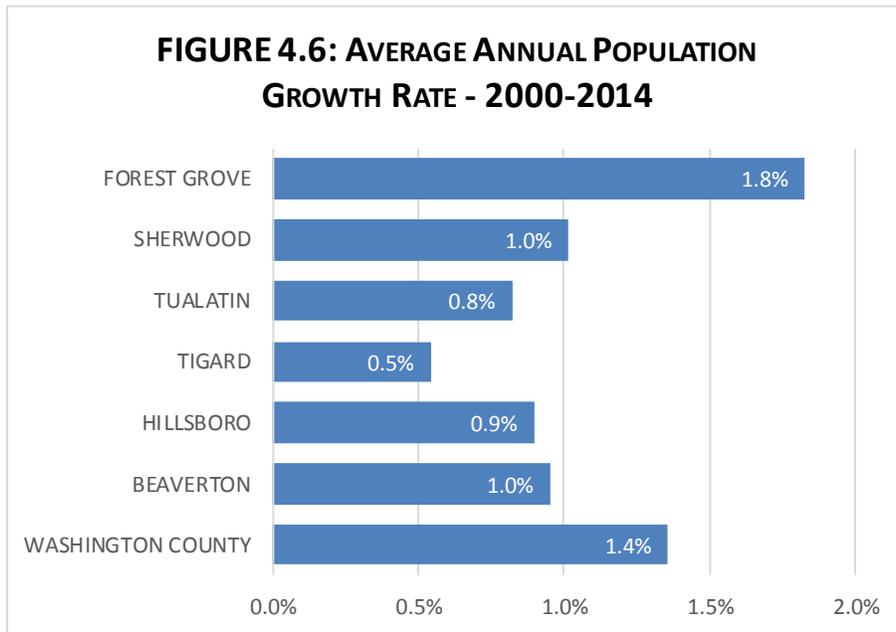
SOURCE: PSU Population Research Center

Migration

A look at migration patterns would suggest that Beaverton’s relatively slow population growth could be largely attributed to housing supply constraints. Regionally over the last three years (2010-2013), Washington County has been among the fastest growing large counties in the region, accounting for 16% of statewide net-migration¹⁷. In other words, while growth has slowed to close to the statewide average in Beaverton, Figure 4.5 suggests that a larger share of population is now going to other communities within Washington County. Other incorporated cities in Washington County are also faced with limited housing inventories, including Tigard, Tualatin, Hillsboro and Sherwood.

¹⁶ New Home Trends, a proprietary third-party data service.

¹⁷ Portland State Population Research Center, Annual Population Estimates (2013)

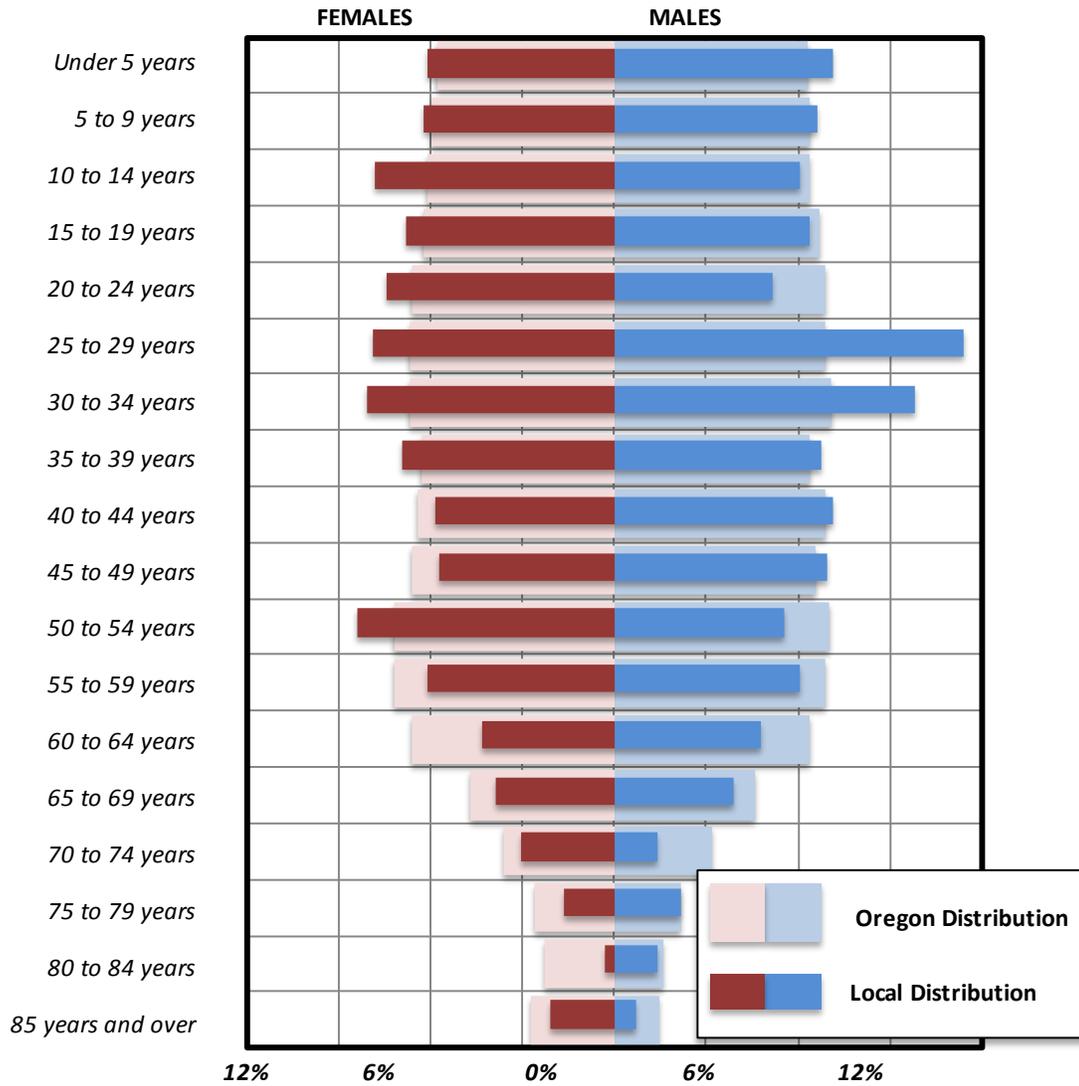


Beaverton’s household composition is another factor in this pattern. The average household size in the City in 2010 was 2.37, compared to a Washington County average of 2.6. Households with two or less persons accounted for 70% of new household growth in Beaverton between 2000 and 2010, while representing 58% of new households in Washington County during the same time period. This has led to a faster growth rate in terms of housing units in Beaverton (2.15 AAGR from 2000 through 2010) than in Washington County (1.87% AAGR) during the same period, despite a slightly higher rate of population growth in Washington County.

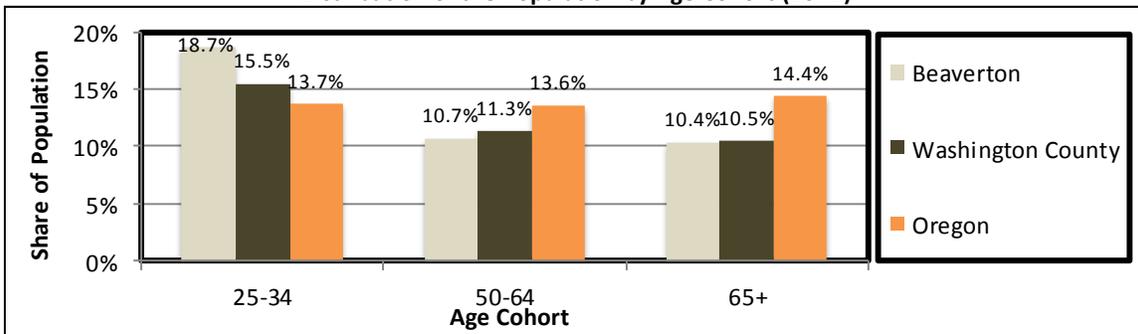
Population Distribution

Beaverton’s population has a generally higher concentration of younger residents relative to the national average. The 25-34 year age cohort accounts for 18.7% of the population compared to only 13.4% nationally. This condition holds true in comparison to state (13.7%) and county (15.5%) levels as well.

FIGURE 4.7: RELATIVE POPULATION DISTRIBUTION, BEAVERTON AGAINST THE OREGON AVERAGE



Distribution of the Population by Age Cohort (2012)

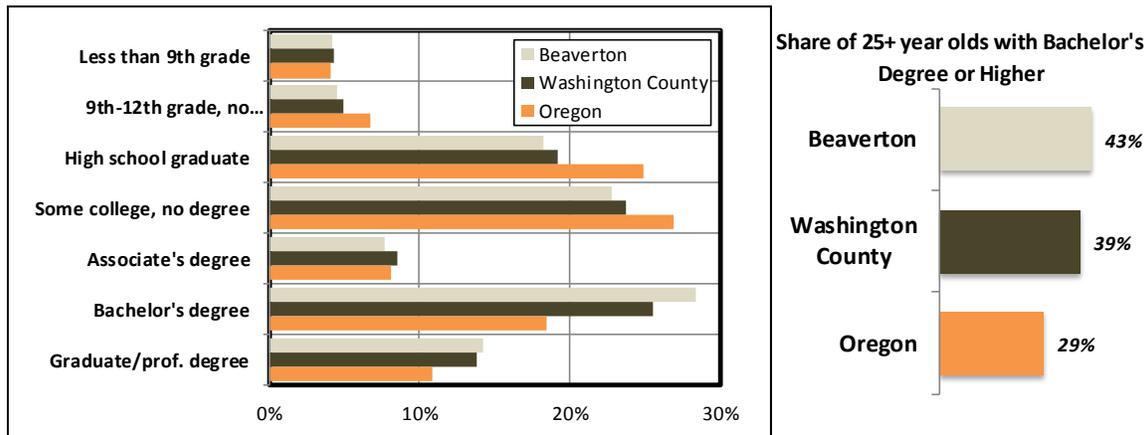


SOURCE: U.S. Census Bureau American Community Survey (2012)

Education

Education is a measure of the collective skills and knowledge of a populace. In theory, populations with greater skills and knowledge should translate into a heightened capacity for innovation. Moreover, the ability of firms to find adequately trained labor is an important factor to economic and productivity growth. Beaverton exhibits above average rates of educational attainment, with 43% of the working age population holding at least a bachelors' degree or higher, a favorable ratio relative to both Washington County (39%) and Oregon (29%) averages.

FIGURE 4.8: EDUCATIONAL ATTAINMENT, UNITED STATES AND CITY OF BEAVERTON (2013)



SOURCE: U.S. Census Bureau, American Community Survey (2013)

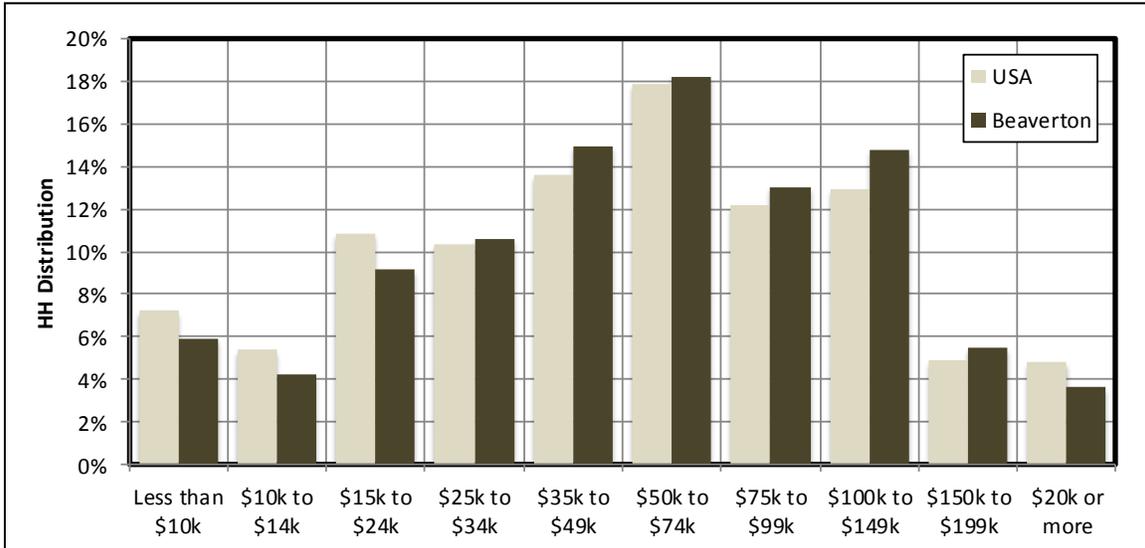
Commute Trends

An important characteristic of the labor force is the extent to which workers are residing locally or commuting from other areas. Rates of "labor force capture" indicate whether the community is an importer or exporter of labor. On average, 77% of employed Beaverton residents commute elsewhere in the region for their jobs. Conversely, roughly 78% of people working in the city live somewhere else and commute into Beaverton for work. This translates into around 22% of local jobs being filled by local residents. This rate could be higher, as it is in Hillsboro and Vancouver (33%).

Income

On net, Beaverton is only slightly more affluent than the national average, with a median household income of \$56,107 compared to \$53,046 nationally. However, the household distribution locally looks considerably more middle-class, with a smaller share of very low and very high-income households. The share of local households earning between \$50,000 and \$150,000 in Beaverton is 3% higher than the national average.

FIGURE 4.9: DISTRIBUTION OF HOUSEHOLDS BY INCOME, UNITED STATES AND CITY OF BEAVERTON, (2013)



SOURCE: U.S. Census Bureau, American Community Survey (2013)

Beaverton also maintains a relative wage advantage over state averages, by a margin of roughly 33%. Since the trough of the recession wages in Beaverton have increased at an annual rate of 3.0%, consistent with gains statewide. With overall inflation averaging 2.0% during this period, this translates into average annual real wage growth of 1.0%.

Economic Performance

With most metro areas experiencing the inflection point coming out of the recent recession and entering a slow but steady recovery, we evaluate Beaverton’s recovery and which industries are driving local economic expansion as an indicator of local economic strengths and early growth prospects.

Figure 4.10 exhibits industry sector performance in the Beaverton economy during the recent recession (2007-2010) and a two-year recovery period (2010-2012). The x-axis exhibits how an industry performed during the recession, with negative values indicating job losses and positive values indicating job gains. Similarly, the y-axis tracks losses and gains during the two-year recovery (the size of the bubbles indicate the relative size of the sector in terms of employment). By comparing the two axes, we can classify industry sectors into one of four performance quadrants:

Recovery: Industries that lost jobs during the recession but have since recovered some of previous losses. Industries above the indicated red line are those that have at least fully recovered from the recession.

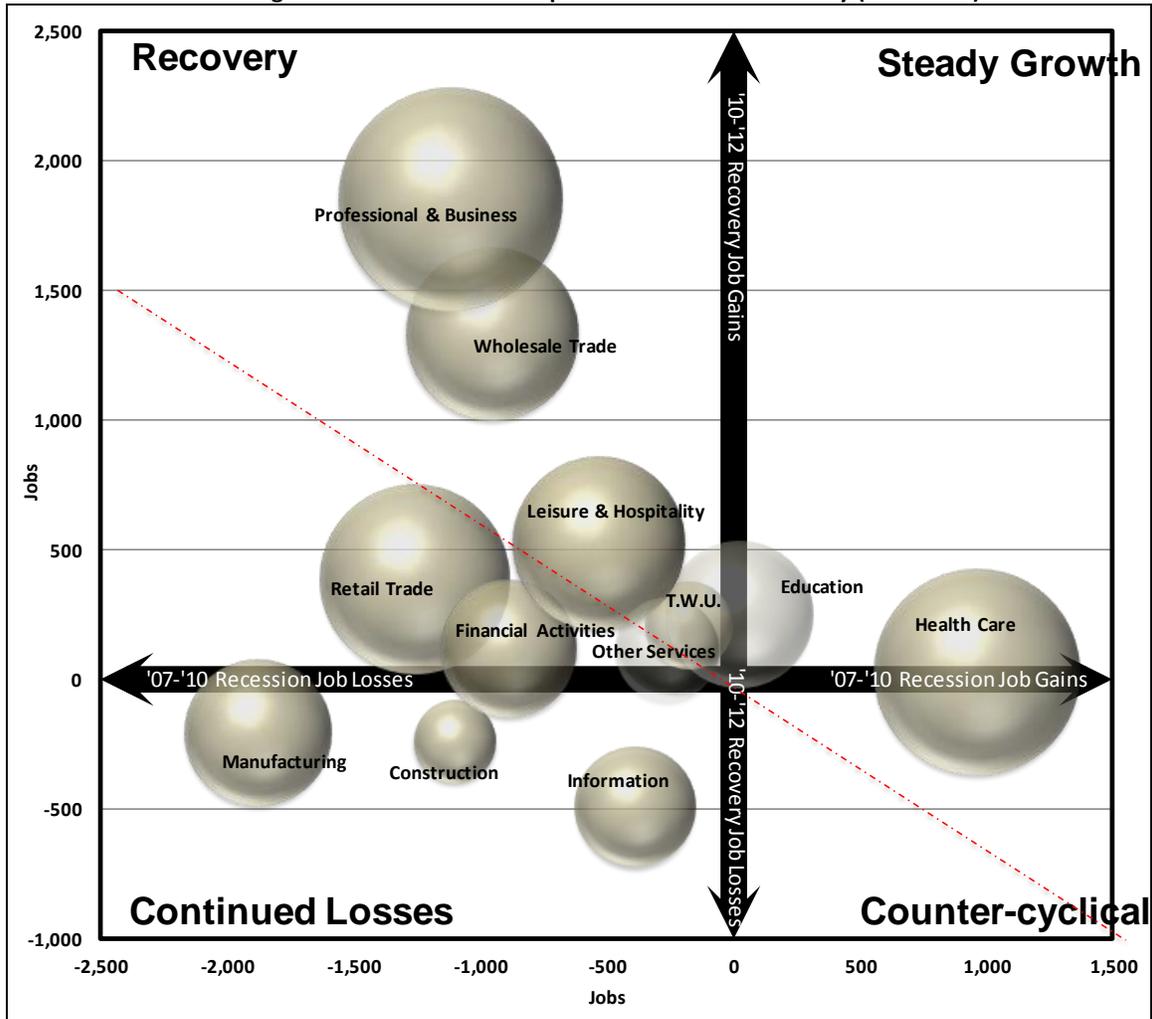
Continued Losses: Industries that lost jobs during the recession and have continued on a downward trend during the recovery.

Counter-Cyclical: Industries that gained jobs during the recession but have since exhibited losses during the recovery. Beaverton did not have any sectors in this quadrant.

Steady Growth: Industries that gained jobs during the recession and have since continued on an upward trend.

