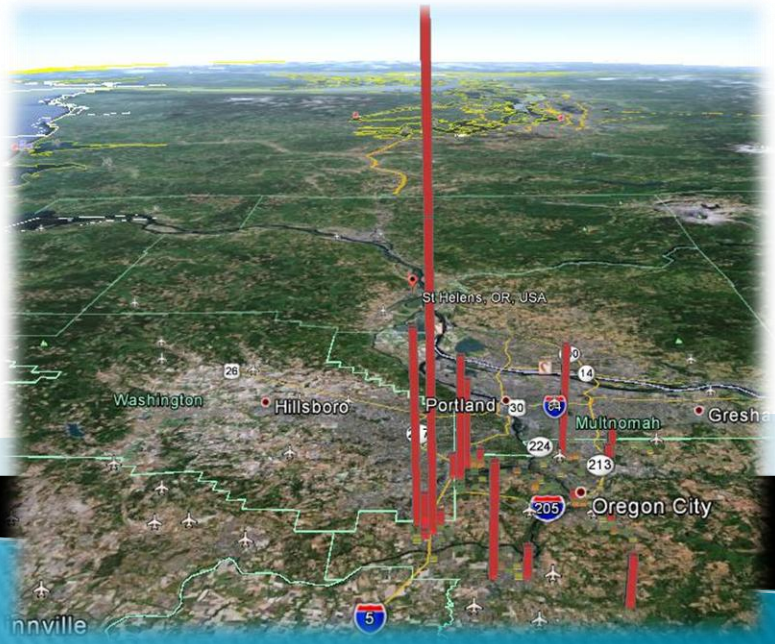
CLACKAMAS COUNTY ECONOMIC LANDSCAPE:

Emerging Trends and Strategies

June 22, 2012

Prepared by

FCS GROUP



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Section I: Introduction and Background

Clackamas County Business and Community Services continues to focus on efforts to broaden the county's knowledge and understanding of the "economic landscape" of the county, specifically within the context of the greater Portland regional economy.

Keeping abreast of current emerging trends enables the county to proactively develop public policies and strategies that enhance economic development potential and create local opportunities that have a beneficial "ripple effect" throughout the region. This report assists the county in achieving its economic goals, which include:

- *Increasing the jobs-to-housing ratio*
- *Increasing the average wages earned within the county*
- *Ensuring that we are efficiently using our land and infrastructure for the highest and best value, and that it balances economic opportunity with quality of life measures*
- *Encouraging the region to gain a similar understanding across jurisdictions that will enable us to market and promote the region in a coordinated and cohesive manner; thereby optimizing all regional opportunities.*

Clackamas County commissioned FCS GROUP (with assistance from Real Urban Geographics) to update prior economic landscape analysis using emerging trends that take into account the impact of the recent national economic recession. Specifically, the FCS GROUP scope of work is "to convey the current economic forces that are driving the Clackamas County local economy…" through several tasks as follows:

- Task 1: Analyze Emerging Trends
- Task 2: Prepare Graphics
- Task 3: Document Findings

BACKGROUND

The prior Clackamas County Economic Landscape analysis provided a deeper understanding of the global context in which Clackamas County and the greater Portland region "competes" for business investment. Prior work was managed by FCS GROUP with strategic input from Michael Gallis and Associates, a renowned international econometric and planning firm. That effort concluded that Clackamas County functions as an integral part of the greater Portland region; and the long-term success of the region is dependent upon our ability to optimize land, infrastructure, and human capital collaboratively. On the local level, county, city and business investment and policy decisions interact to create new opportunities for economic development activity.

The findings contained in the prior 2010 Clackamas County Economic Landscape analysis utilized estimates for employment and other measures of economic activity using 2006 and 2007 data. The prior Economic Landscape study formulated an innovative methodology and approach for analyzing and understanding local and regional economies, using measures of economic "value added" and "output" that go beyond direct payroll and employment activity. Innovative methods were also used to "map" the economic contribution of key industry clusters, and to quantify measures of economic activity per acre of land area within select employment centers.

Because the impact of the recent national economic recession were not documented in the prior Economic Landscape study, it is important to revisit those findings—using a similar "data mining" approach that documents emerging trends and key clusters that are expected to drive the county's economy over the next decade.[1]

This report relies primarily upon data derived from the IMPLAN (Impact Analysis Model for Planning) to convey local county and regional trends. Since the results of the IMPLAN model is based on a methodology that is different from that used by the Oregon Employment Department for estimating employment and calculating earnings, direct comparisons between IMPLAN and Oregon Employment Department data sets is not recommended.

