INTRODUCTION AND PURPOSE

JOHNSON ECONOMICS was retained by Clackamas County to develop a county specific employment land need analysis for non-retail uses within the Metro Urban Growth Boundary. The County commissioned this analysis to allow the County and its partners to have a focused discussion in the context of regional land supply. The County focused on non-retail jobs, since retail positions are typically paid less. The methodology of this analysis closely follows the approach typically taken in conducting economic opportunities analysis for local areas in accordance with Statewide Planning Goal 9.

This analysis will also draw comparisons to findings in the 2014 Metro Urban Growth Report (UGR). The UGR is a regional planning exercise to determine gross land needs on a macro level. This report is intended to reflect the socioeconomic, geographic, and political conditions unique to Clackamas County, and determine whether Clackamas County's needs are distinct from those of the region. We find that Clackamas County may be considerably underserved with employment land necessary to accommodate economic growth over a 20-year planning period.

Fundamental outcomes of this report include:

- Our general approach was to (1) determine a range of job growth scenarios; (2) translate that into a range of land needed; (3) evaluate that need against the supply of suitable land; and (4) determine whether Clackamas County has a shortage of suitable land, and if so, how much.

- **Steps 1 and 2.** Our analysis shows that there will be demand for 39,800 to 51,600 jobs over the 20-year planning period. This translates into a gross need for 1,649 to 2,728 acres of non-retail employment land.

- **Step 3.** Nearly 45% of Clackamas County's land supply identified in Metro's 2014 Urban Growth Report is located in the City of Damascus. Of the land in Damascus, infrastructure and topographic challenges (nearly three-quarters of all identified supply is classified as constrained or heavily constrained by slopes) plague the vast majority of identified supply. Damascus' own local planning efforts identify land supply 45% below the estimates used in the UGR. We estimate that between 40% and 60% of the land supply identified in the UGR is actually suitable and available for non-retail employment uses.

- **Step 4.** As a result, in a real-world context where market pressures drive development, Clackamas County's inventory of employment land is likely considerably lower than regional estimates. Depending on how much of the land supply is unsuitable, Clackamas County is short between 329 to 934 acres of industrial land and as much as 246 acres of commercial land, with an overall shortage of 329 to 1,180 acres.

EXECUTIVE SUMMARY

National Trends

- The next several decades will mark a generational demographic shift in the United States—one with far reaching implications for the United States economy. Over the next 20-years, the share of the U.S. population age 65 and older will reach 21%, up from 14.5% today. This condition alone will strain workforce availability across many sectors. With the narrowing of global wage differentials, foreign migration is likely to fall as well. To maintain competiveness in the post-Baby Boomer

economy, U.S industries will need to be increasingly productive, with greater reliance on capital investment and technical innovation.

- Despite forthcoming workforce challenges, the U.S. economy is showing signs of reversing the decades-long trend of firms establishing manufacturing operations abroad. For years manufacturing in the United States was in decline. However, many U.S. manufacturers are now looking to re-establish production domestically in light of narrowing labor advantages in foreign markets, high transportation costs, concerns over protection of intellectual property, and a focus on closing supply chains.

- The most likely industries to capitalize on the on-shoring trend are those with products having high weight to value ratios, large domestic markets, and domestic R&D/supply chains. These include metals, chemicals, transportation equipment, machinery, and electronics and appliances.

- The "Shale Revolution" of the last half-decade will have far reaching impacts on U.S. economic activity. Natural gas and oil prices have fallen considerably in recent years. While oil is more susceptible to global influences, natural gas is difficult and costly to export, making domestic production largely captive. The impacts of lower energy prices are expected to translate to the creation of over one million jobs over the next 20-years[1].

- Taken together, the prospects for strong economic growth in the United States are positive, with workforce characteristics presenting the greatest challenge. However, within the United States, migration patterns suggest some areas will be more challenged than others. For example, Oregon is expected to exhibit accelerated net in-migration from other states in the coming years—particularly in the context of natural resource constraints in California and the U.S. Southwest.