FIGURE 4.10: INDUSTRY SECTOR PERFORMANCE, CITY OF BEAVERTON USB, (2012)

Job Change from 2007 to 2010 Compared to Two Year Recovery (2010-2012)



Over the course of the recession and subsequent economic recovery some sectors have clearly outperformed others. During the recession, the Manufacturing, Retail, and Construction sectors were hit the hardest, accounting for 55% of net job losses. Health Care and Education were the only two sectors that did not decline during the recession. Across all industries, some have recovered much stronger than others. In addition to Education and Health Care, four other sectors (Professional & Business, Wholesaling, Leisure & Hospitality, and Transportation, Warehousing & Utilities) have recovered fully and have exceeded pre-recession employment levels. Unfortunately, as of 2012 data (most recent currently available) the Manufacturing, Construction, and Information sectors have failed to regain employment losses during the recovery.

FIGURE 4.11: EMPLOYMENT CHANGE BY INDUSTRY, RECESSION AND RECOVERY, BEAVERTON USB

| | Net Emploment Change | |
|-------------------------|----------------------|---------|
| | '07-'10 | '10-'12 |
| Construction | -1,101 | -243 |
| Manufacturing | -1,881 | -210 |
| Wholesale Trade | -954 | 1,334 |
| Retail Trade | -1,260 | 385 |
| T.W.U. | -172 | 209 |
| Information | -387 | -495 |
| Financial Activities | -888 | 116 |
| Professional & Business | -1,120 | 1,850 |
| Education | 22 | 248 |
| Health Care | 962 | 26 |
| Leisure & Hospitality | -532 | 525 |
| Other Services | -260 | 114 |
| Total | -7,572 | 3,859 |

Nike’s Long-Term Investment

Perhaps no single-firm will have as much impact on the economic direction of Beaverton than Oregon’s largest Fortune 500 headquarters, Nike. Late in 2012, Nike struck a deal with the Oregon Legislature to secure its corporate tax structure over a 30-year term. In return, the company agreed to reinforce its long-term commitment to the state by investing a minimum of \$150 million and creating a minimum of 500 jobs. By 2013 Nike had acquired 13 industrial office buildings and planned construction on the first phase of its campus expansion.

Venture Capital

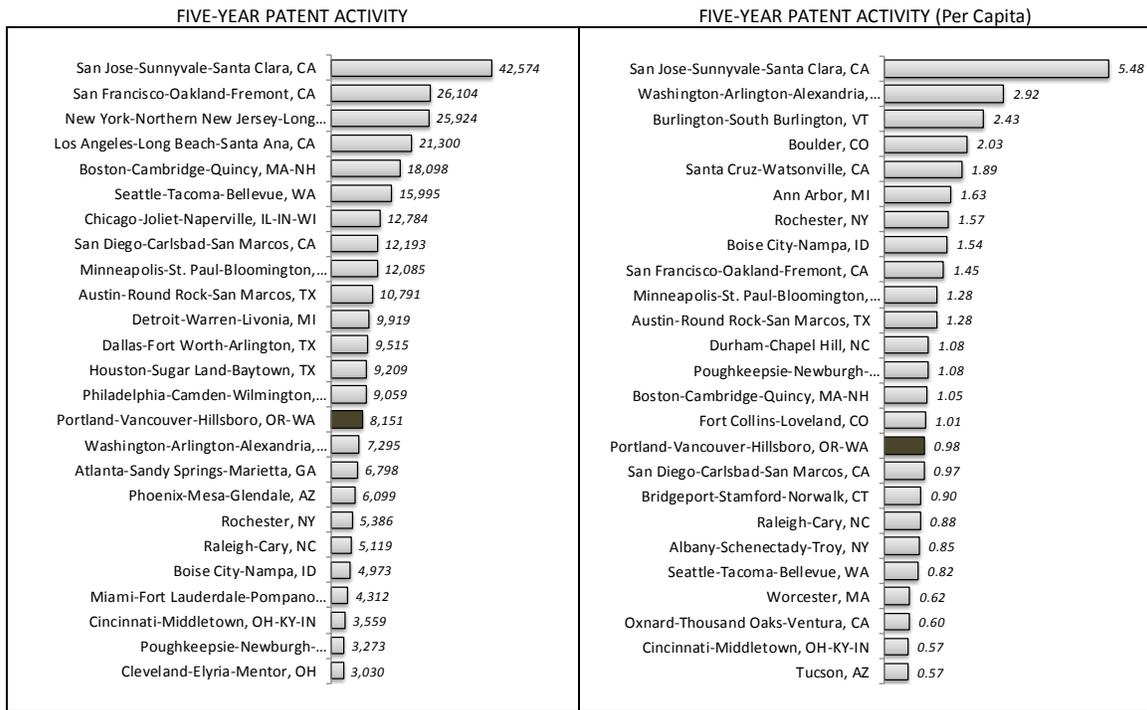
Venture capital is an important mechanism enabling firms to advance new ideas and bring them to market. As related to increasing productivity through innovation, this is especially the case in early stage, angel, and seed funding levels.

Our research found nearly 50 active venture capital funders in Oregon, funding deals ranging from \$25,000 seed money to \$30+ million later stage deals.

However, Oregon is not a powerhouse in the venture capital world, ranking 22nd in venture capital dollars and 19th in venture capital invested per capita over the last two years. At the Metropolitan Statistical Area (MSA) level, since 2005 the Portland MSA has averaged \$10.55 in venture capital (V.C.) investment per \$10,000 in GDP¹⁸. By comparison, Portland ranks 14th among similar MSA’s, with V.C. rates 1/7th the size of Austin and 1/4th the rate achieved in Seattle.

¹⁸ Venture Capital Investment compared to the size of the overall economy is another strong indicator of innovation health.

FIGURE 4.12: VENTURE CAPITAL BY STATE (2012-2013)¹⁹

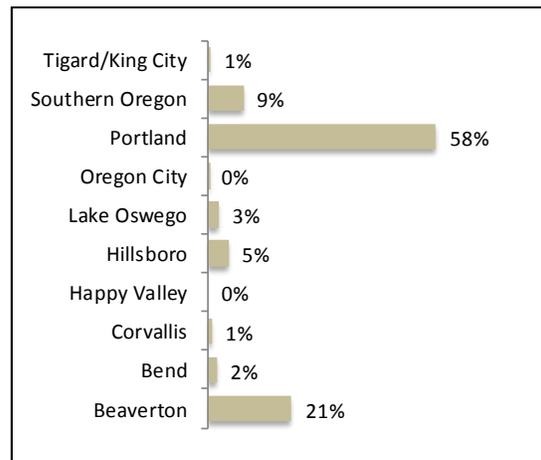


SOURCE: USPTO

We further considered where venture capital in Oregon is going. As it turns out, Beaverton has captured the second largest share of venture capital in Oregon since 2011, with 10 different companies across the software, semiconductor, Energy, and IT services fields capturing nearly \$100 million in investment.

While the State of Oregon does not have a competitive advantage in terms of access to venture capital relative to Washington and California, firms in the City of Beaverton have disproportionately benefitted from venture capital investments. Increasing the availability of venture capital is expected to have a significant benefit to local businesses.

FIGURE 4.13: SHARE OF VENTURE CAPITAL BY LOCATION, STATE OF OREGON (2011- CURRENT)



SOURCE: PricewaterhouseCooper

V. TARGET INDUSTRY ANALYSIS

This report section utilizes a range of analytical tools to assess the economic landscape in Beaverton toward the determination of industry typologies the City should consider targeted economic opportunities over the planning period. Here, we seek to identify industry anchors and clusters of interrelated industries that have assembled spatially in the community. Where possible, we look to identify the sectors that are likely to drive growth in current and subsequent cycles and to identify opportunities for new, emerging, or relocating sectors.

INDUSTRY CLUSTERS DEFINED

Sound regional economies are best organized around a healthy set of industry clusters—similar and related businesses and industries that are mutually supportive, regionally competitive, attract capital investment, and encourage entrepreneurship. Generally, clusters develop as an agglomeration of businesses in a geography that holds an innate competitive advantage in that industry—whether it is natural resources, human capital, political policies, or geography. For example, Oregon’s oldest industries—namely forestry and agriculture, emerged from physical and environmental attributes such as its climate, trees, soils, and access to shipping and distribution networks. In turn, these industries spawned interrelated clusters that include Food Processing & Manufacturing, Wood Product Manufacturing, Wholesaling & Distribution, Machinery Manufacturing, and host of other industries. In many local economies, we find also that a large firm or group of firms can often anchor a local cluster—the most obvious example in Beaverton being the Nike anchored activewear cluster.

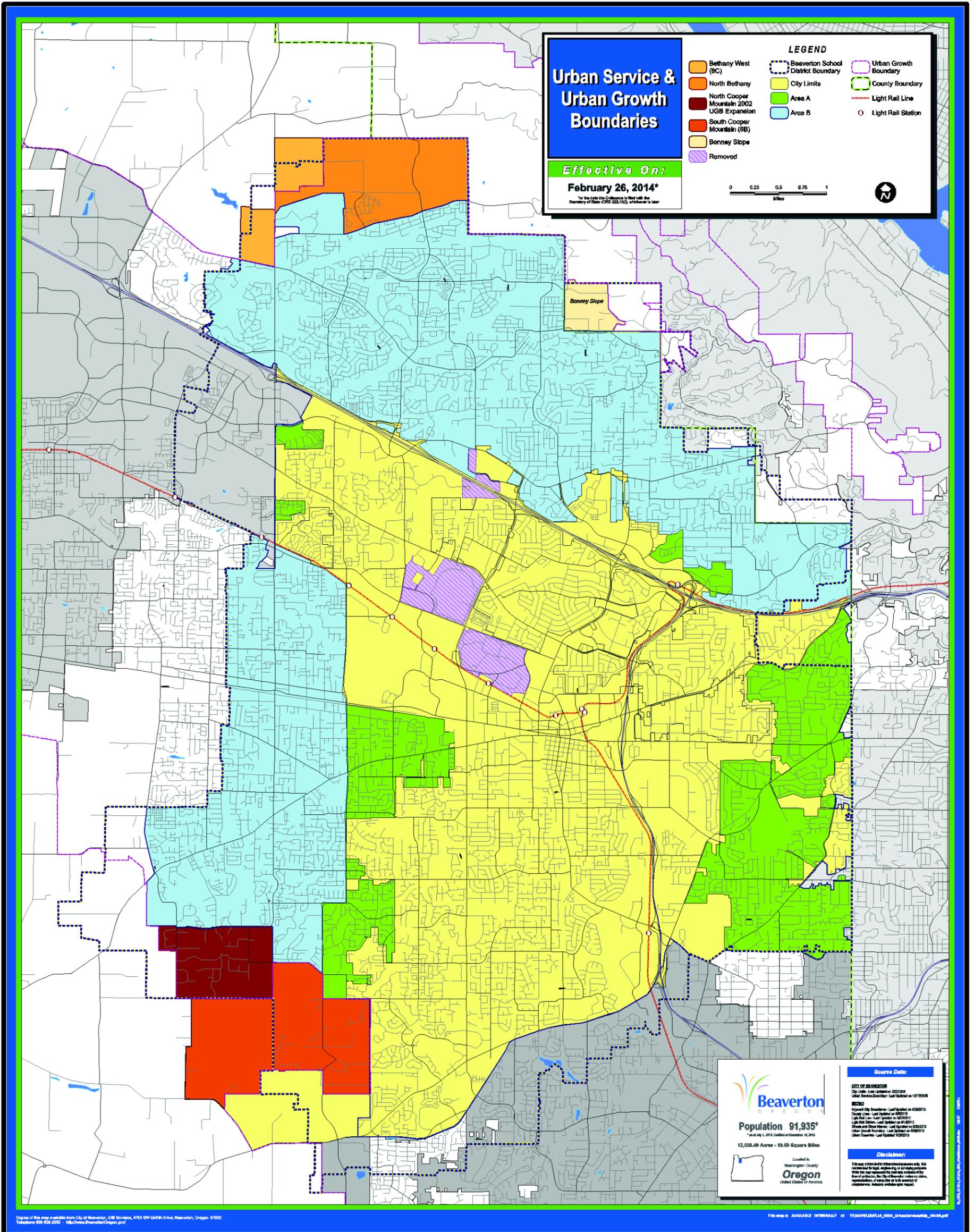
While specialization is a critically important factor, it is important for communities to understand that a cluster goes beyond a high concentration of employment or output within a given sector or group of similar sectors. Rather, it is the vertical integration of supply chains, distribution, wholesaling, or even competitively unrelated industries that share common inputs such as materials and trained labor. Clusters can organize around natural resources, training institutions, a particular firm or group of firms, among many other factors. In our analysis, we attempt to draw inferences about the organization of Beaverton’s clusters across anchor, primary, and ancillary industries, while looking to identify the local characteristics that could encourage growth within this economic ecosystem.

STUDY AREA DEFINED

The City of Beaverton has a unique geography, with highly irregular jurisdictional lines within the Metro UGB. In reality, economics do not conform to jurisdictional lines. As such, through consultation with the City of Beaverton, the study area for this analysis was delineated as the Beaverton Urban Service Boundary (USB). This seemed appropriate in that this delineation ties city services to development and includes unincorporated areas that are critical to the function of the local economy. It is assumed that over time the USB will largely correspond with the jurisdictional boundary.

While the Urban Service Area is viewed as an appropriate study area, it should be noted that it specifically precludes several large employers, each of which has a significant impact on the local economy. As a result, these employers are included in our analysis, as well as clusters. These firms are Nike, Tektronix, Columbia Sportswear, Electro Scientific Instruments and Leupold and Stevens. The specific areas excluded from the boundary that contain these firms are shown in pink on Figure 5.1.

FIGURE 5.1: BEAVERTON URBAN SERVICE AREA



DATA SOURCES

Our evaluation of Beaverton industry clusters is constructed from two primary sources of empirical information:

Quarterly Census of Employment and Wages (QCEW)

The QCEW data from the Oregon Employment Department provides covered employment and payroll data for Beaverton firms. The term “covered” refers to employees covered by unemployment insurance. Therefore, it does not consider the self-employed and commissioned workers. This data is geocoded at the firm level and provides information on the number of employees, payroll, and industrial NAICS code firms classify as. The use of this dataset has a number of limitations, the most pronounced of which is misclassification of firms by industry. This is particularly problematic for large firms with multiple reporting units, who often misclassify spatially or within a particular industry classification. Other potential limitations include improperly geocoded data and misclassification in NAICS categories. These impacts generally affect a small sample of firms in a community the size of Beaverton. Where possible, we augment the data based on known factors about major businesses and their operations.

IMPLAN Input-Output Tables

IMPLAN (IMPact for PLANning)²⁰ datasets are input/output multiplier models that can be used to demonstrate linkages between interrelated industries. Developed by the Forest Service to assist in land and resource management planning, IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income or business revenues) upon all other industries in an economic area. A primary limitation of this data is that we rely on county level data as a proxy for local conditions.

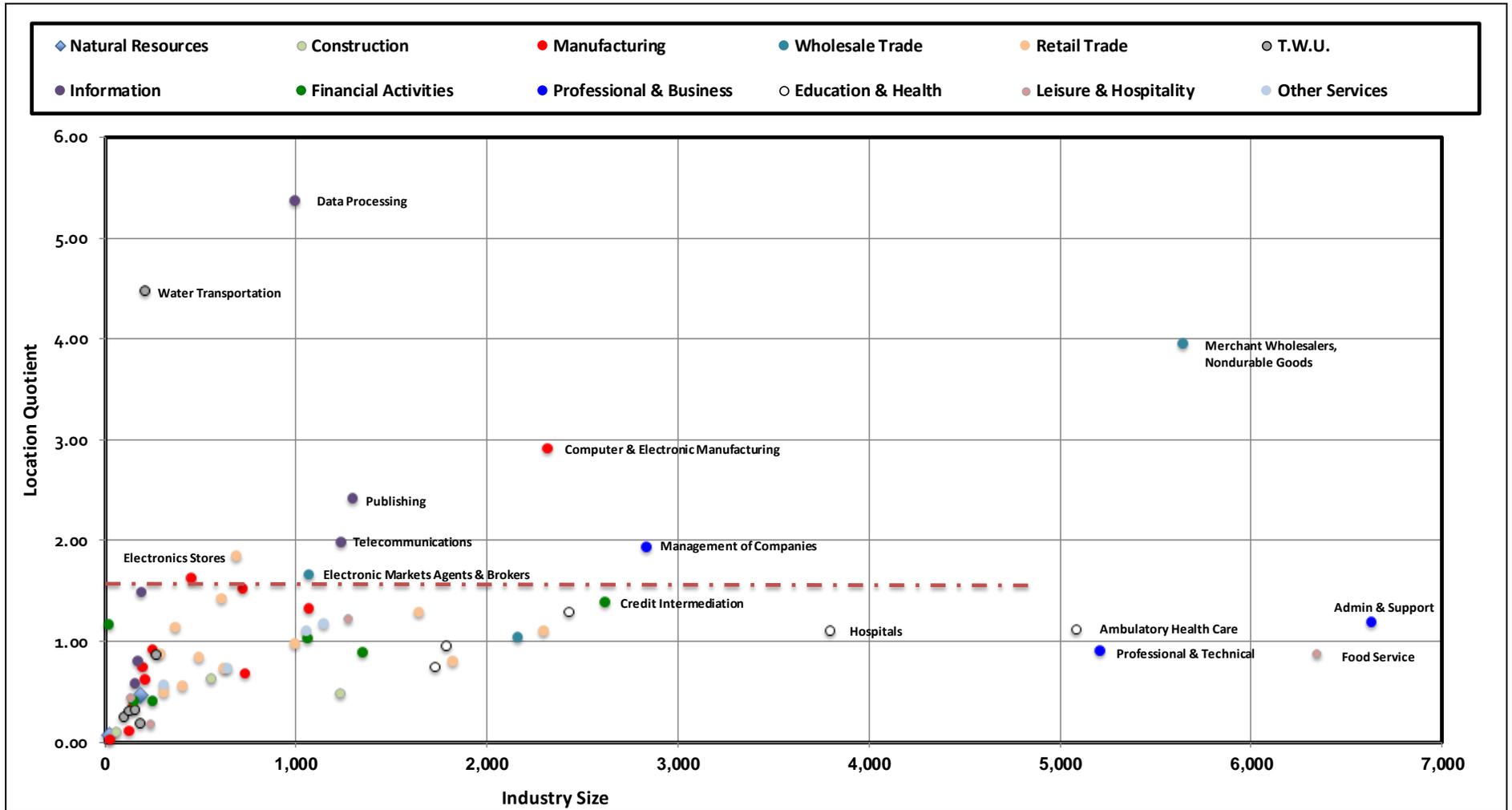
ECONOMIC SPECIALIZATION

The most common analytical tool to evaluate economic specialization is a location quotient analysis. This metric compares the concentration of employment in an industry at the local level to a larger geography. For example, a location quotient of 1.50 for widget manufacturing would indicate that the share of employment in widget manufacturing locally was 50% higher than the national average. Generally, 1.50 is a common threshold indicating a relatively high specialization, which is shown as the red dashed line on Figure 5.2). Large industries are also obviously considerable components of the local economy and should also be considered. When we plot these industries graphically by size, specialization, and sector, we can begin to see some patterns in the data.