[1] According to the National Bureau of Economic Research, the most recent U.S. recession lasted 19 months (December 2007 to June 2009); the longest recession on record since the beginning of the "Great Depression" which started in August 1929.

Section II. Emerging Trends

This section summarizes the results from the emerging trends analysis. The work undertaken by FCS GROUP to complete the analysis included:

- Compiling and reviewing relevant available background materials, reports, studies, data, land use plans, and related information
- Evaluating direct, indirect and induced economic activity within the Clackamas County and greater Portland regional economy, using the IMPLAN model. Please refer to www.implan.com and the Glossary provided in this report for an explanation of terms and definitions utilized by the IMPLAN model.
- Summarizing results and identifying trends in business formations, employment, and investment activity.

The results included in this document are intended to help inform the Clackamas County and interested local and regional stakeholders about the opportunities within key clusters or business types. The findings could also serve as a potential basis for allocating local funding to assist with constructing projects or managing activities that help influence strategic private investment.

II.A. GLOBAL, NATIONAL AND REGIONAL TRENDS

The Portland MSA is the largest regional economy between San Francisco and Seattle and ranks 5th in the Western United States in terms of regional population. The Portland MSA contains over 2.2 million residents, has a civilian labor force of 1.2 million, and generates an annual GDP in excess of $117 billion.

The U.S. and Oregon economy are currently recovering from an 18-month economic recession that began in December 2007 and officially ended in June 2008, according to the National Bureau of Economic Research. The recent "Great Recession" is the longest on record since 1939 and has resulted in an economic slowdown across the U.S.

As of 2012, moderate economic expansion is occurring nationally and in Oregon. According to the U.S. Bureau of Economic Analysis, real Gross Domestic Product (GDP is the measure of the value of all goods and services produced annually) increased in 2011 at an annual rate of 1.7%; and increased at an annual rate of 3.0% in 2010.

The future GDP outlook is more promising. According to January 2012 projections by the Federal Reserve Bank, national GDP is expected to grow by over 2.2% in 2012, and by over 2.8% in 2013 and 2014. A comparison of GDP and Consumer Price Index (CPI) trends and a 2013 forecast for global developing and developed counties is provided in **Figure 1**.

Oregon's economic growth is tempered by relatively high unemployment rates and home foreclosures that continue to rise. Oregon posted a year-over-year overall job gain of 17,800 between December 2010 and December 2011. At the same time, the state's seasonally adjusted unemployment rate fell from 10.6% in December 2010 to 9.0% in December 2011 (compared to 8.5% for the U.S.). Overall unemployment rates in Clackamas County were slightly higher than the state average with 8.1% unemployment in December 2011, which was more favorable than 11.8% recorded one year prior. It should be noted that Oregon is also experiencing a high level of "under-employment" which is not reflected in these data trends. Fortunately, it appears that the Oregon and the Portland MSA economies are now undergoing a slow economic recovery.

Table 1, GDP and CPI Comparisons, Year-over-Year Change

	GDP			CPI		
	2011	2012	2013	2011	2012	2013
Global (PPP weights)	3.5%	3.2%	3.7%	5.4%	4.2%	4.1%
Global (Market Exchange Rates)	2.4%	2.0%	2.5%	n/a	n/a	n/a
Advanced Economies[1]	1.5%	1.5%	2.1%	2.9%	1.7%	1.5%
United States	1.7%	2.0%	1.9%	3.2%	2.0%	2.0%
Eurozone	1.5%	-0.1%	1.8%	2.7%	1.7%	1.2%
United Kingdom	0.9%	0.8%	1.7%	4.5%	2.1%	1.6%
Japan	-0.2%	2.0%	1.5%	-0.2%	-0.1%	0.1%
Korea	3.6%	3.7%	3.7%	4.0%	3.4%	3.1%
Canada	2.3%	2.3%	3.0%	2.9%	2.2%	2.1%
Developing Economies[1]	5.9%	5.3%	5.7%	8.3%	7.0%	7.1%
China	9.2%	8.2%	8.6%	5.5%	3.6%	3.7%
India	7.3%	7.1%	7.7%	9.0%	7.7%	7.9%
Mexico	4.1%	4.3%	4.5%	3.3%	4.9%	5.3%
Brazil	3.0%	3.3%	4.0%	6.6%	5.5%	5.2%
Russia	4.1%	3.2%	3.0%	8.6%	6.7%	6.6%

Forecast as of: December 7, 2011

[1]Aggregated Using PPP Weights

Source: Wells Fargo Bank.