State and Local Trends

- Oregon's economic future is not without risks. Many of Oregon's top export industries face considerable global pressure, namely computers and electronics. The interconnectedness of Oregon's economy with global trading patterns will continue to make it susceptible to global political, environmental, or other supply shocks. Domestically, Oregon has been benefiting from a sound housing market recovery. Real wage growth is a concern limiting Oregon's ability to grow domestic demand and attract new workers in the long-term.

- In Clackamas County, demographic growth has held par with the region dating back to 2000. Over this period the county grew at roughly the same pace as Multnomah County, adding nearly 48,000 new residents. While growth has fallen off in the post 2010 recovery, Clackamas County has actually exhibited one of the strongest in-migration rates (6.4 persons/1,000) in the state, outpacing both Washington (4.7) and Multnomah (3.7) County.

- However, the local population skews slightly toward a retiree and pre-retiree base, indicating a lower concentration of residents in their most productive and/or risk-taking years. In the context of economic growth, Clackamas County will have to trend toward attracting more young residents (as exhibited in the migration data) or accept higher commute rates to meet growing workforce needs.

- The current economic cycle in Clackamas County has been characterized by a deeper recession relative to the region and a far more tepid recovery. However, during the "Great Recession", two of

[1] PricewaterhouseCoopers

the economic sectors that saw the greatest contraction were Construction and Real Estate. These two sectors have also famously been sluggish in their recovery during the early phases of the expansion cycle. Unfortunately, in Clackamas County these two sectors comprise an unusually large share of the economy. In other words, much of Clackamas County's perceived "lagging" recovery is isolated in a few sectors. In fact, across most sectors, Clackamas County is performing on par or better than the region. This would suggest that Clackamas County is not at a fundamental disadvantage regionally, rather, its economic fragilities are pronounced in a few industries.

Which Industries are Likely to Grow?

This report utilized a range of analytical tools to determine the types of industries most likely to expand in Clackamas County over the next 20 years.

- 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. In other words: which industries are relatively concentrated in Clackamas County?

- In Clackamas County, the 20 most specialized industries (highest location quotient) account for roughly 43% of employment in the economy. Meanwhile, three out of every five jobs in Clackamas County are in the 20 largest industries. The Clackamas economy is highly specialized in a few sectors, none more so than the manufacturing sector, which accounts for five of the most specialized, and three of the largest industries in the economy. Other highly concentrated sectors include non-durable goods wholesaling, warehousing & truck transportation, and professional, technical, and financial services.

- Another key determinant of target industries is to identify those sectors of the economy that are driving growth. In Clackamas County, industries are generally following the direction of the national economy. Around half the industries are growing and outperforming industry trends, while half are underperforming. Key performing subsectors include, software publishing, administration & support services, banking, and construction.

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. Our methodology is detailed at length in the analysis. This process revealed an identification of eight well-organized industry cluster ecosystems in the County.

- Construction & Real Estate
- Advanced Manufacturing: Metals and Machinery
- Advanced Manufacturing: Computers and Electronics
- Agriculture and Food Processing
- Logistics, Distribution, and Wholesale
- Software Development and Computer Programming
- Business Support and Back Office Operations
- Health Care and Biotechnology

Land Demand

- Our methodology for land demand forecasting begins with forecasts of employment growth by industry over the planning period. We tested four scenarios. The first two relied on regional and state growth rates. These scenarios did not consider large-lot employment impacts.

- Scenario III and Scenario IV utilized alternative industry growth rates that better reflect local economic conditions and opportunities in Clackamas County. These forecasts also considered potential impacts from large-lot recruitments. A detailed overview of our methodology is included in the technical narrative.

- Taken together, our analysis resulted in employment growth rates ranging from 1.4% to 1.8%, or 36,700 to 53,700 jobs over the planning period.

	2014-2035 Job Growth	
Forecast Scenario	**Jobs**	**AAGR**
Baseline Scenario I	39,874	1.4%
Baseline Scenario II	44,274	1.5%
Alternate Scenario III	43,143	1.5%
Alternate Scenario IV	51,608	1.8%

- The next step in the analytical process is to translate employment growth forecasts into land demand. This process utilizes assumptions of employment distribution into varying building types, rates of space utilization, and building coverage ratios by building type. This methodology is consistent with the process used in the Metro UGR.