²⁰ *Minnesota IMPLAN Group (MIG), Stillwater, Minnesota*

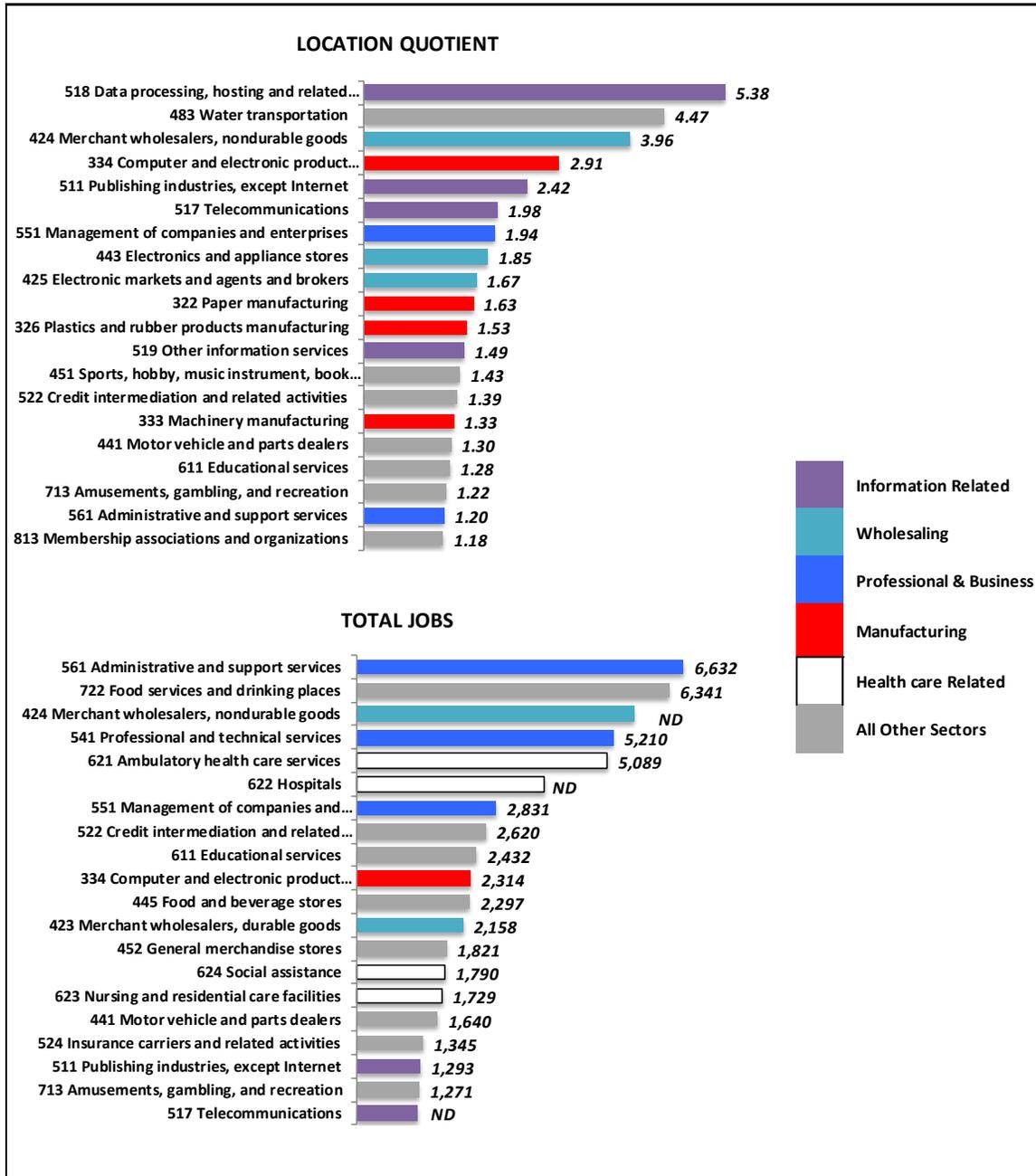


FIGURE 5.2: INDUSTRY SECTOR SPECIALIZATION ANALYSIS, CITY OF BEAVERTON USB, 2012²¹



We see groupings of industries within specific sectors by size and specialization, with outliers that have exceedingly high specialization, are among the largest industries in the local economy, or both. Industries or groups of industries with these features are the best candidates for our cluster anchors.

FIGURE 5.3: INDUSTRY SECTOR SPECIALIZATION DETAIL, CITY OF BEAVERTON USB, 2012²²



22

QCEW Data, Annual Average 2012 Data

From Figures 5.2 and 5.3 we can derive that that Beaverton economy is highly specialized in a few fundamental sectors. Some key findings:

- The 20 most specialized industries (highest location quotient) account for roughly 45% of employment in the economy. Three out of every four jobs in Beaverton are in the 20 largest industries.
- The Beaverton economy is highly specialized in a few sectors, none more so than the Information sector, which accounts for four of the most specialized, and two of the largest industries in the economy. The information sector includes data processing and management, telecommunications, and software publishing activities.
- Wholesaling activities are also highly concentrated in Beaverton, building upon the durable goods manufacturing base in computers, electronics, and machinery markets. Many of the economy's largest employers such as Nike and IBM classify a considerable share of their employment under merchant wholesaling as well.
- Advanced manufacturing in Beaverton is also among the most specialized sectors. This grouping is driven primarily by computers, paper, machinery, and plastics. Again, these industries have anchors in divisions of large firms including Nike, Tektronix, and ESI, among others.
- Companies conducting professional, technical, and business activities comprise a considerable share of the local economy. All three Professional & Business subsectors are among the largest 7 sectors of the economy and two (Management of Companies, Administrative Support) are among the most specialized. Taken on whole, the Professional & Business sector accounts for nearly one of every five jobs in the economy. This sector is very diverse, including corporate headquarters, advertising and marketing firms, offices of lawyers and accountants, engineering firms, computer programmers, temporary help services, and research and development activities, among others.
- Finally, while the local composition of health care services is roughly on par with expectations given the size of the economy and populace, firms in the Health Care sector account for 20% of the private sector economy.

ECONOMIC DRIVERS

The identification of the unique and shifting economic drivers of a local or regional economy are 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 current expansion cycle²³. A shift-share analysis is an analytical procedure that measures 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

²³ Measured from the trough of recent recession to 2012, the most recent period available for local employment data.

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 manufactures are struggling, and some local or regional condition is stifling economic opportunities.

Generally we can 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 are the true drivers of the expansion and 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 factor is limiting growth.

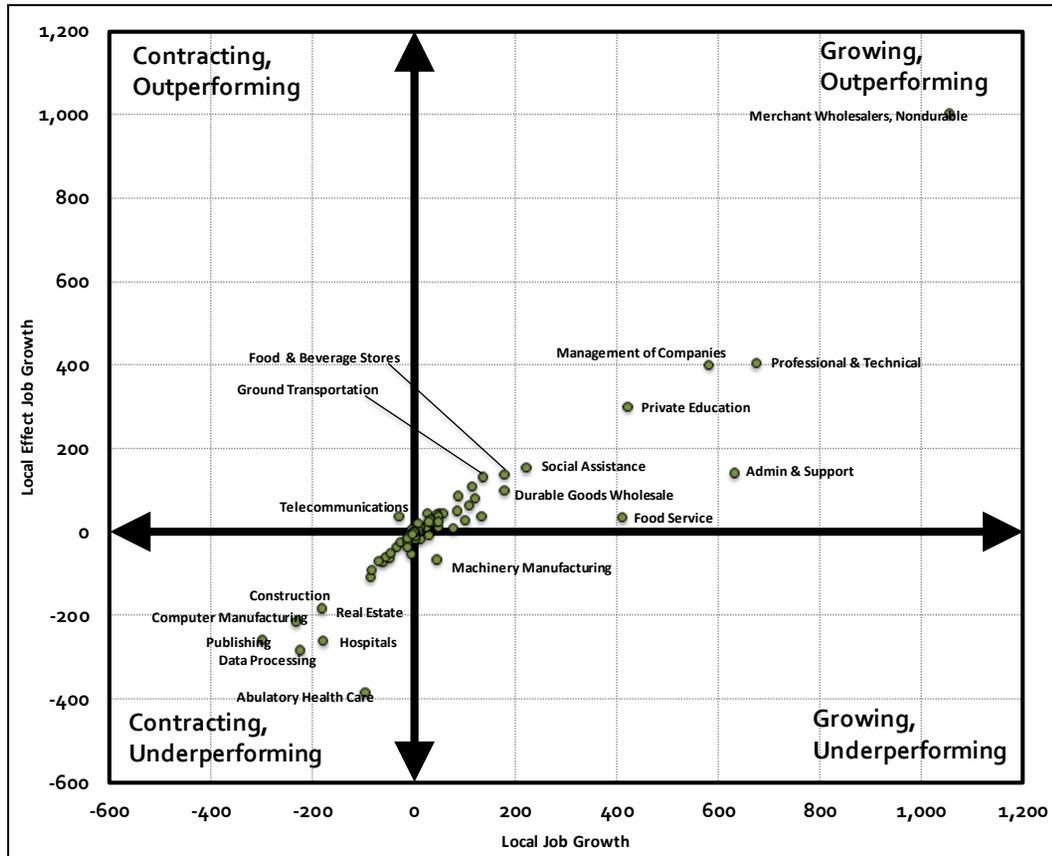
Contracting, Outperforming: Industries that are declining locally but slower than the national average. These industries have structural issues that are impacting growth industry wide. However, local firms are leveraging some local or regional factor that is making them more competitive than other firms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

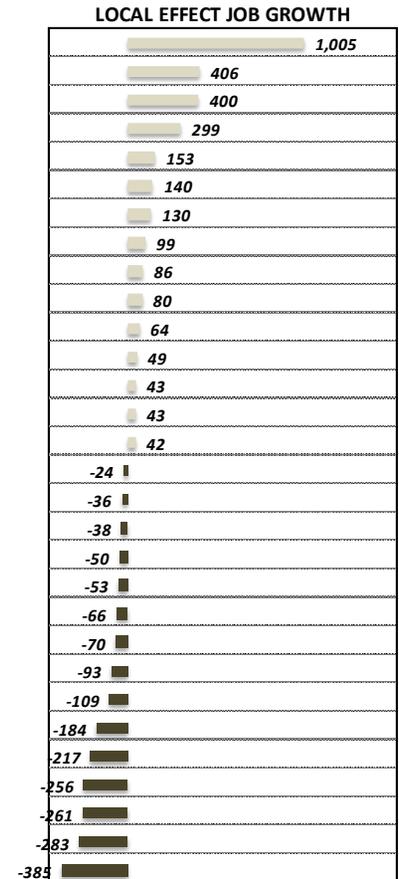
In association with our knowledge of specialized industrial composition, these metrics help policy makers craft targeted programs and policies to both facilitate the expansion of outperforming industries as well as support those exhibiting risk of deterioration. Beaverton's economic drivers are considered in Figure 5.4:



FIGURE 5.4: INDUSTRY SECTOR SHIFT SHARE ANALYSIS, CITY OF BEAVERTON (2010 – 2012)²⁴



- Merchant wholesalers, nondurable
- Professional and technical services
- Mgmt. of companies & enterprises
- Educational services
- Social assistance
- Administrative and support services
- ground passenger transportation
- Merchant wholesalers, durable
- Motion picture/sound recording
- Amusements, gambling, & recreation
- Credit intermediation & related
- Nursing and residential care facilities
- Accommodation
- Insurance carriers & related activities
- Securities, commodity contracts, invest.
- Broadcasting, except Internet
- Specialty trade contractors
- Waste management/remediation servs.
- Heavy & civil engineering construction
- Other information services
- Machinery manufacturing
- Chemical manufacturing
- Food manufacturing
- Real estate
- Construction of buildings
- Computer/electronic product man.
- Publishing industries, except Internet
- Hospitals
- Data processing, hosting & related
- Ambulatory health care services



²⁴ QCEW Data, Annual Average 2012 Data

From Figure 5.4 we can consider the industries that are both driving the local economic expansion as well as those industries at risk of becoming increasingly less competitive. Some key findings:

- Industries in the local economy are generally following the direction of the national economy. In other words, there are few industries locally running counter cyclical to the national trend. The main deviations locally are in the magnitude of growth in relation to structural trends.
- The leading 15 drivers of the local economy account for nearly all net-new job growth in the economy during the early portion of the expansion cycle. The **local effect** of these industries total over 3,000 jobs created since 2010.
- It is evident that Professional & Business Services growth is driving Beaverton’s early expansion. Three of the top six driver industries are in this sector. More so, the outlier of exceedingly high nondurable goods wholesaling growth is telling in the context of known expansion at Nike. It’s not surprising that industries in Nike’s corporate value support chain have exhibited the greatest performance. Other primary economic drivers include private education growth, Ancillary Health Care (Nursing Homes and Social Assistance), and Leisure/Hospitality (Accommodation, Food Service).
- Most manufacturing industries have exhibited relatively small job shifts on an absolute basis. Computer & Electronic Manufacturing, Chemicals, Machinery, and Food Manufacturing are industries exhibiting poor conditions. Conversely, Electrical Equipment, Nonmetallic Minerals, Plastics, and Paper Manufacturing are exceeding growth expectations.
- Industries that are underperforming include some of the largest industries in the local economy. Some of these sectors are more susceptible to volatility (i.e. Computer Manufacturing, Real Estate, Construction) and others have deviations driven by a particular entity (Hospitals/Health Care.)

TARGET INDUSTRY LINKAGES AND PROFILES

In addition to the previous metrics, we took a more granular look at the composition of industry sectors and the local businesses that operate within them. This is an essential exercise when forecasting industrial growth, as changes in a particular “foundational” industry are likely to permeate through other related businesses within a cluster. For example, if widget manufacturing is expected to exhibit strong growth, then local firms related to widget manufacturing (i.e. widget wholesaling & distribution, packaging & labeling of widgets, construction & maintenance of widget making machinery, etc.) are also likely to grow.

We find in economic cluster analysis that industries are linked in a variety of ways. Specifically, we have identified five general categories of linkage by which firms and industries agglomerate spatially or are fundamentally interrelated, although others likely exist.

Source of Demand: Firms or populations that support the demand for goods or services within a particular cluster. The “end user” of a good or service. Examples include population centers, foreign markets, or industries that utilize a particular good or service.

Source of Production Inputs: Firms or industries that supply inputs to the production process of another industry. Examples include raw materials, software, equipment, or components for assembly.

Distribution Activity: Firms or industries facilitate the processing, transportation, distribution, or wholesale of goods and services. The intermediary between sourcing or end users. Examples include food packaging and labeling, trucking/distribution, and wholesale trade brokers.

Ancillary/Business Support: Firms or industries that provide services that support the business operations of populations or other businesses in the economy. These firms generally exist in part or on whole due to the presence of other businesses, industries, & clusters. Examples include legal and accounting services, payroll services, and building maintenance.

Unrelated/Labor Pool or Sourcing: Sectors that are unrelated to each other but have agglomerated in the same geography due to a sharing of value chain or labor force. Examples include industries that utilize a common raw material or skill set in the workforce.

Our analysis began with an investigation of how industries are organized with respect to their cross industry linkages. Our process began with an evaluation of input-output linkages using 2012 IMPLAN datasets. This dataset effectively measures the magnitude of typical economic linkage between broad industry classes. However, while a sound approach in theory, this evaluation proved to have considerable limitations. First, for some industries, wholesaling for example, IMPLAN classifications do not drill down below the supersector level. Secondly, the data derived from national and regional inputs does not reflect local business activity. And finally, the data does not consider other factors that influence cluster development, such as physical proximity to an institution or critical piece of infrastructure, the presence of a foundational “anchor”, or the influence of shared workforce dynamics.

In other words, the IMPLAN data provides an additional screen, or a theoretical level input to industry linkages, but falls short of fully informing how actual businesses are connected and how clusters are organized at the local level. In the end, IMPLAN was better at measuring the magnitude of aggregate and tertiary impacts such as impacts on real estate, food, and other professional services.

Therefore, building upon this and our specialization and economic driver metrics as a screen, we researched businesses within each sector to define their primary economic function in the context of known linkages.

Excluding service industries such as Leisure, Food Service, Retail, and Personal Care services, we classified all firms with 15 or more employees by their economic function. This covered over three-quarters of all employment in the study area. Industry class was used to aggregate smaller firms. For each business we assigned a “primary” and if applicable a “secondary” cluster designation. We define these categories as follows:

Primary: *The sector or cluster in which a firm's primary business activity is concentrated.*

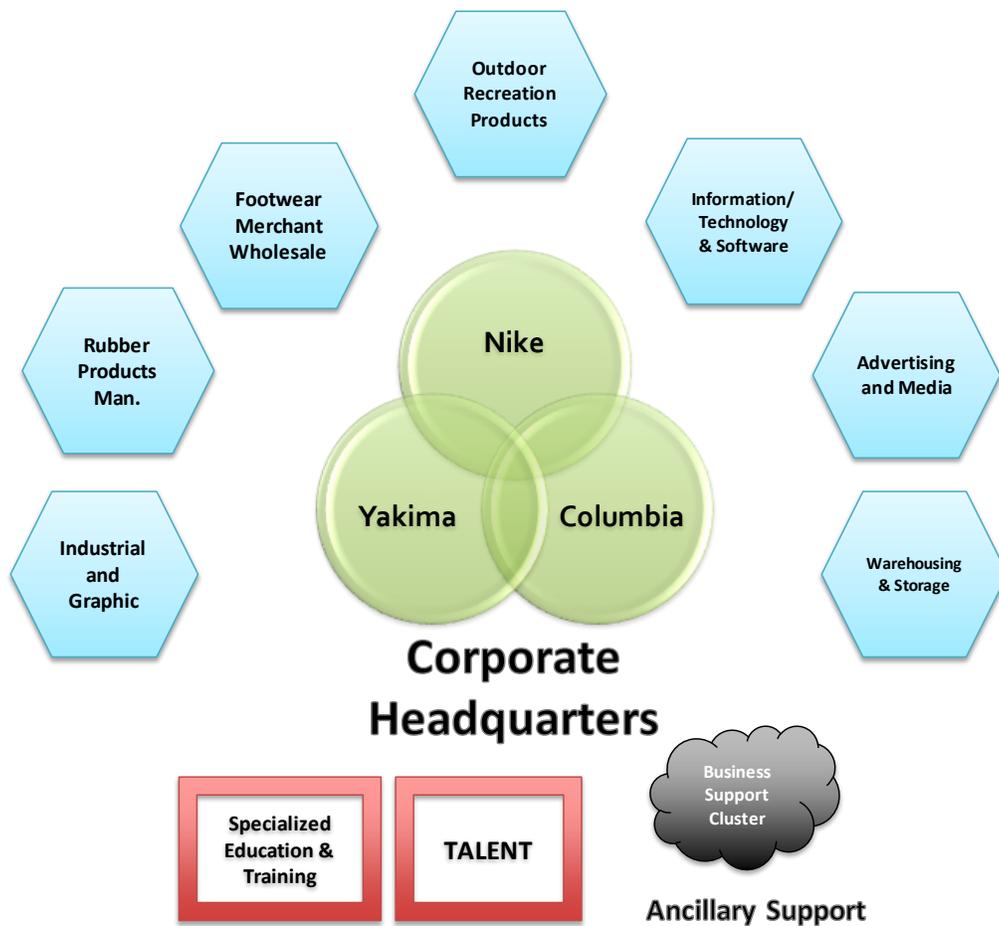
Support/secondary: *A sector or industry that is not directly related to a firm's output, but a linkage exists or the firm supports production or output in some way.*

For example, a large plumbing and HVAC construction contractor would be classified as construction for its primary sector, because the firm's primary business activity is construction. However, if in our research of the firm we found that its business function is the install and maintenance of clean rooms for the region's high-tech industry, its secondary classification would be High-Tech because it serves an essential function in the High-Tech Cluster's production process.