In Oregon, state economists are predicting a continued upturn in the short term, although the Oregon Office of Economic Analysis calls it "a relatively 'jobless' recovery" with employment growing slowly at about 2.0 percent in 2012. The Oregon economy should experience more rapid growth than the nation as a whole, but this is not expected to generate a corresponding rise in per capita personal income before 2017, since any income gains will be largely offset by increases in the state population.

Trade Overview

The Portland MSA is one of four primary international trade gateways along the West Coast. Rapidly growing Asian and Middle Eastern economies will result in significant increases in

demand for trade into and out of most international and regional ports, including the Port of Portland. Commodity flow forecasts for the region project a doubling of freight volume over the next 20 years. This growth equates to an average annual growth rate of 2-3%, which is faster than the regional population growth rate.

As global and state GDP rises and commodity trade increases, Oregon ports could benefit from increases in imports and export activity. Oregon exports reached a record high of $17.67 billion in 2010 (according to the most recent data by the U.S. Dept. of Commerce) up 18.5% from 2009. Oregon's leading trade partner is China, which now imports about 23% of Oregon exports. Other leading export destinations in decreasing order include Malaysia, Canada, Japan, South Korea, and Taiwan.

Figure 7 Portland-Beaverton-Salem-Vancouver MSA Region

Increasing exports is another positive recent economic trend that is benefiting local goods producers. A falling dollar and improving market in Asian counties spurred growth in Oregon. Oregon exports increased to $18.3 billion in 2011 compared with $17.7 billion in 2010. Categories that evidenced notable improvements included: high tech; metals; agriculture and food production, processed foods, and wood materials (see **Figure 5).**

Figure 5 Top 25 Oregon Exports, Sorted by 2011 Export Value (billions)

Rank	Description	2011 Value	% Change, 2008 - 2011	Clackamas Key Cluster Name
---	**Total OREGON Exports and % Share of U.S. Total**	**$ 18,292**	**-5%**	
---	**Total, Top 25 Commodities and % Share of State Total**	**$ 11,468**	**4%**	
1	PROCESSORS AND CONTROLLERS, ELECTRONIC INTEGRATED CIRCUITS	$ 4,125	-16%	High Tech
2	CEREALS, WHEAT AND MESLIN	$ 1,962	-5%	Food & Bev. Proc.
3	POTASSIUM CHLORIDE	$ 1,064	34%	Ag. & Food Prod.
4	CIVILIAN AIRCRAFT, ENGINES, AND PARTS	$ 446	9%	Metals & Mach. Mfg.
5	DIGITAL PROCESSING UNITS	$ 415	20%	High Tech
6	FERROUS WASTE & SCRAP	$ 358	10%	Metals & Mach. Mfg.
7	MACHINES FOR THE MANUFACTURE OF SEMICONDUTORs OR ELECTRONIC CIRCUITS	$ 302	100%	High Tech
8	PHOTOSENSITIVE SEMICONDUCTOR DEVICES INCLUDING PHOTOVOLTAIC CELLS	$ 280	**See Note**	High Tech
9	ELECTRONIC INTEGRATED CIRCUITS	$ 268	14%	High Tech
10	ROAD TRACTORS FOR SEMI-TRAILERS	$ 217	-49%	
11	CHEM ELEMENTS DOPED FOR USE IN ELECTRONICS	$ 205	18%	High Tech
12	SOYBEANS, WHETHER OR NOT BROKEN	$ 183	**See Note**	Ag. & Food Prod.
13	FORAGE PRODUCTS (HAY, CLOVER, VETCHES, ETC)	$ 175	45%	Ag. & Food Prod.
14	X-RAY FILM IN ROLLS, SENSITIZED, UNEXPOSED, NO PAPER	$ 171	**See Note**	
15	CONIFEROUS WOOD SAWN, SLICED, OVER 6 MM THICK	$ 161	50%	Wood Product Mfg.
16	CONIFEROUS WOOD IN THE ROUGH, NOT TREATED	$ 143	**See Note**	Wood Product Mfg.
17	FOOTWEAR PARTS, HEEL CUSHION, GAITERS ETC	$ 138	41%	
18	COPPER WASTE AND SCRAP	$ 125	56%	
19	KRAFTLINER, UNCOATED UNBLEACHED IN ROLLS OR SHEETS	$ 113	-7%	Metals & Mach. Mfg.
20	X-RAY PLATES & FLAT FILM, SENSITIZED, UNEXPOSED	$ 112	65%	
21	TRUCK, DIESEL ENGINE, GROSS VEHICLE WEIGHT GREATER THAN 20 METRIC TONS	$ 105	-15%	
22	WOOD IN CHIPS OR PARTICLES, CONIFEROUS	$ 103	-6%	Wood Product Mfg.
23	NEWSPRINT, IN ROLLS OR SHEETS	$ 101	31%	Film & Media
24	PARTS AND ATTACHMENTS FOR DERRICKS	$ 98	0%	Metals & Mach. Mfg.
25	CORN (MAIZE), OTHER THAN SEED CORN	$ 96	-24%	Ag. & Food Prod.