- We evaluated each of the four employment growth scenarios following this process. For our baseline scenarios (I and II), we used assumptions derived from the aforementioned regional assumptions used for the Metro UGR. For the alternative scenarios (III and IV), architecture and engineering firm Mackenzie developed data on 11 unique building typologies common in Clackamas County. This information is included in Appendix A of this report.

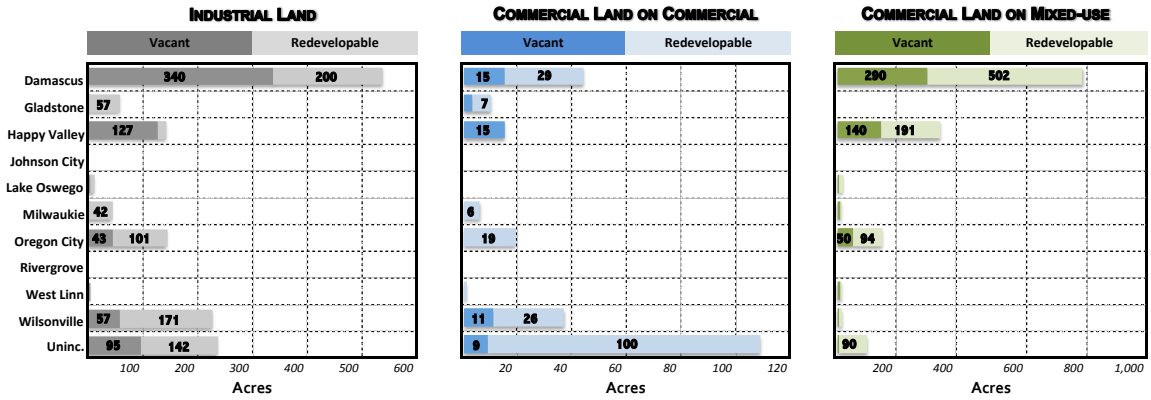
- Taken together, our analysis estimates commercial land demand ranging from 813 to 1,002 acres, and industrial demand ranging from 824 to 1,726 acres.

	2014-2035 Growth		
Forecast Scenario	**Commercial**	**Industrial**	**Total**
Baseline Scenario I	825	824	1,649
Baseline Scenario II	813	1,040	1,853
Alternative Scenario III	816	1,373	2,189
Alternative Scenario IV	1,002	1,726	2,728

- Across all scenarios, the average blended job density ranged from 19.7 (Scenario IV) to 22.4 (Scenario II) jobs per acre.

- Our analysis further reconciled estimated land demand with available supply in Clackamas County. The supply analysis relied on supply estimates and characteristics outlined in the Metro UGR's Buildable Land Inventory. Key observations from the Metro UGR include:

- Over half of Clackamas County's industrial land supply, and two-thirds of commercial land supply is met by "potentially redevelopable" land.
- Over 54% of commercial land supply is accounted for by commercial on "potentially redevelopable" mixed-use land.
- A considerable share of Clackamas' inventory is located in outlying areas on the periphery of the UGB.
- The UGR employment land inventory in Clackamas County has considerable physical constraints ranging from transit access (93% of acreage has "fair access" designation) to slope (74% of acreage classified as "constrained" or "heavily constrained").
- While on net the UGR finds a surplus of land in Clackamas County, there is a considerable disconnect between the geographic locations of supply and demand.



- Clearly, some of the land assumed to be available in the UGB is unsuitable for development. Under every scenario, Clackamas County's land supply is deficient on industrial land.

- Clackamas County's ability to meet employment demand with land and development sites suitable to the market will be directly related to its realized economic growth over the planning period. A lack of suitable industrial and commercial land will translate into missed economic opportunity. Under the most pessimistic scenario, over 8,000 jobs would not be realized due to insufficient land supply.