This approach is not without limitations and caveats. The most common limitation we found was businesses with diverse functions that operate across clusters that could be placed into multiple cluster designation. More so, the analysis also bears the inherent subjectivity of human classification and error. Nevertheless, this approach proved to be constructive as it reflected actual business operations and relationships while also allowing us to adjust for the inflexibility of NAICS classifications. All told, we organized the economy into six distinct target industry clusters: We summarize these clusters here followed by detailed profiles of their composition.

Activewear

The activewear cluster in Beaverton is without a doubt organized around the decision of Nike’s founders to locate their headquarters in Beaverton/Washington County. Over time, the critical mass of talent permeating through the region has attracted other firms as well, most notably Columbia Sportswear. While anchor firms maintain some manufacturing and warehousing functions locally, the majority of employment is concentrated in knowledge based design, research, global management, and back office functions. Ancillary industries relating to Beaverton’s activewear anchors extend into the software/information technology, advertising, media, and more broadly a robust business support sector. The cluster has even spun off a technical training institute for footwear design. The total local employment associated with this cluster was 9,159 in 2012.



ACTIVEWEAR AND OUTDOOR PRODUCTS

Representative Industries

Primary Industries

- 326 *Plastics and Rubber Products Manufacturing*
- 333314 *Optical Instrument and Lens Manufacturing*
- 33992 *Sporting and Athletic Goods Manufacturing*
- 42434 *Footwear Merchant Wholesalers*
- 42391 *Sporting and Recreational Goods and Supplies Merchant Wholesalers*
- 5511 *Management of Companies and Enterprises*

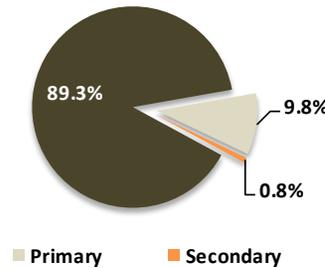
Secondary Industries

- 4931 *Warehousing and Storage*
- 54142 *Industrial Design Services*
- 54143 *Graphic Design Services*
- 54181 *Advertising Agencies*

Cluster Overview

The activewear cluster in Beaverton is without a doubt organized around the decision of Nike's founders to locate their headquarters in Beaverton/Washington County. Over time, the critical mass of talent permeating through the region has attracted other firms as well, most notably Columbia Sportswear. While anchor firms maintain some manufacturing and warehousing functions locally, the majority of employment is concentrated in knowledge based design, research, global management, and back office functions. Ancillary industries relating to Beaverton's activewear anchors extend into the software/information technology, advertising, media, and more broadly a robust business support sector. The cluster has even spunoff a technical training institute for footwear design.

Share of Economy



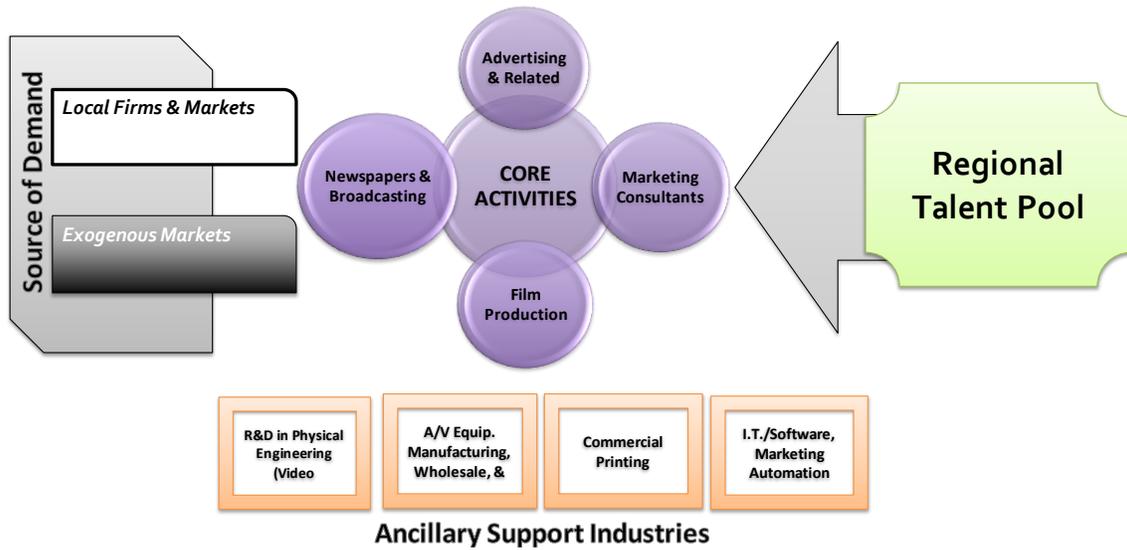
Representative Firms

- Nike
- Columbia Sportswear
- Yakima
- Leupold
- Printing Today
- Pensole

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 9,159

Media, Advertising, and Film Production

The Media, Advertising, and Film Production Cluster is really a subset, ancillary function to a range of local and regional demand sources. However, it has all the elements of an organized and growing, yet young and developing micro-cluster. Among the strengths of this industrial grouping is a regional talent pool born out the interconnectedness of the regionally significant media cluster and the activewear cluster. At the same time - as software, information technology, marketing automation, and data mining, video production, web hosting, etc. become increasingly entwined - Beaverton’s strengths in these sectors should facilitate growth opportunities. Total employment associated with this cluster was 1,706 in 2012.



MEDIA, ADVERTISING, AND FILM PRODUCTION

Representative Industries

Primary Industries

- 3231 *Printing and Related Support Activities*
- 51111 *Newspaper Publishers*
- 51112 *Periodical Publishers*
- 5121 *Motion Picture and Video Industries*
- 51512 *Television Broadcasting*
- 5417 *Scientific Research and Development Services*
- 5418 *Advertising, Public Relations, and Related Services*
- 54191 *Marketing Research and Public Opinion Polling*

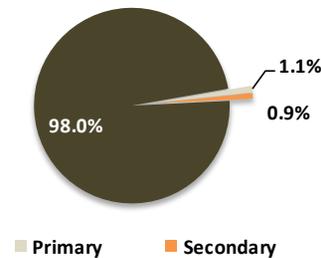
Secondary Industries

- 33431 *Audio and Video Equipment Manufacturing*
- 42511 *Business to Business Electronic Markets*
- 51913 *Internet Publishing and Broadcasting and Web Search Portals*
- 541613 *Marketing Consulting Services*
- 541922 *Commercial Photography*

Cluster Overview

The Media, Advertising, and Film Production Cluster is really a subset, ancillary function to a range of local and regional demand sources. However, it has all the elements of an organized and growing, yet young and developing micro-cluster. Among the strengths of this industrial grouping is a regional talent pool born out the interconnectedness of the regionally significant media cluster and the activewear cluster. At the same time, as software, information technology, marketing automation, and data mining, video production, web hosting, etc. become increasingly entwined; Beaverton’s strengths in these sectors should facilitate growth opportunities.

Share of Economy



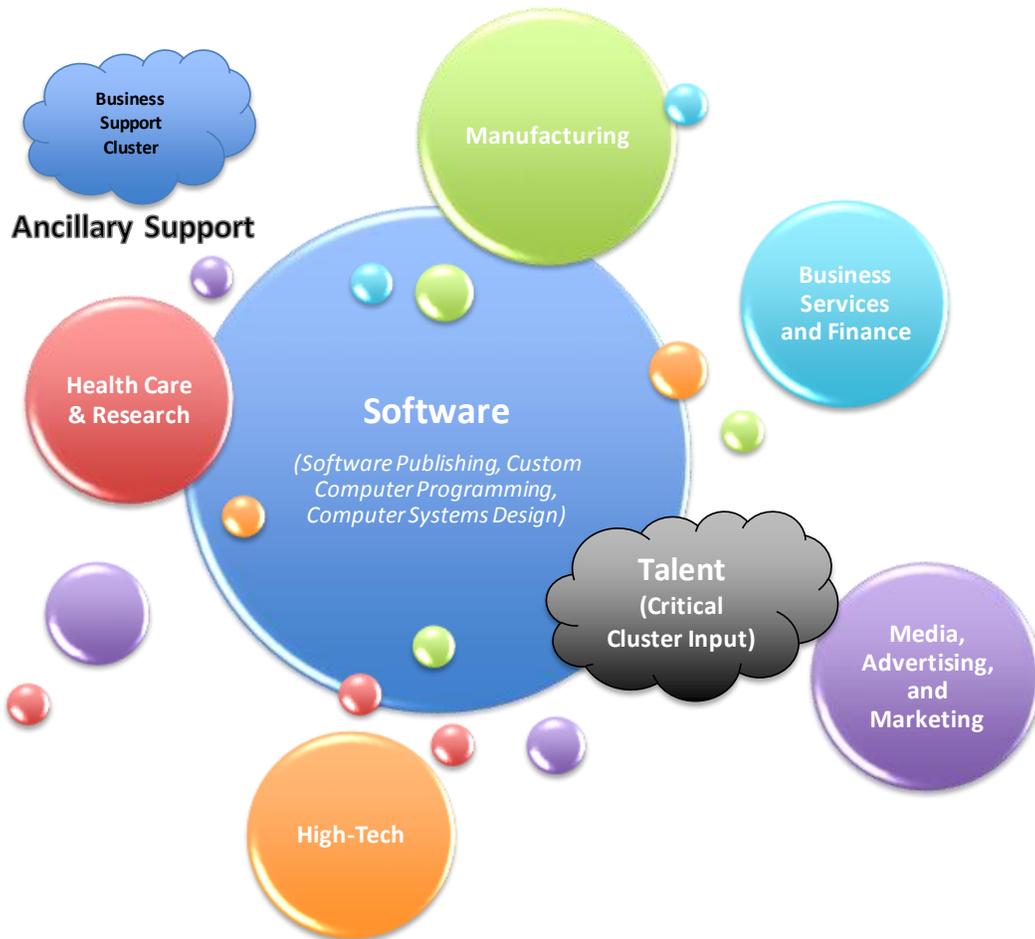
Representative Firms

- Nike
- Audio Precision
- Milestone Systems
- Quinstreet
- Darkwater Studios
- All Points Media
- Meredith Corp

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 1,706

Software and Information Technology

Software development is technically a subcomponent of the Business Support Cluster. However, while it exists to serve foundational industries, we consider it alone given its size (over 5,500 jobs), growth prospects, and more importantly its agglomeration around talent. As companies across nearly all industries are increasingly reliant on information technology to enhance productivity, software development and information technology will continue to expand. Software is a sector that is attracting the majority of the region’s venture capital. The cluster in Beaverton is very diverse, represented both by divisions of large corporations such as Nike and IBM, as well as emerging start-ups like Act-on and Digimarc. This cluster accounted for 5,578 jobs in the Beaverton USB in 2012.



INFORMATION TECHNOLOGY AND SOFTWARE

Representative Industries

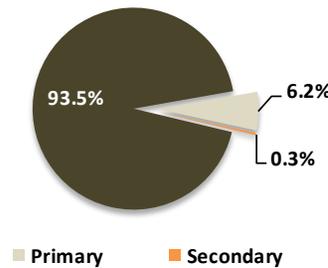
- 511210 Software Publishers
- 51821 Data Processing, Hosting, and Related Services
- 51913 Internet Publishing and Broadcasting and Web Search Portals
- 5223 Activities Related to Credit Intermediation
- 541511 Custom Computer Programming Services
- 541512 Computer Systems Design Services
- 541513 Computer Facilities Management Services
- 541519 Other Computer Related Services
- 5417 Scientific Research and Development Services

Secondary Industries

Cluster Overview

Software development is technically a subcomponent of the Business Support Cluster. However, while it exists to serve foundational industries, we consider it alone given its size (over 5,500 jobs), growth prospects, and more importantly its agglomeration around talent. As companies across nearly all industries are increasingly reliant on information technology to enhance productivity, software development and information technology will continue to expand. Software is a sector that is attracting the majority of the region's venture capital. The cluster in Beaverton is very diverse, represented both by divisions of large corporations such as Nike and IBM, as well as emerging start-ups like Act-on and Digimarc.

Share of Economy



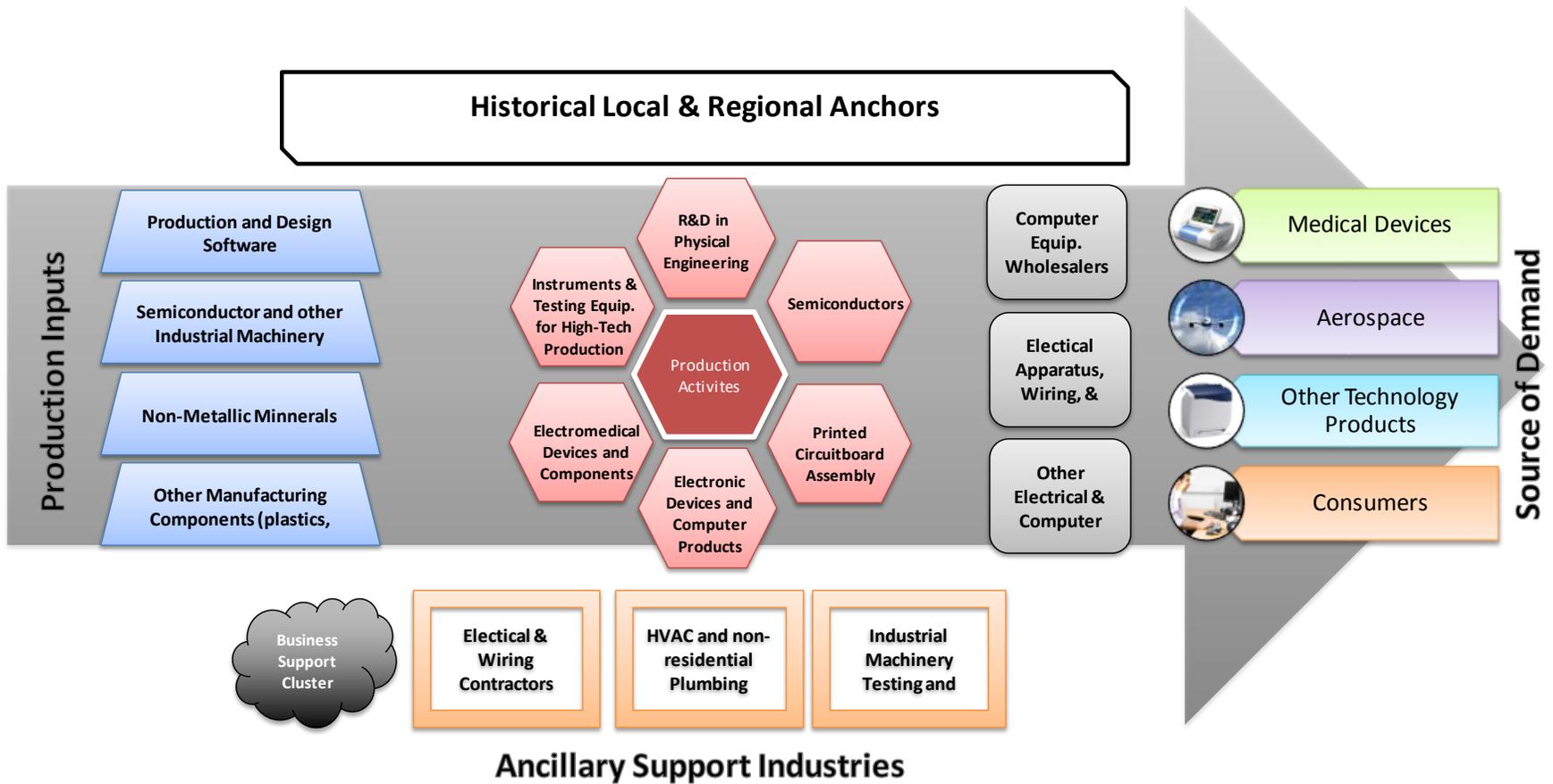
Representative Firms

- Nike
- Arris
- Sage Software
- Transcore
- IBM
- Act-On
- Digimarc

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 5,578

High Tech Manufacturing

Washington County's "Silicon Forest" was born out of early industry sitings of Tektronix and ESI, followed later by Intel. Taken together, the critical mass of talent and spinoffs has facilitated the development of a vertically integrated cluster that touches nearly every corner of the economy. Beaverton is home to many components of the high-tech value chain, including the manufacture of production inputs, raw materials, machinery, components, assembly, logistics, and even the construction and maintenance of facilities capable of high-tech production. A diverse wholesaling industry has developed out of national manufactures siting local outposts to serve the high-tech value chains. Overall employment exceeded 6,500 jobs in this cluster in 2012.



HIGH TECH MANUFACTURING

Representative Industries

Primary Industries

- 3341 Computer and Peripheral Equipment Manufacturing
- 33431 Audio and Video Equipment Manufacturing
- 33441 Semiconductor and Other Electronic Component Manufacturing
- 334515 Instrument Manufacturing for Measuring and Testing Electricity and Electronic Apparatus
- 3359 Other Electrical Equipment and Component Manufacturing
- 42343 Computer and Computer Peripheral Equipment and Software Merchant Wholesalers
- 42369 Other Electronic Parts and Equipment Merchant Wholesalers
- 327215 Glass Product Manufacturing Made of Purchased Glass

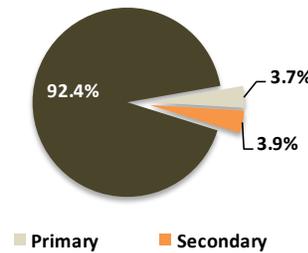
Secondary Industries

- 23821 Electrical Contractors and Other Wiring Installation Contractors
- 238220 Plumbing, Heating, and Air-Conditioning Contractors
- 333242 Semiconductor Machinery Manufacturing
- 54133 Engineering Services
- 511210 Software Publishers

Cluster Overview

Washington County's "Silicon Forest" was born out of early industry sitings of Tektronix and ESI, followed later by Intel. Taken together, the critical mass of talent and spinoffs has facilitated the development of a vertically integrated cluster that touches nearly every corner of the economy. Beaverton is home to many components of the high-tech value chain, including the manufacture of production inputs, raw materials, machinery, components, assembly, logistics, and even the construction and maintenance of facilities capable of high-tech production. A diverse wholesaling industry has developed out of national manufactures siting local outposts to serve the high-tech value chains.