Source: U.S. Census.
http://www.census.gov/foreign-trade/statistics/state/data/or.html

Notes:

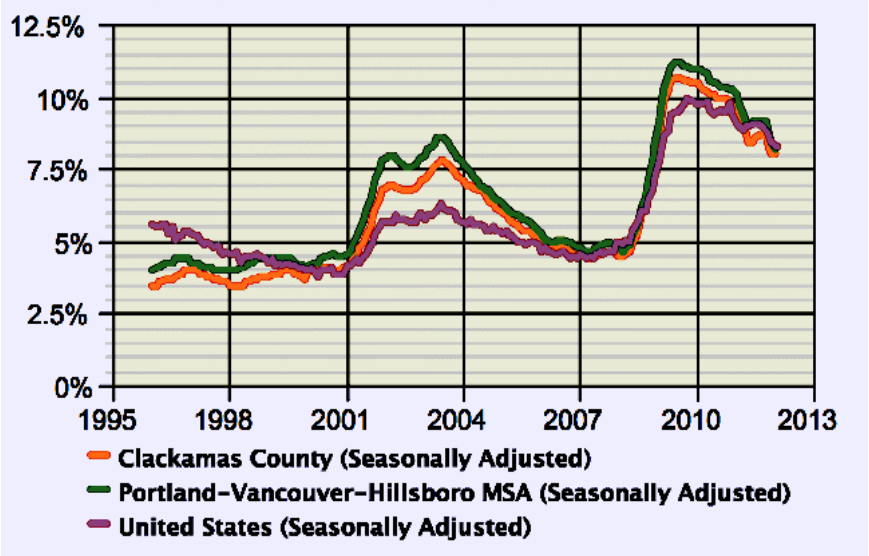
Due to negligible exports in base year the % change may be incongruent with long-term trends at this time

Employment and Unemployment

The greater Portland regional economy has struggled along with much of the nation to shake off the effects of the national and global economic slowdown. After nearly two decades of annual growth, Portland regional economy experienced negative employment growth between December 2007 and January 2010.

Unemployment rates within the nation, region and Clackamas County have shown some improvement over the past year compared to the recent peak in 2009. As indicated in **Figure 3**, the unemployment rate in Clackamas County was 7.7% as of May 2012, down from 8.8% 12 months earlier (May 2011). Measures of unemployment reflect the percentage of the workforce that is actively seeking work over the past 12 months, and does not indicate the total level of under-employment (includes those that have given up looking for work or settled for lower-income positions), which many economists think is almost double these levels.

Figure 3 Unemployment Rate Trends, 2005-2012



Source: Oregon Employment Department, March 2012

Between January 2010 and January 2011 employment in the Portland-Vancouver-Hillsboro MSA region grew by approximately 0.9 percent. Over the past year, the sectors within the MSA that have added jobs the fasted included:

- Construction (+5,300)
- Leisure and Hospitality (+4,400)
- Wholesale Trade (+2,300)
- Retail trade (+2,000)
- Durable goods manufacturing (+1,600)
- Educational services (non-government) (+1,400)