Share of Economy



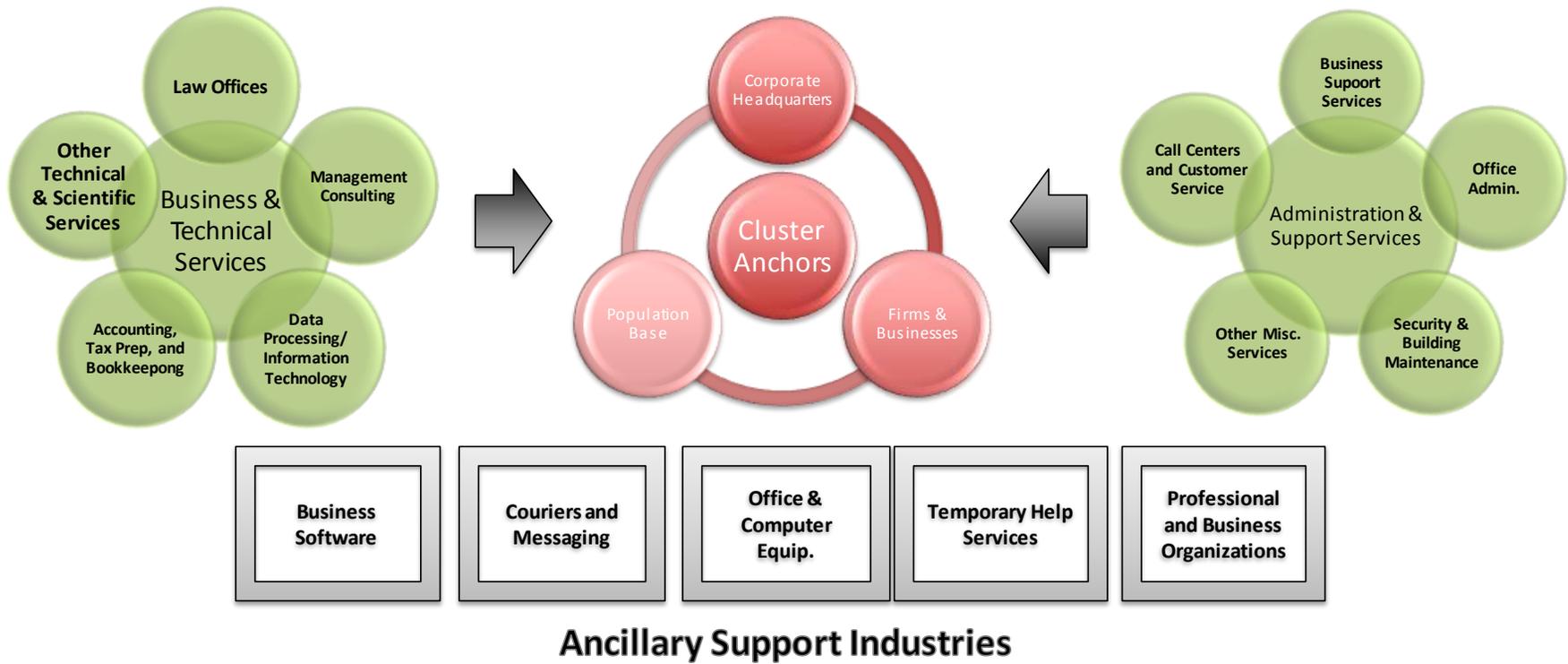
Representative Firms

- Tektronix
- Biamp Systems
- IBM
- ESI
- Micro Power Electronics
- Tosoh Quartz
- Maxtek Components

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 6,502

Business Support and Back Office Operations

Firms in the Business Support and Back Office Services Cluster serve both a growing economic and population base. This cluster of businesses includes firms that serve both specialized sectors and the broad business community. In some cases this localized agglomerations of the cluster can be anchored around the corporate or management headquarters of large campuses or a particular real estate concentration with locational advantages. The primary components of the cluster include legal, payroll, management consulting, and accounting services. The cluster also includes back office customer service and call services as well as activities relating to the service, maintenance, and operation of buildings. Staffing and temporary help services comprise a significant share of the cluster. Finally, we also include business and professional organizations and labor unions in this category. These activities and related functions make up roughly 20% of the economy, accounting for over 18,000 jobs in 2012.



BUSINESS SUPPORT AND BACK OFFICE OPERATIONS

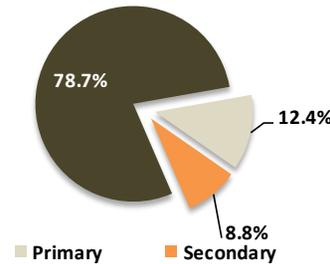
Representative Industries

- Primary Industries**
 - 51821 Data Processing, Hosting, and Related Services
 - 51913 Internet Publishing and Broadcasting and Web Search Portals
 - 5411 Legal Services
 - 5412 Accounting, Tax Preparation, Bookkeeping, and Payroll Services
 - 5416 Management, Scientific, and Technical Consulting Services
 - 551 Management of Companies and Enterprises
 - 56132 Temporary Help Services
 - 56142 Telephone Call Centers
 - 5617 Services to Buildings and Dwellings
 - 8139 Business, Professional, Labor, Political, and Similar Organizations
- Secondary Industries**
 - 54138 Testing Laboratories
 - 54151 Computer Systems Design and Related Services
 - 56199 All Other Support Services
 - 5112 Software Publishers

Cluster Overview

Firms in the Business Support and Back Office Services Cluster serve both a growing economic and population base. This cluster of businesses includes firms that serve both specialized sectors and the broad business community. In some cases this localized agglomerations of the cluster can be anchored around the corporate or management headquarters of large campuses or a particular real estate concentration with locational advantages. The primary components of the cluster include legal, payroll, management consulting, and accounting services. The cluster also includes back office customer service and call services as well as activities relating to the service, maintenance, and operation of buildings. Staffing and temporary help services comprise a significant share of the cluster. Finally, we also include business and professional organizations and labor unions in this

Share of Economy



Representative Firms

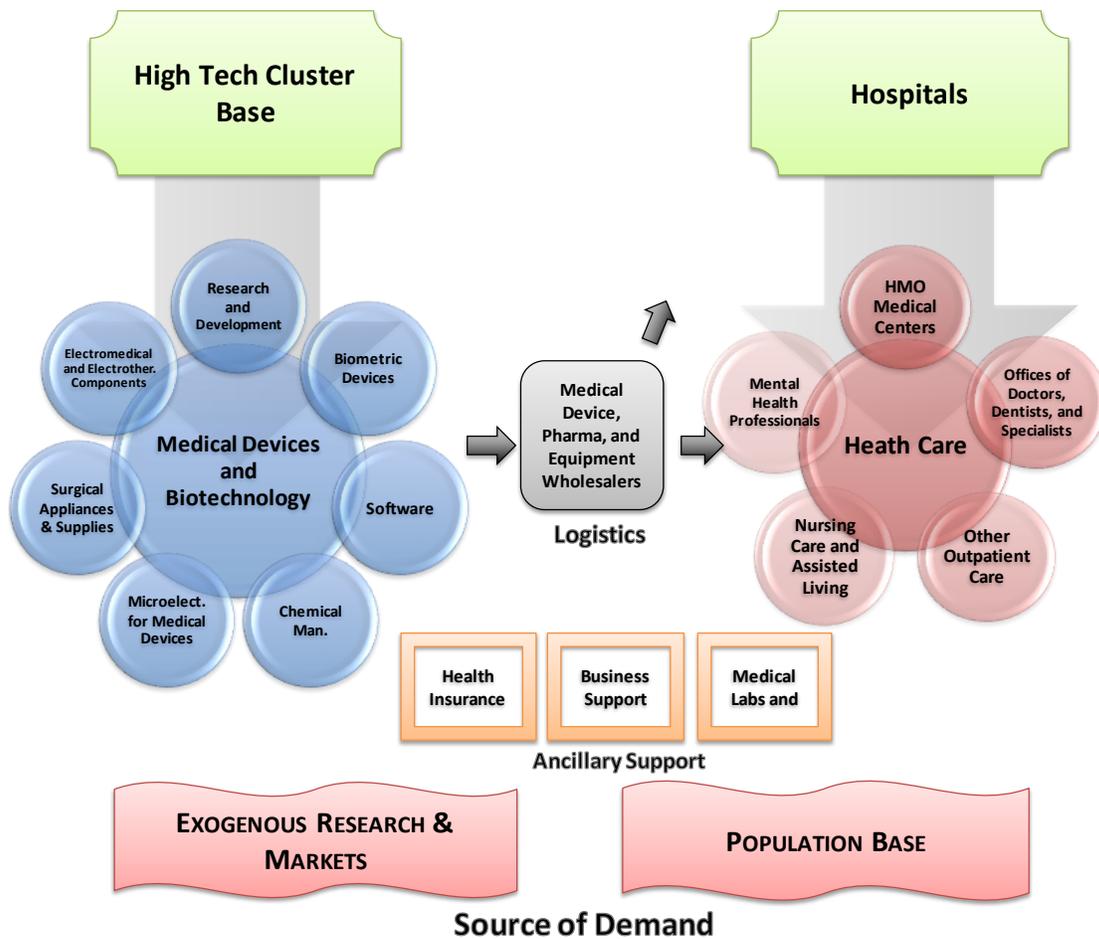
- Linktech
- Vital Marketing
- Express Employment
- Stream International
- Anesthesiologists Associated
- Corbin Consulting
- Stantec

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 18,251

Medical Device, Health Care, and Biotechnology

The Health Care and Medical Device Cluster in Beaverton is linked through workforce and value chain dynamics, however, the two “sides” are grounded from different fundamentals. The medical device element is really a subcomponent of Beaverton’s high-tech cluster—with many of the products and components of that grouping serving a medical application. Other activities that are an extension of serving both local and exogenous markets include the manufacture of surgical tool, biometric devices, research and development, and software. At the same time, the local health care sector, grounded local institutional hospitals is driven more by the regional and local population base. These activities include health practitioners, mental health professional, and a growing nursing and residential care market.

MEDICAL DEVICE, HEALTH CARE, AND BIOTECHNOLOGY



MEDICAL DEVICE, HEALTH CARE, AND BIOTECHNOLOGY

Representative Industries

Primary Industries*

- 32541 *Pharmaceutical and Medicine Manufacturing*
- 339116 *Dental Laboratories*
- 42345 *Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesale*
- 54138 *Testing Laboratories*
- 54171 *Research and Development in the Physical, Engineering, and Life Sciences*
- 621 *Ambulatory Health Care Services*
- 622 *Hospitals*
- 623 *Nursing and Residential Care Facilities*

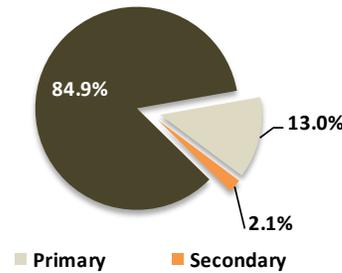
Secondary Industries

- 334111 *Electronic Computer Manufacturing*
- 334418 *Printed Circuit Assembly (Electronic Assembly) Manufacturing*
- 334510 *Electromedical and Electrotherapeutic Apparatus Manufacturing*
- 33911 *Medical Equipment and Supplies Manufacturing*
- 524114 *Direct Health and Medical Insurance Carriers*
- 541513 *Computer Facilities Management Services*

Cluster Overview

The Health Care and Medical Device Cluster in Beaverton is linked through workforce and value chain dynamics, however, the two “sides” are grounded from different fundamentals. The medical device element is really a subcomponent of Beaverton’s high-tech cluster—with many of the products and components of that grouping serving a medical application. Other activities that are an extension of serving both local and exogenous markets include the manufacture of surgical tool, biometric devices, research and development, and software. At the same time, the local health care sector, grounded local institutional hospitals is driven more by the regional and local population base. These activities include health practitioners, mental health professional, and a growing nursing and residential care market.

Share of Economy



Representative Firms

- Biomerieux
- ZRT Labs
- Kaiser
- Metropolitan Pediatrics
- Quest Diagnostics
- Providence St. Vincent
- Intel-GE Care

TOTAL JOBS ASSOCIATED WITH CLUSTER (2012): 12,962

* To prevent double counting of "primary industries", the manufacture of medical devices in this profile is included as a "secondary industry" because it has been previously accounted for in the high tech cluster.

Other Important Sectors of Note

In addition to industries that have formed dynamic and interrelated clusters, these industries have a considerable presence, but cannot be classified into a particular cluster.

Telecommunications

Over 1,000 jobs in this sector are driven by a handful of large service providers, including Comcast and XO Communications.

Other Wholesale Activities

In this analysis we tend to allocate wholesaling activity across different sectors to the particular industries or clusters it serves. However, it should be noted that in many markets the critical mass of these activities could develop a Wholesale and Distribution cluster in and of itself. This does not appear to be the case in Beaverton, but we highlight that Beaverton does have a presence in other wholesaling sectors serving the food processing, office, and construction sectors, among others.

Paper

Beaverton is still home to large-scale paper manufacturing, warehousing, and wholesaling activities, grounded in the historic presence of regionally significant companies. Firms such as International Paper, Standard Bag Manufacturing, and Alliance Packaging are local players in a sector directly accounting for about 400 local employees.

Retail, Leisure & Household Activities

Firms that can be classified in this grouping are those generally driven by the disposable income of local households and employees. These activities include retail trade, food services, leisure and recreation, and personal care services. Taken together our classification of these firms account for over a quarter of local employment, or about 18,000 jobs.

VI. FORECAST OF EMPLOYMENT AND LAND NEED

CITY OF BEAVERTON EMPLOYMENT FORECASTS

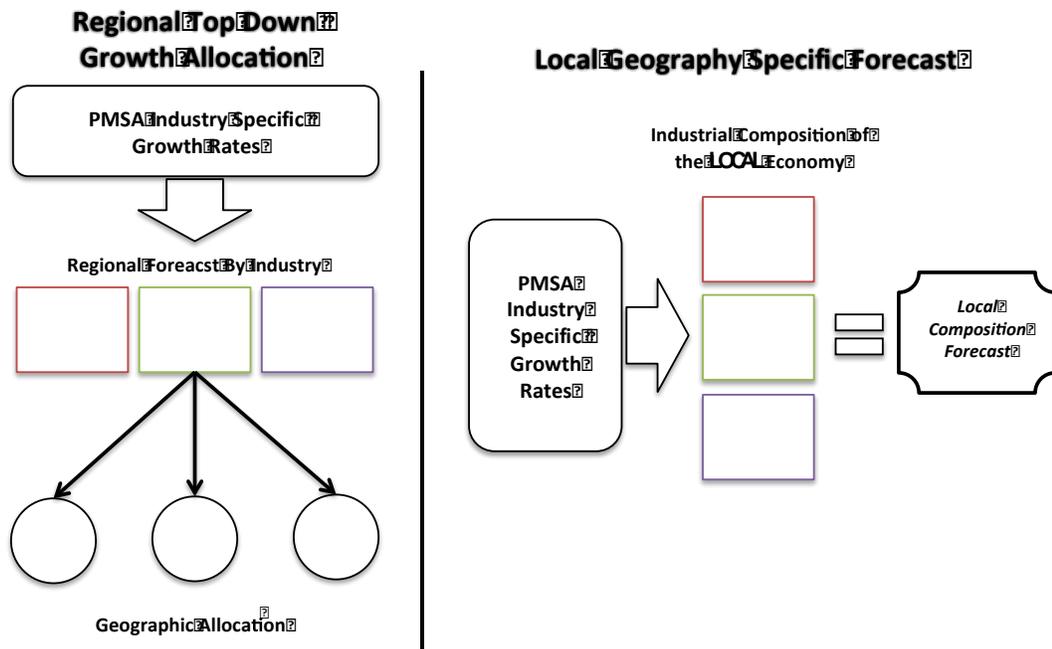
Building upon our assessment of economic trends and conditions, and identification of economic opportunities and targeted clusters, a series of employment forecasts was generated over the planning period (2015-2035). We have broken these forecasts into two categories, baseline and alternative forecasts. The baseline forecasts generally rely on third-party growth estimates at the sector level. The alternative forecasts reflect more opportunity driven scenarios that reflect trends among local industries, foundational firms, and the city’s economic development policy direction.

Baseline Forecast:

Scenario I

The first forecast relies on regional growth rates outlined in the 2014 Draft Metro Urban Growth Report. In that analysis, growth forecasts were developed at the industry sector level for the entire Portland-Vancouver-Beaverton PMSA and then allocated down (top down approach) to unique geographies. Scenario I in this report relies on these macro variable based growth rates, but applies them to the specific industrial composition of the local economy.

FIGURE 6.01: OVERVIEW OF BASELINE EMPLOYMENT FORECAST APPROACH



Scenario II

Scenario II in this analysis uses the same local concentration approach as Scenario I. However, this scenario uses industry sector level forecasts from the Oregon Employment Department for Washington and Multnomah Counties. These forecasts are produced for the entire area, including areas outside of the UGB. However, we apply them only to the inside of the UGB base. Because the urban economic base is likely to grow at a faster rate than outside of the metro area, this forecast is likely to be conservative.

Forecast Results

The two forecasts vary significantly with respect to the magnitude of growth anticipated, with the Metro UGR estimate anticipating average annual growth at 1.0%, while the Oregon Employment Department's anticipated growth rates for the local industry mix is 1.4%. In addition, the distribution of growth across industries is also substantially different.

- The PMSA forecast (Scenario I) anticipates negligible growth in the manufacturing sector compared to a 0.7% expansion for Washington and Multnomah Counties forecasted by the Oregon Employment Department (Scenario II).
- The state forecasts are much more bullish on population serving industries than the PMSA forecasts. Growth rates for Finance, Real Estate, Professional Services, Education & Health, Leisure, and Retail, are all measurably higher in the Scenario II forecasts.
- Taken together, the forecast would represent an increase in the employment base of roughly 21% and 32% in Scenarios I and II, respectively.
- The Scenario II is the preferred scenario, and will be used in reconciling capacity relative to projected demand.

The UGR's breakout of growth by subarea shifts allocations by Transportation Analysis Zone (TAZ) based on capacity. As the Beaverton area's employment land is largely developed, this approach will tend to redistribute marginal growth to areas with more readily available capacity.

FIGURE 6.02: BASELINE GROWTH FORECASTS, CITY OF BEAVERTON (2014-2034)

| SCENARIO 1 | | Forecast Year | | | | | '14-'34 Growth | |
|---------------------------------|---------------|---------------|----------------|----------------|----------------|---------------|----------------|--|
| Industry | 2014 | 2019 | 2024 | 2029 | 2034 | Jobs | AAGR | |
| Construction | 2,049 | 2,202 | 2,367 | 2,543 | 2,733 | 684 | 1.5% | |
| Manufacturing | 6,412 | 6,496 | 6,582 | 6,668 | 6,756 | 344 | 0.3% | |
| Wholesale Trade | 3,801 | 4,063 | 4,342 | 4,641 | 4,961 | 1,160 | 1.3% | |
| Retail Trade | 10,971 | 11,341 | 11,723 | 12,118 | 12,527 | 1,556 | 0.7% | |
| T.W.U. | 2,331 | 2,473 | 2,623 | 2,782 | 2,951 | 620 | 1.2% | |
| Information | 4,251 | 4,490 | 4,742 | 5,008 | 5,289 | 1,038 | 1.1% | |
| Finance & Insurance | 3,986 | 4,104 | 4,225 | 4,350 | 4,479 | 493 | 0.6% | |
| Real Estate & Rental Leasing | 1,274 | 1,299 | 1,325 | 1,351 | 1,378 | 104 | 0.4% | |
| Professional & Technical Servic | 5,314 | 5,674 | 6,059 | 6,470 | 6,908 | 1,594 | 1.3% | |
| Management of Companies | 8,809 | 9,407 | 10,045 | 10,727 | 11,455 | 2,646 | 1.3% | |
| Administration & Waste | 7,022 | 7,499 | 8,007 | 8,551 | 9,131 | 2,109 | 1.3% | |
| Education | 6,205 | 6,466 | 6,739 | 7,022 | 7,318 | 1,113 | 0.8% | |
| Health Care | 13,046 | 13,725 | 14,439 | 15,191 | 15,982 | 2,936 | 1.0% | |
| Arts, Entertainment, & Recreati | 2,315 | 2,404 | 2,496 | 2,592 | 2,692 | 377 | 0.8% | |
| Accomodation & Food | 6,933 | 7,199 | 7,476 | 7,763 | 8,061 | 1,128 | 0.8% | |
| Other Services | 2,937 | 3,076 | 3,222 | 3,375 | 3,535 | 598 | 0.9% | |
| Public Administration | 825 | 860 | 896 | 933 | 973 | 148 | 0.8% | |
| TOTAL: | 88,481 | 92,777 | 97,308 | 102,086 | 107,127 | 18,646 | 1.0% | |
| SCENARIO 2 | | Forecast Year | | | | | '14-'34 Growth | |
| Industry | 2014 | 2019 | 2024 | 2029 | 2034 | Jobs | AAGR | |
| Construction | 2,049 | 2,289 | 2,558 | 2,857 | 3,192 | 1,143 | 2.2% | |
| Manufacturing | 6,412 | 6,626 | 6,846 | 7,074 | 7,310 | 898 | 0.7% | |
| Wholesale Trade | 3,801 | 4,032 | 4,277 | 4,537 | 4,813 | 1,012 | 1.2% | |
| Retail Trade | 10,971 | 11,508 | 12,072 | 12,663 | 13,283 | 2,312 | 1.0% | |
| T.W.U. | 2,331 | 2,415 | 2,502 | 2,593 | 2,686 | 355 | 0.7% | |
| Information | 4,251 | 4,479 | 4,720 | 4,973 | 5,240 | 989 | 1.1% | |
| Finance & Insurance | 3,986 | 4,177 | 4,378 | 4,588 | 4,808 | 822 | 0.9% | |
| Real Estate & Rental Leasing | 1,274 | 1,350 | 1,431 | 1,516 | 1,607 | 333 | 1.2% | |
| Professional & Technical Servic | 5,314 | 5,859 | 6,461 | 7,124 | 7,855 | 2,541 | 2.0% | |
| Management of Companies | 8,809 | 9,530 | 10,310 | 11,154 | 12,068 | 3,259 | 1.6% | |
| Administration & Waste | 7,022 | 7,765 | 8,588 | 9,497 | 10,502 | 3,480 | 2.0% | |
| Education | 6,205 | 6,575 | 6,966 | 7,381 | 7,821 | 1,616 | 1.2% | |
| Health Care | 13,046 | 14,320 | 15,719 | 17,254 | 18,939 | 5,893 | 1.9% | |
| Arts, Entertainment, & Recreati | 2,315 | 2,458 | 2,610 | 2,771 | 2,942 | 627 | 1.2% | |
| Accomodation & Food | 6,933 | 7,462 | 8,032 | 8,646 | 9,306 | 2,373 | 1.5% | |
| Other Services | 2,937 | 3,128 | 3,332 | 3,548 | 3,779 | 842 | 1.3% | |
| Public Administration | 825 | 860 | 896 | 935 | 974 | 149 | 0.8% | |
| TOTAL: | 88,481 | 94,835 | 101,697 | 109,111 | 117,126 | 28,645 | 1.4% | |

The estimates in the preceding analysis are useful in creating a baseline understanding of macroeconomic growth prospects. They are common and broadly accepted approaches when looking at large geographic regions. After all, this approach is similar to the methodology used to produce the employment forecasts in Metro’s Urban Growth Report and estimates for state budgeting purposes. However, forecasts grounded in broad based economic variables do not account for the realities of local businesses and trends among evolving industries. Industries continually evolve and new opportunities arise. Just ten years ago data centers barely existed in the Northwest, e-commerce business models such as Amazon were still being questioned as viable, social media was in its infancy, commercial aerial drones didn’t exist, and the first smart phones were just being designed. Five years ago app development wasn’t even an industry and most macro forecasts had the information sector (includes software publishing) declining or exhibiting flat growth. Any long-term forecast is wrought with uncertainty, and subject to inherent error.

The extent to which a forecast reflects discrete information about companies and industries can reduce error bands while providing value-added direction on how policy can influence outcomes.

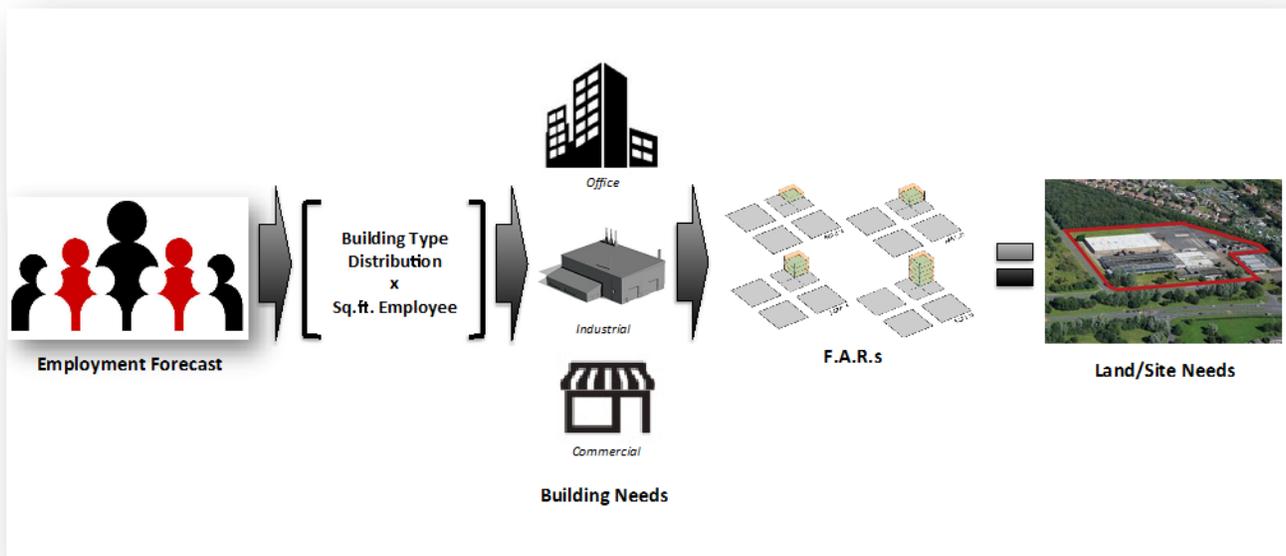
EMPLOYMENT LAND FORECAST

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 usually locate in. As an example, insurance agents typically locate in traditional office space, usually along commercial corridors. However, a percentage of these firms locate 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 market clearing 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 two acres to accommodate its structure, setbacks, parking, and necessary yard/storage space. This building would have an FAR of roughly 0.29.

FIGURE 6.03: EMPLOYMENT FORECAST TO LAND DEMAND METHODOLOGY



Baseline Land Demand Analysis

Similar to how baseline employment forecasts followed assumptions in the Urban Growth Report, we maintain that trend here. Specifically, the UGR outlined assumptions a distribution of employment by sector into six building typologies, provided general assumptions about square feet per employee for these typologies, and indicated a series of Floor Area Ratios (FARs) to complete the conversion process. However, we note several limitations and caveats here:

- The baseline distribution matrix includes six typologies:
 - Traditional Office (commercial)
 - Institutional (commercial)
 - Flex/Business Park (industrial)
 - General Industrial (industrial)
 - Warehouse (industrial)
 - Retail (commercial)

These development typologies do not include broad diversity within individual sectors. In reality there is considerable difference between many development forms within these categories.

- The designation of an entire typology into a land class is limiting. In reality some of these typologies cross over land categories, particularly industries in institutional uses that locate on both commercial and industrial land.

As outlined in the following series of tables, employment growth by industrial classification was allocated to general building typology for both scenarios, under both a five-year as well as a twenty-year planning horizon.

FIGURE 6.04: BASELINE LAND DEMAND FORECASTS

| SCENARIO 1 | Five-Year Forecast | | | | | | 20-Year Forecast | | | | | |
|-----------------------------------|--------------------|------------|--------------|------------|--------------|---------------|------------------|--------------|--------------|--------------|--------------|---------------|
| | General | | Warehouse/ | Retail | Office | Institutional | General | | Warehouse/ | Retail | Office | Institutional |
| | Flex | Manuf. | Distribution | | | | Flex | Manuf. | Distribution | | | |
| Construction | 28 | 61 | 28 | 15 | 21 | 0 | 123 | 274 | 123 | 68 | 96 | 0 |
| Manufacturing | 20 | 51 | 7 | 0 | 7 | 0 | 83 | 206 | 28 | 0 | 28 | 0 |
| Wholesale Trade | 58 | 52 | 105 | 26 | 21 | 0 | 255 | 232 | 464 | 116 | 93 | 0 |
| Retail Trade | 22 | 0 | 44 | 281 | 18 | 4 | 93 | 0 | 187 | 1,182 | 78 | 16 |
| T.W.U. | 17 | 18 | 78 | 7 | 21 | 0 | 74 | 81 | 341 | 31 | 93 | 0 |
| Information | 60 | 95 | 0 | 24 | 60 | 0 | 259 | 415 | 0 | 104 | 259 | 0 |
| Finance & Insurance | 6 | 1 | 1 | 24 | 85 | 1 | 25 | 5 | 5 | 99 | 355 | 5 |
| Real Estate & Rental Leasing | 1 | 0 | 0 | 5 | 18 | 0 | 5 | 1 | 1 | 21 | 75 | 1 |
| Professional & Technical Services | 18 | 4 | 4 | 72 | 259 | 4 | 80 | 16 | 16 | 319 | 1,148 | 16 |
| Management of Companies | 48 | 0 | 0 | 48 | 472 | 30 | 212 | 0 | 0 | 212 | 2,090 | 132 |
| Administration & Waste | 24 | 5 | 5 | 95 | 343 | 5 | 105 | 21 | 21 | 422 | 1,518 | 21 |
| Education | 13 | 3 | 3 | 26 | 78 | 138 | 56 | 11 | 11 | 111 | 334 | 590 |
| Health Care | 14 | 0 | 0 | 102 | 204 | 360 | 59 | 0 | 0 | 440 | 881 | 1,556 |
| Arts, Entertainment, & Recreation | 9 | 0 | 0 | 49 | 31 | 0 | 38 | 0 | 0 | 207 | 132 | 0 |
| Accommodation & Food | 19 | 3 | 3 | 186 | 53 | 3 | 79 | 11 | 11 | 790 | 226 | 11 |
| Other Services | 7 | 1 | 1 | 28 | 100 | 1 | 30 | 6 | 6 | 120 | 431 | 6 |
| Public Administration | 2 | 0 | 0 | 5 | 15 | 12 | 7 | 1 | 1 | 22 | 63 | 52 |
| TOTAL: | 364 | 295 | 278 | 994 | 1,808 | 558 | 1,583 | 1,281 | 1,215 | 4,263 | 7,899 | 2,406 |
| | INDUSTRIAL | | | COMMERCIAL | | | INDUSTRIAL | | | COMMERCIAL | | |

| SCENARIO 2 | Five-Year Forecast | | | | | | 20-Year Forecast | | | | | |
|-----------------------------------|--------------------|------------|--------------|--------------|--------------|---------------|------------------|--------------|--------------|--------------|---------------|---------------|
| | General | | Warehouse/ | Retail | Office | Institutional | General | | Warehouse/ | Retail | Office | Institutional |
| | Flex | Manuf. | Distribution | | | | Flex | Manuf. | Distribution | | | |
| Construction | 43 | 96 | 43 | 24 | 34 | 0 | 206 | 457 | 206 | 114 | 160 | 0 |
| Manufacturing | 51 | 128 | 17 | 0 | 17 | 0 | 216 | 539 | 72 | 0 | 72 | 0 |
| Wholesale Trade | 51 | 46 | 92 | 23 | 18 | 0 | 223 | 202 | 405 | 101 | 81 | 0 |
| Retail Trade | 32 | 0 | 64 | 408 | 27 | 5 | 139 | 0 | 277 | 1,757 | 116 | 23 |
| T.W.U. | 10 | 11 | 46 | 4 | 13 | 0 | 43 | 46 | 196 | 18 | 53 | 0 |
| Information | 57 | 91 | 0 | 23 | 57 | 0 | 247 | 396 | 0 | 99 | 247 | 0 |
| Finance & Insurance | 10 | 2 | 2 | 38 | 138 | 2 | 41 | 8 | 8 | 164 | 592 | 8 |
| Real Estate & Rental Leasing | 4 | 1 | 1 | 15 | 55 | 1 | 17 | 3 | 3 | 67 | 239 | 3 |
| Professional & Technical Services | 27 | 5 | 5 | 109 | 393 | 5 | 127 | 25 | 25 | 508 | 1,830 | 25 |
| Management of Companies | 58 | 0 | 0 | 58 | 570 | 36 | 261 | 0 | 0 | 261 | 2,574 | 163 |
| Administration & Waste | 37 | 7 | 7 | 149 | 535 | 7 | 174 | 35 | 35 | 696 | 2,506 | 35 |
| Education | 18 | 4 | 4 | 37 | 111 | 196 | 81 | 16 | 16 | 162 | 485 | 857 |
| Health Care | 25 | 0 | 0 | 191 | 382 | 675 | 118 | 0 | 0 | 884 | 1,768 | 3,123 |
| Arts, Entertainment, & Recreation | 14 | 0 | 0 | 79 | 50 | 0 | 63 | 0 | 0 | 345 | 219 | 0 |
| Accommodation & Food | 37 | 5 | 5 | 371 | 106 | 5 | 166 | 24 | 24 | 1,661 | 475 | 24 |
| Other Services | 10 | 2 | 2 | 38 | 138 | 2 | 42 | 8 | 8 | 168 | 606 | 8 |
| Public Administration | 2 | 0 | 0 | 5 | 15 | 12 | 7 | 1 | 1 | 22 | 64 | 52 |
| TOTAL: | 487 | 399 | 290 | 1,572 | 2,658 | 948 | 2,169 | 1,762 | 1,277 | 7,027 | 12,087 | 4,322 |
| | INDUSTRIAL | | | COMMERCIAL | | | INDUSTRIAL | | | COMMERCIAL | | |

FIGURE 6.05: PROJECTED SPACE DEMAND BY BUILDING TYPOLOGY, FIVE AND TWENTY YEAR PLANNING HORIZONS

| SCENARIO 1 | | 5-Year Forecast | | | | 20-Year Forecast | | | |
|----------------------|--------------------------|--------------------------|--------------------|----------------------------|------------------------------|--------------------------|--------------------|----------------------------|------------------------------|
| Building Type | | Employment Growth | SF/Employee | Stablized Occupancy | Projected Demand (SF) | Employment Growth | SF/Employee | Stablized Occupancy | Projected Demand (SF) |
| INDUSTRIAL | Flex | 364 | 625 | 90% | 252,674 | 1,583 | 625 | 90% | 1,099,254 |
| | General Man | 295 | 800 | 90% | 262,030 | 1,281 | 800 | 90% | 1,138,264 |
| | Warehouse | 278 | 1250 | 90% | 386,054 | 1,215 | 1250 | 90% | 1,687,337 |
| | Total Industrial: | 937 | 866 | | 900,758 | 4,078 | 866 | | 3,924,856 |
| COMMERCIAL | Retail | 994 | 450 | 90% | 496,803 | 4,263 | 450 | 90% | 2,131,728 |
| | Office | 1,808 | 300 | 90% | 602,648 | 7,899 | 300 | 90% | 2,632,945 |
| | Institutional | 558 | 500 | 90% | 309,967 | 2,406 | 500 | 90% | 1,336,426 |
| | Total Commercial: | 3,359 | 378 | | 1,409,418 | 14,568 | 377 | | 6,101,099 |
| SCENARIO 2 | | 5-Year Forecast | | | | 20-Year Forecast | | | |
| Building Type | | Employment Growth | SF/Employee | Stablized Occupancy | Projected Demand (SF) | Employment Growth | SF/Employee | Stablized Occupancy | Projected Demand (SF) |
| INDUSTRIAL | Flex | 487 | 625 | 90% | 338,087 | 2,169 | 625 | 90% | 1,506,315 |
| | General Man | 399 | 800 | 90% | 355,108 | 1,762 | 800 | 90% | 1,566,181 |
| | Warehouse | 290 | 1250 | 90% | 403,199 | 1,277 | 1250 | 90% | 1,773,318 |
| | Total Industrial: | 1,177 | 839 | | 1,096,393 | 5,208 | 837 | | 4,845,814 |
| COMMERCIAL | Retail | 1,572 | 450 | 90% | 786,079 | 7,027 | 450 | 90% | 3,513,706 |
| | Office | 2,658 | 300 | 90% | 885,879 | 12,087 | 300 | 90% | 4,029,124 |
| | Institutional | 948 | 500 | 90% | 526,493 | 4,322 | 500 | 90% | 2,401,179 |
| | Total Commercial: | 5,177 | 382 | | 2,198,451 | 23,437 | 382 | | 9,944,009 |

FIGURE 6.06: PROJECTED LAND DEMAND BY BUILDING TYPOLOGY, FIVE AND TWENTY YEAR PLANNING HORIZONS

| SCENARIO 1 | | 5-Year Forecast | | | 20-Year Forecast | | |
|----------------------|--------------------------|--------------------------|-----------------------|---------------------------------|--------------------------|-----------------------|---------------------------------|
| Building Type | | Space Demand (SF) | Average F.A.R. | Projected Demand (Acres) | Space Demand (SF) | Average F.A.R. | Projected Demand (Acres) |
| INDUSTRIAL | Flex | 252,674 | 0.33 | 17.8 | 1,099,254 | 0.33 | 77.6 |
| | General Man | 262,030 | 0.33 | 18.5 | 1,138,264 | 0.33 | 80.4 |
| | Warehouse | 386,054 | 0.33 | 27.3 | 1,687,337 | 0.33 | 119.1 |
| | Total Industrial: | 900,758 | 3.08 | 63.6 | 3,924,856 | 3.08 | 277.1 |
| COMMERCIAL | Retail | 496,803 | 0.34 | 33.8 | 2,131,728 | 0.34 | 145.0 |
| | Office | 602,648 | 0.40 | 34.4 | 2,632,945 | 0.40 | 150.2 |
| | Institutional | 309,967 | 0.60 | 11.9 | 1,336,426 | 0.60 | 51.5 |
| | Total Commercial: | 1,409,418 | 2.48 | 80.1 | 6,101,099 | 2.47 | 346.6 |

| SCENARIO 2 | | 5-Year Forecast | | | 20-Year Forecast | | |
|----------------------|--------------------------|--------------------------|-----------------------|---------------------------------|--------------------------|-----------------------|---------------------------------|
| Building Type | | Space Demand (SF) | Average F.A.R. | Projected Demand (Acres) | Space Demand (SF) | Average F.A.R. | Projected Demand (Acres) |
| INDUSTRIAL | Flex | 338,087 | 0.33 | 23.9 | 1,506,315 | 0.33 | 106.4 |
| | General Man | 355,108 | 0.33 | 25.1 | 1,566,181 | 0.33 | 110.6 |
| | Warehouse | 403,199 | 0.33 | 28.5 | 1,773,318 | 0.33 | 125.2 |
| | Total Industrial: | 1,096,393 | 3.08 | 77.4 | 4,845,814 | 3.08 | 342.1 |
| COMMERCIAL | Retail | 786,079 | 0.34 | 53.5 | 3,513,706 | 0.34 | 239.0 |
| | Office | 885,879 | 0.40 | 50.5 | 4,029,124 | 0.40 | 229.8 |
| | Institutional | 526,493 | 0.60 | 20.3 | 2,401,179 | 0.60 | 92.5 |
| | Total Commercial: | 2,198,451 | 2.46 | 124.3 | 9,944,009 | 2.46 | 561.2 |

In Figure 6.04, the five and twenty year employment forecasts by sector is converted to employment by development typology. Figure 6.05 then converts employment growth by development typology into square foot of demand based on an assumed average square foot per employee and assuming a 90% stabilized occupancy rate. This yields projected short-term (5-year) and long-term (20-year) demand projections by building type under both prospective growth scenarios. The forecast is then translated into land need, expressed in acreage (Figure 6.06). This is based on assumed Floor Area Ratios (FAR) by product type.

The demand projections indicate the following needs over the five- and twenty-year horizons:

FIGURE 6.07: SUMMARY OF FORECASTED EMPLOYMENT NEED, CITY OF BEAVERTON USB

| Category Building Type | Five-Year Demand | | Twenty-Year Demand | |
|------------------------------|------------------|-------|--------------------|-------|
| | Square Feet | Acres | Square Feet | Acres |
| Industrial | | | | |
| <i>Flex</i> | 338,087 | 23.9 | 1,506,315 | 106.4 |
| <i>General Manufacturing</i> | 355,108 | 25.1 | 1,566,181 | 110.6 |
| <i>Warehouse</i> | 403,199 | 28.5 | 1,773,318 | 125.2 |
| <i>Total-Industrial</i> | 1,096,393 | 77.4 | 4,845,814 | 342.1 |
| Commercial | | | | |
| <i>Retail</i> | 786,079 | 53.5 | 3,513,706 | 239.0 |
| <i>Office</i> | 885,879 | 50.5 | 4,029,124 | 229.8 |
| <i>Institutional</i> | 526,493 | 20.3 | 2,401,179 | 92.5 |
| <i>Total- Commercial</i> | 2,198,451 | 124.3 | 9,944,009 | 561.2 |
| Overall Total | 3,294,845 | 201.7 | 14,789,824 | 903.4 |

Additional Considerations in Land Demand

Beyond a consideration of gross acreage, there is a significantly broader range of site characteristics that industries would require to accommodate future growth. We summarize some key findings here:

- Industrial buildings are generally more susceptible to slope constraints due to larger building footprints. For a site to be competitive for most industrial uses, a 5% slope is the maximum for development sites. Office and commercial uses are generally smaller and more vertical, allowing for slopes up to 15%.
- Most industries require some direct access to a major transportation route, particularly manufacturing and distribution industries that move goods throughout the region and beyond. A distance of 10 to 20 miles to a major interstate is generally acceptable for most manufacturing activities, but distribution activities require 5 miles or less and generally prefer a direct interstate linkage. Visibility is highly important to most commercial activities and site location along a major commercial arterial is commonly required.
- Railroad access is preferred for most manufacturing activities, with the exception of high-tech. Some users require direct on-site access while others generally make use of a local or regional hub.

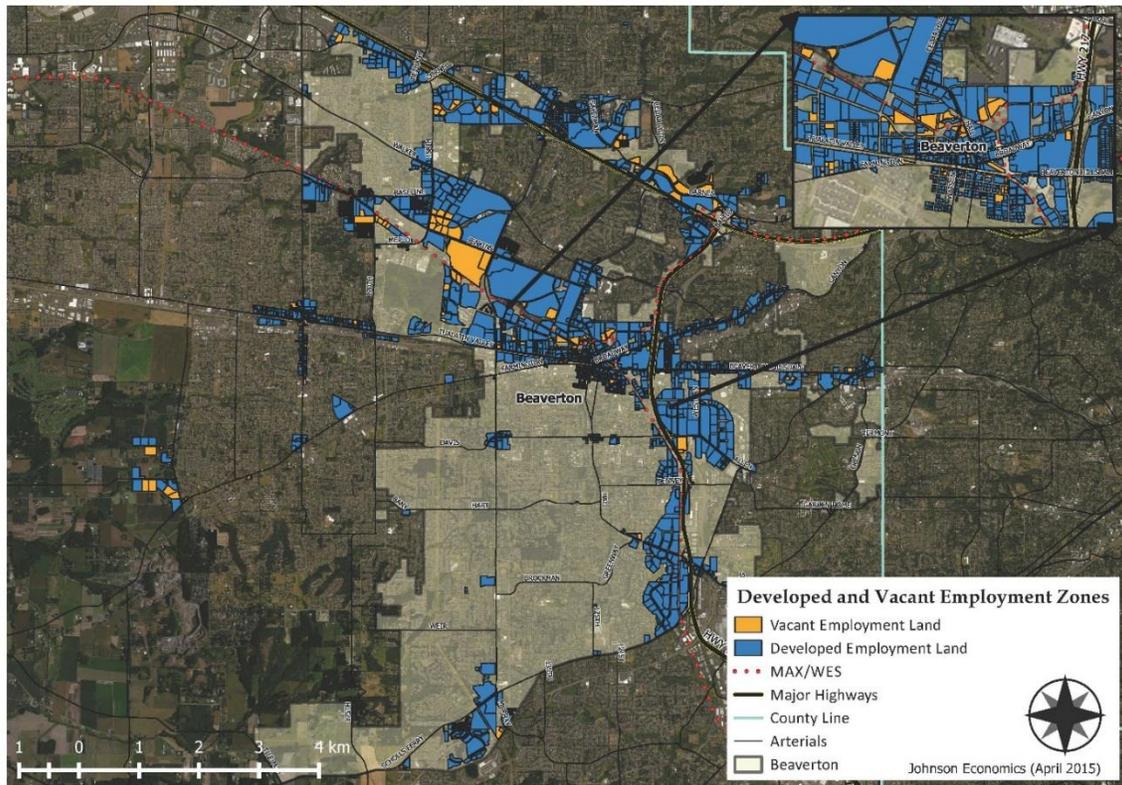
- Access and capacity for water, power, gas, and sewer infrastructure is more important to industrial than commercial operations. Water/sewer lines of up to 10" are commonly required for large manufacturers. Appendix A details utility infrastructure requirements by typology.
- Fiber telecommunications networks are likely to be increasingly required in site selection criteria for many commercial office and manufacturing industries. Medical, high-tech, creative office, research & development, and most professional service industries will prefer or require strong fiber access in the coming business cycles.

VII. BUILDABLE LAND INVENTORY

The City of Beaverton completed a buildable lands inventory within its Urban Service Boundary (USB) during the first quarter of 2015, documenting the city's vacant and developable land supply. This section summarizes the inventory and associated capacity to accommodate employment growth.

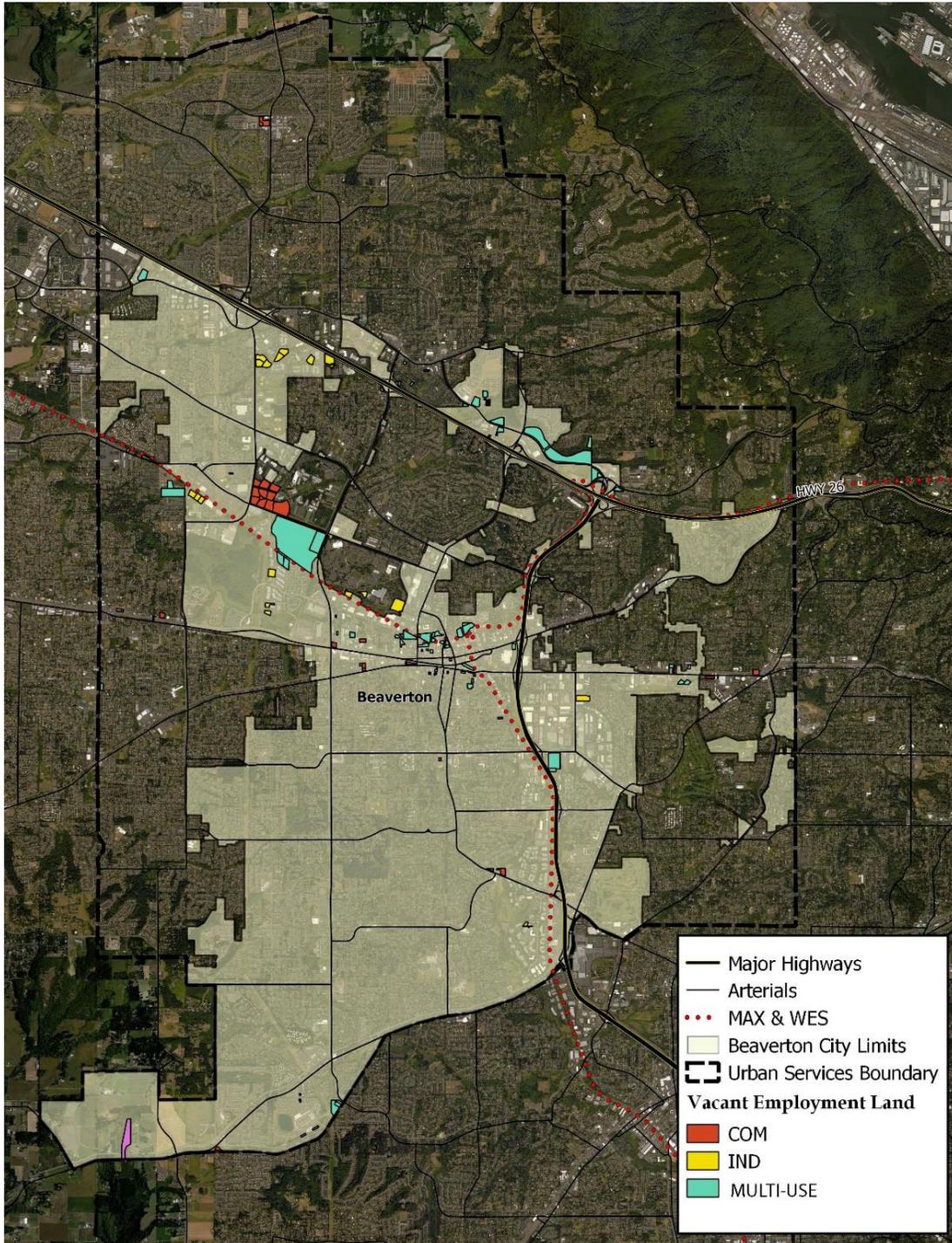
The City of Beaverton's capacity for additional employment growth is represented by a limited supply of vacant property, most notably near Nike and Highway 26, as well as development sites within downtown Beaverton. The remaining capacity is largely associated with likely redevelopment of properties with relatively low current improvement values. These include older structures as well as a significant level of older industrial parks that have the potential to increase their intensity of use over time.

FIGURE 7.01: DEVELOPED AND VACANT EMPLOYMENT PROPERTY, CITY OF BEAVERTON USB



Vacant and developable property typically represents the primary capacity of a jurisdiction for new employment. Within the city's USB, vacant and developable property that can accommodate employment uses are currently quite limited. The following map shows the identified vacant parcels by generalized zoning designation. These designations reflect categories developed by Metro to standardize zoning across multiple jurisdictions. The multi-use designation reflects zones that allow employment and residential uses.

FIGURE 7.02: EMPLOYMENT BUILDABLE LAND INVENTORY, BEAVERTON, OREGON USB (2015)



City of Beaverton: Vacant Employment Land

Source: City of Beaverton, Johnson Economics

The City’s recently completed Buildable Lands Inventory (BLI) shows a total of 392 vacant acres within the City’s Urban Service Boundary, representing 10.5% of the total inventory of sites zoned for employment uses in the area. The vacant inventory includes a total of 419 parcels, reflecting an average parcel size of 0.9 acres. The inventory includes only one vacant parcel greater than 25 acres in size, and one site between 10 and 25 acres in size.

As part of our analysis, we used the BLI information to assess the extent to which properties would be plausible candidates for redevelopment. This analysis was based on an assumed threshold price, which would be reflective of the market value of the underlying property under a new development scenarios. The Real Market Value (RMV) per square foot of developable property was compared to this assumed threshold price, and properties in which the RMV was below the threshold price were designated as having redevelopment potential. The assumed threshold land values were assumed as follows:

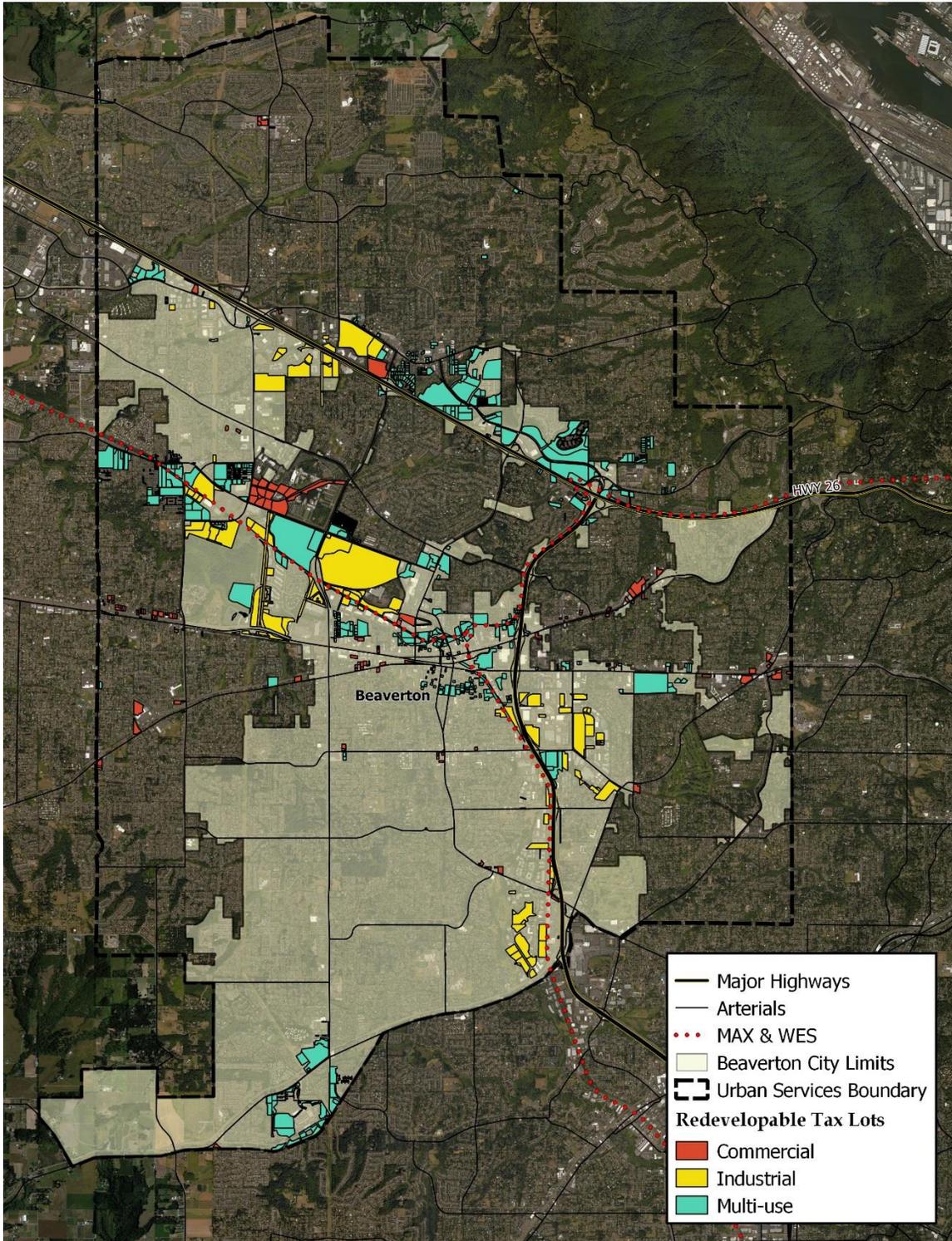
| General Use | Generalized Categories | Threshold Price |
|--------------------------|------------------------|-----------------|
| Commercial | MUR, CC, CG, CN | \$20 PSF |
| Office Commercial | CO | \$15 PSF |
| Industrial | IL, IO | \$8 PSF |

The threshold rates are highly generalized, but allow for the identification of parcels that have the potential to redevelop with a higher intensity of use. Identification of a parcel as having redevelopment potential indicates a higher likelihood of redevelopment, and that these sites have the potential to provide additional capacity to meet future needs. Redevelopment is inherently more challenging than green-field development, and this potential capacity should be discounted vis-à-vis capacity in vacant sites.

This analysis yielded an additional 839 acres that would be considered to be potentially redevelopable within the USB, of which 602 acres are within the City of Beaverton. For purposes of this analysis, we discounted the capacity of the redevelopment acreage by half to reflect the loss of existing improvements at redevelopment, as well as the likelihood that non-economic reasons will keep these sites from redeveloping over the planning horizon.

Parcels identified as having redevelopment potential in addition to vacant sites are outlined in the following map:

FIGURE 7.03: MAP OF PARCELS WITH INDICATED EMPLOYMENT CAPACITY, URBAN SERVICE BOUNDARY



The preceding maps include commercial property adjacent to the Nike Campus that is not technically in the city's USB, and which is currently being developed.

The following tables summarize the BLI for employment uses in the City of Beaverton’s urban services boundary, as well as in the current city limits:

**FIGURE 7.04: EMPLOYMENT BUILDABLE LAND INVENTORY, BY GENERALIZED ZONE
URBAN SERVICE BOUNDARY (2015)**

| URBAN SERVICES BOUNDARY | Zoning Code | | | | | | | | Total |
|---|-------------|-------|-------|------|------|-------|-------|-------|---------|
| | MUR | CC | CG | CN | CO | IC | IL | IO | |
| Developed Acreage | 1,495.3 | 370.8 | 221.6 | 56.5 | 41.3 | 173.9 | 572.8 | 376.2 | 3,308.4 |
| Vacant Acreage | 280.2 | 37.1 | 9.3 | 2.4 | 1.8 | 0.2 | 13.7 | 47.1 | 392.0 |
| Parcels | | | | | | | | | |
| <i>Developed</i> | 2,832 | 285 | 168 | 98 | 93 | 43 | 148 | 106 | 3,773 |
| <i>Vacant</i> | 323 | 39 | 16 | 5 | 4 | 2 | 11 | 19 | 419 |
| Avg. Parcel Size | | | | | | | | | |
| <i>Developed</i> | 0.5 | 1.3 | 1.3 | 0.6 | 0.4 | 4.0 | 3.9 | 3.5 | 0.9 |
| <i>Vacant</i> | 0.9 | 1.0 | 0.6 | 0.5 | 0.5 | 0.1 | 1.2 | 2.5 | 0.9 |
| Vacant Parcel Distribution by Size | | | | | | | | | |
| <i>< 1 acres</i> | 270 | 25 | 15 | 5 | 3 | 2 | 7 | 2 | 329 |
| <i>1-5 acres</i> | 44 | 14 | 1 | 0 | 1 | 0 | 4 | 15 | 79 |
| <i>6-10 acres</i> | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 |
| <i>11-25 acres</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| <i>25 + acres</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Redevelopment Capacity | | | | | | | | | |
| <i>Threshold Price Assumption:</i> | \$20 | \$20 | \$20 | \$20 | \$15 | \$8 | \$8 | \$8 | |
| <i>Potential Redevelopable Acres:</i> | 448.2 | 46.5 | 39.1 | 5.8 | 2.1 | 48.1 | 216.3 | 33.3 | 839 |

SOURCE: City of Beaverton's Buildable Lands Inventory

**FIGURE 7.05: EMPLOYMENT BUILDABLE LAND INVENTORY, BY GENERALIZED ZONE
CITY OF BEAVERTON, OREGON (2015)**

| CITY OF BEAVERTON | Zoning Code | | | | | | | | Total |
|---|-------------|------|-------|------|------|-------|-------|-------|---------|
| | MUR | CC | CG | CN | CO | IC | IL | IO | |
| Developed Acreage | 1,047.6 | 0.0 | 178.4 | 56.5 | 0.6 | 173.9 | 303.6 | 376.2 | 2,136.8 |
| Vacant Acreage | 161.8 | 0.0 | 8.9 | 2.4 | 0.0 | 0.2 | 5.3 | 47.1 | 225.7 |
| Parcels | | | | | | | | | |
| <i>Developed</i> | 1,566 | 0 | 112 | 98 | 1 | 43 | 105 | 106 | 2,031 |
| <i>Vacant</i> | 243 | 0 | 15 | 5 | 0 | 2 | 7 | 19 | 291 |
| Avg. Parcel Size | | | | | | | | | |
| <i>Developed</i> | 0.7 | 0.0 | 1.6 | 0.6 | 0.6 | 4.0 | 2.9 | 3.5 | 1.1 |
| <i>Vacant</i> | 0.7 | 0.0 | 0.6 | 0.5 | 0.0 | 0.1 | 0.8 | 2.5 | 0.8 |
| Vacant Parcel Distribution by Size | | | | | | | | | |
| <i>< 1 acres</i> | 219 | 0 | 14 | 5 | 0 | 2 | 5 | 2 | 247 |
| <i>1-5 acres</i> | 18 | 0 | 1 | 0 | 0 | 0 | 2 | 15 | 36 |
| <i>6-10 acres</i> | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 |
| <i>11-25 acres</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>25 + acres</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Redevelopment Capacity | | | | | | | | | |
| <i>Threshold Price Assumption:</i> | \$20 | \$20 | \$20 | \$20 | \$15 | \$8 | \$8 | \$8 | |
| <i>Potential Redevelopable Acres:</i> | 239.8 | 0.0 | 25.6 | 5.8 | 0.0 | 49.5 | 175.5 | 106.0 | 602 |

SOURCE: City of Beaverton's Buildable Lands Inventory

The City of Beaverton accounts for 65% of developed acreage, and 58% of vacant acreage within the USB.

FIGURE 7.06: CAPACITY, USB AND CITY

| | USB | CITY | % USB |
|------------------------------------|---------|---------|-------|
| Developed Acreage | 3,308.4 | 2,136.8 | 65% |
| Vacant Acreage | 392.0 | 225.7 | 58% |
| Vacant Parcel Distribution by Size | | | |
| < 1 acres | 329 | 247 | 75% |
| 1-5 acres | 79 | 36 | 46% |
| 6-10 acres | 9 | 7 | 78% |
| 11-25 acres | 1 | 0 | 0% |
| 25 + acres | 1 | 1 | 100% |
| Potential Redevelopable Acres: | 839 | 602 | 72% |

Both the USB and city’s inventory are somewhat unusual in that the remaining capacity is weighted more towards redevelopment than vacant property. In terms of vacant land, the USB has approximately 11.8% of its land that is undeveloped, while the ratio within Beaverton is 10.6%. As a result, future economic growth is largely dependent upon a significant level of redevelopment and/or intensification of uses on already developed sites.

VIII. RECONCILIATION OF NEED AND CAPACITY

The last step of the analysis is to compare the long-term demand for industrial and commercial land from the land need forecast with the existing supply of industrial and commercial acreage as identified through the Buildable Lands Inventory (BLI). The purpose of the reconciliation is (1) to assess whether the City of Beaverton has an adequate supply of suitable employment land to satisfy economic expansion demands over the short-term (5 years) and long-term (20-years). The reconciliation serves as a basis to determine whether employment forecasts are supportable, as well as information to develop policy measures to increase the available employment land supply and/or increase the intensity of marginal development.

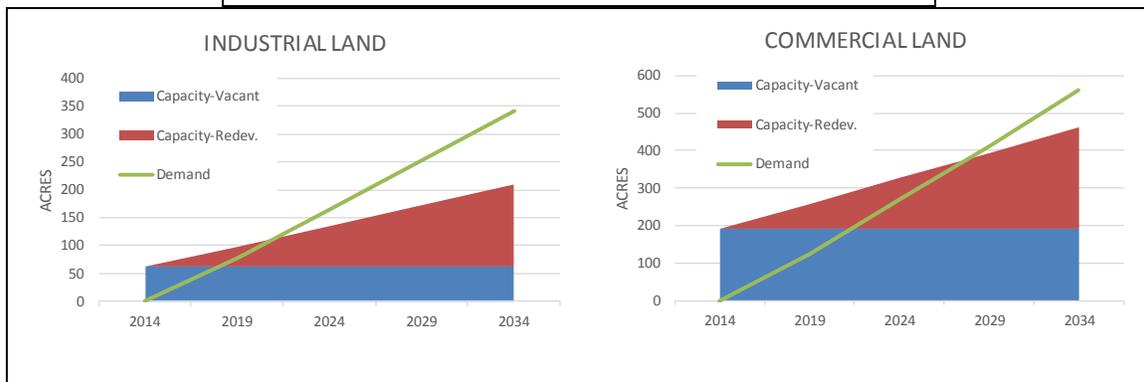
In this section we compared the existing supply of buildable industrial and commercial acreage over the planning period for the assumed growth scenario. **It is important to remember that the different categories of employment land are not (necessarily) substitutable.** For instance, a shortage of 10 acres of commercial land, and a surplus of 10 acres of industrial land do not cancel each other.

For the purposes of this analysis, we use what has previously been referred to as Scenario 2 for our employment forecast. These forecasts reflect historic and recent trends, and are most consistent with previously used forecasts as well as Metro’s current urban growth report.

Figure 8.1 shows the findings of land need for commercial, industrial and institutional uses based on the employment growth scenario. Institutional uses include hospitals, assisted living and other care facilities, post-secondary education facilities, etc. Under the assumed employment growth scenario, the capacity within the USB is insufficient to accommodate the projected aggregate twenty year needs for both commercial and industrial uses.

FIGURE 8.1: RECONCILIATION OF PROJECTED 5- AND 20-YEAR LAND NEED AND EXISTING SUPPLY

| | Land Demand (acres) | | Vacant Acres | Redev. Capacity |
|------------------------------|---------------------|---------|--------------|-----------------|
| | 5-Year | 20-Year | | |
| Industrial | | | | |
| <i>Flex</i> | 23.9 | 106.4 | | |
| <i>General Manufacturing</i> | 25.1 | 110.6 | | |
| <i>Warehouse</i> | 28.5 | 125.2 | | |
| <i>Total</i> | 77.4 | 342.1 | 61.1 | 148.9 |
| Commercial | | | | |
| <i>Retail</i> | 53.5 | 239.0 | | |
| <i>Office</i> | 50.5 | 229.8 | | |
| <i>Institutional</i> | 20.3 | 92.5 | | |
| | 124.3 | 561.2 | 190.8 | 270.9 |



The preceding charts assume that all vacant property is available, and that redevelopment capacity will be realized over time during the planning horizon. As illustrated, the projected capacity shortfall is most pronounced for industrial land, with the current capacity likely to be adequate to meet needs over a five year horizon, but unlikely to meet longer term needs. Commercial capacity can accommodate projected demand for a longer period of time. Redevelopment capacity is often not counted in determining short-term needs, as this property is often difficult to develop and not readily available. Excluding redevelopment capacity indicates a short-term supply shortage for industrial space in the USB.

For both major land uses, extensive redevelopment assumptions are required to expand capacity. Redevelopment is difficult to project, and subject to a number of property specific variables. These include owner disposition, lease restrictions, and market factors.

Of the target industries identified, only activewear and apparel and high-tech manufacturing are likely to have highly specific site requirements. Much of the existing capacity within and proximate to the USB is on sites adjacent to Nike’s campus, and currently under control by Nike. For high tech manufacturing, the city’s lack of large sites will likely limit potential for this target industry, but even without a major new

anchor manufacturer, Beaverton is well positioned to benefit from the expansion of support industries associated with this cluster.

Employment Land Need Conclusion

The reconciliation of projected employment needs and available capacity results in a projected shortage of a total of 132 acres of industrial land and 100 acres of commercial property by 2034. This shortage is likely understated, as the aggregate capacity will be an imperfect match to the profile of projected demand. In other words, the full capacity will be realized only if the profile of that capacity is identical to what is demanded. Current capacity within the city is heavily weighted towards redevelopment and/or intensification of uses. While this represents a significant asset in terms of capacity, its availability to the market is inherently difficult to forecast.

IX. RECOMMENDATIONS

The preceding analysis has several key conclusions with respect to the projected need for employment land in the City of Beaverton's USB, as well as capacity to meet that need.

- The City of Beaverton strengths include an outstanding resident workforce as well as a highly regarded school district. The local work force is relatively young and well educated, compared to the State of Oregon as a whole as well as Washington County. The Beaverton School District is highly marketable within the region, supporting a continued ability to attract a quality work force. In addition, it has access to the Highway 26, Highway 217 and Interstate 5 corridors, while Tri-Met's MAX line and WES commuter rail provides reliable connections to downtown Portland, as well major employers throughout Washington and Clackamas Counties.
- The City has significant strength and potential for growth in several key industries. Identified target industry clusters include: activewear; media, advertising and film production; software and information technology; high-tech manufacturing; business support and back office operations; and medical device, health care, and biotechnology.
- Beaverton's downtown core has the potential to both accommodate a significant amount of incremental employment, as well as to serve as an amenity that will increase the attractiveness of the City for employers and residents. The vitality of the downtown core is important for more than accommodating additional employment, as a desirable downtown district can serve as a significant amenity for firms as well as residents. The City has done extensive planning on downtown opportunities, and should continue to pursue development in the district that increases the marketability of the community. In the short-term, this may be weighted more towards residential development, which is typical in this type of district. The addition of more residents will support greater levels of urban amenities such as restaurants and retail, which in turn increases the attractiveness of the area for businesses. Municipal investments in the area such as new facilities can help to catalyze a positive investment cycle when market conditions are still evolving, through increasing visibility and activity levels in the district. The City's Central Beaverton Urban Renewal Area (URA) provides a tool for intervention to support public policy objectives in the area.
- The City's primary challenge in attracting and retaining new growth is a limited inventory of vacant and developable sites. Many of the jurisdiction's major employment concentrations have been developed for decades, often at relatively low intensities. While the use pattern does not represent the current highest and best use development forms, the still considerable value of the existing improvements make redevelopment difficult to achieve. The City's extensive inventory of built space does offer a marketing advantage for firms that are price sensitive in terms of space, as this space can be made available at rates well below what would be necessary to support new construction.
- Over the next twenty years, employment in the USB is expected to grow at an average annual rate of 1.4%, reflecting a net increase of 28,645 jobs. This is expected to require 342 acres of industrial land, and 561 acres of commercial land to accommodate this growth.

- Vacant and developable acreage within the city and USB is insufficient to accommodate this projected growth. For industrial demand, current vacant land supply is insufficient to meet short-term (5-year) needs, while vacant commercial capacity is consumed in less than ten years.
- The City’s ability to accommodate employment needs will be heavily reliant upon redevelopment of properties, as almost 90% of employment land has already been developed. Due to age and quality of construction, the existing inventory of space has suffered competitively vis-à-vis space in neighboring jurisdictions, which have experienced higher occupancy and lease rates.
- The City’s policies should actively encourage redevelopment and/or reinvestment in established business and industrial parks, with an objective of intensifying the usage of these economic resources over time. This may include active intervention to encourage new development for targeted industries and/or in desired development forms. The City can encourage targeted development through mechanisms such as a relaxation of fees and an expedited review process. In addition, the City can work to limit potential conflicting and competitive uses that may discourage targeted conversions and investments.

The City’s 2010 EOA included a series of recommended guiding principles. These have been reorganized and modified in the following table:

| BROAD CATEGORY | |
|-------------------------------------|--|
| Guiding Principle | Description |
| LOCAL QUALITY OF LIFE | |
| Local Economic Opportunities | Actively encourage a range of local employment opportunities with the City, with a focus on targeted industries as well as related support industries. |
| Cultural Diversity | Embrace and build on Beaverton’s existing diversity for comparative economic advantage, quality of life, and civic buzz. Celebrate cultural distinction together with varied in-city options for resident employment, neighborhood living, and community gathering. |
| Educational Excellence | Maintain and enhance Beaverton’s edge of a highly educated adult work force. Create seamless links to network local K-12 and regional higher education 100% in synch with work force requirements posed by existing and prospective employers. Coordinate with groups such as OTBC and PCC to provide supportive workforce training opportunities. |
| Urban Character | Reshape Beaverton as the most vibrant of the Portland metro region’s first tier suburbs. Offer multiple live, work and recreation options including but not limited to a compact, walkable, 24/7 downtown attracting young families as well as established households and urban singles. |
| Community Branding | Brand Beaverton as the go to place for high wage jobs benefitting city residents, entrepreneurial creativity, and business-community partnerships. |

| BROAD CATEGORY | |
|--|---|
| Guiding Principle | Description |
| ECONOMIC DEVELOPMENT | |
| Strong Job Growth | Aim for a growth scenario that at least maintains Beaverton’s current share of regional employment and a strong jobs-housing balance with emphasis on higher wage employment options. Maintaining the historic share of regional growth will be highly challenging due to the City’s capacity constraints. |
| Maintain and Improve the Local Business Environment | Work to maintain Beaverton as a community with: efficient, responsive, supportive and effective local government; strong educational options; varied and quality housing opportunities; extensive commercial amenities; and transportation infrastructure supporting worker commutes as well as the movement of goods. |
| Business Retention and Assistance | Provide support for local businesses along their entire growth path. Actively reach out to local businesses to assess current and anticipated needs, and work to assure that to the extent possible there are local options to accommodate those needs. |
| Economic Resilience | Prioritize rapid recycling of vacant and underutilized properties offering demonstrated development interest and employment potential. Potential strategies may include a waiver or reduction off fees for re-tenanting of existing spaces. |
| Actively Support Target Industries | Provide support for targeted industries, as well as their specific needs. Organize regular outreach to industry representatives. Utilize available incentive programs. |
| Incentives Toolkit | Expand and apply tools ranging from one-to-one business services to downtown urban renewal to community-wide infrastructure investment for targeted economic development. Utilize the City’s tool and programs towards this end, including the Beaverton Urban Renewal Area, Enterprise Zone, Workforce Assistance Program, Downtown Improvement Program, and the Beaverton Brownfields Program. |
| Establish and Monitor Metrics to Track Performance | <p>Monitor annual employment growth as data is available, and track progress by industry and market share against established jurisdictional goals.</p> <p>Set City capital improvement thresholds and regularly monitor performance for return on investment – measured in terms of added jobs and payroll for Beaverton residents, added City revenues versus costs, and net added community benefit.</p> |

| BROAD CATEGORY | |
|-------------------|-------------|
| Guiding Principle | Description |
| CAPACITY | |

| | |
|--|--|
| Growing Up, Not Out | Recognizing Beaverton’s constrained land resources and existing commitment to the Region 2040 Growth Concept, coordinate with Metro and local jurisdictions seeking to focus regional industrial and commercial development within the existing UGB whenever possible. Cooperate with options for large site, traded sector investment not accommodated within the existing UGB but clearly benefitting the entire metro region. |
| Encourage the Utilization of the City’s Employment Capacity | <p>Encourage redevelopment and intensification of uses in developed areas, including the central city as well as the city’s extensive inventory of flex space industrial/business parks. Evaluate the regulatory environment to minimize the impact of uses that can conflict with or negatively impact targeted industries.</p> <p>Continue to work towards transitioning brownfield sites into viable redevelopment sites to support local employment demands.</p> |
| Redevelopment | Accommodate the majority of net added employment via redevelopment of existing industrial and commercial sites rather than greenfield development. Cluster retail to facilitate redevelopment of underutilized commercial sites for Class A multi-level office/service, business park and flex space development. Assure just-in-time capacity for supportive transportation and utility infrastructure. |