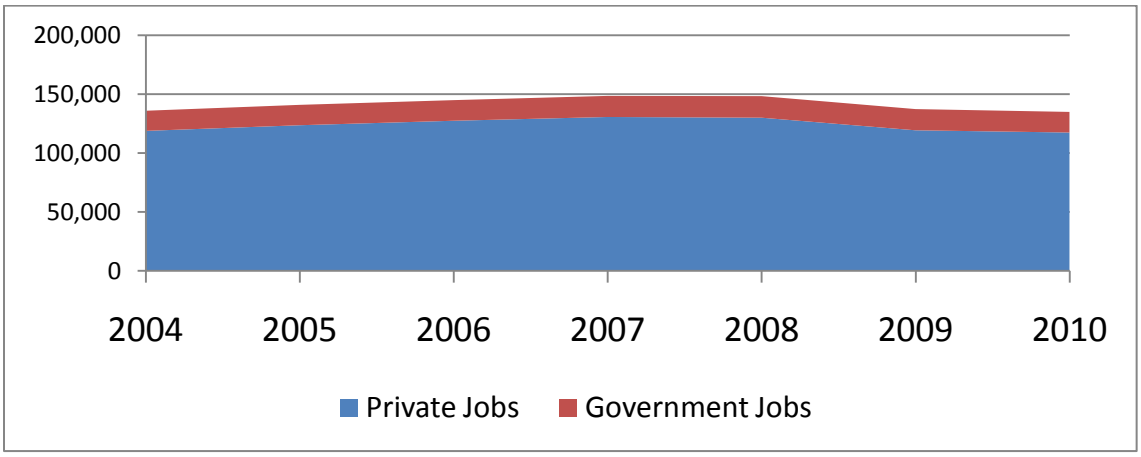
- Health care and social assistance (+1,300)
- Arts, entertainment & recreation (+1,200)
- Professional and business services (+200)
- Software publishers (+200)
- Truck transportation (+100)
- Nondurable goods manufacturing (no change)

The sectors within the MSA showing the largest declines in employment over the past year include:

- Local government (-1,600)
- Administrative and support services (-1,200)
- Information (-600)
- Federal government (-400)
- Financial activities (-400)
- Misc. services (-400)
- Management of companies and enterprises (-300)
- Membership associations and organizations (-1,100)
- State government (-200)

Total "covered employment" in Clackamas County included 134,900 jobs in 2010; well below the 2007 peak of 148,500 jobs and on par with the level of employment recorded back in 2003 (sees **Figure 2).**

Figure 2 Non-farm employment in Clackamas County: now on par with 2003 levels



Source: Oregon Employment Department, seasonally adjusted covered employment.

Population and Earnings

Population levels continue to increase in both Oregon and Clackamas County due to population migration patterns, increases in immigrant population levels, and natural population increases. Population in Clackamas County increased by 41,775 residents over the past decade–to 497,926 people. As indicated in **Figure 6**, the average annual growth rate (AAGR) for population growth in Clackamas County has exceeded that of the tri-county Metro region (includes Clackamas, Multnomah and Washington Counties), the state of Oregon, and the nation.

Figure 6 Population Trends and Projections

Clackamas County outpaces regional, state and national population growth

				Annual Avg. Growth Rate	
	2000	2011	Proj. 2025	2000-2011	2011-2025
Clackamas County	338,391	378,480	497,926	1.0%	2.0%
Tri-County Region*	1,451,650	1,656,775	1,999,623	1.2%	1.4%
Oregon	3,421,399	3,857,625	4,626,015	1.1%	1.3%
USA	281,421,906	311,390,000	357,452,000	0.9%	1.0%

*Source: US Census; regional and county forecast by Oregon Office of Economic Analysis; FCS GROUP. *Tri-county region includes Clackamas, Multnomah and Washington counties.*

An analysis of employee compensation reveals that average income levels for workers in Clackamas County are about 18% below the MSA average (source: 2010 IMPLAN model for Clackamas County and 9-county MSA). This large "wage gap" indicates that there is a relatively high share of low-pay service and retail jobs within Clackamas County. Many of these jobs are likely temporary or part-time jobs without benefits, such as health care and profit sharing. A similar conclusion may be drawn using Oregon Employment Department business payroll data, which measures payroll rather than the broader IMPLAN employee earnings estimates (payroll and benefits).

II.B. EMPLOYMENT GROWTH FORECAST

Over the long-term, Metro anticipates that the region will continue to add people and attract jobs. Metro expects the nine-county Portland-Beaverton-Hillsboro-Vancouver PMSA to add nearly one million new residents by year 2050.[2] Within the larger PMSA, the tri-county Metro region (consisting of Clackamas, Multnomah and Washington counties) is expected to add nearly 336,000 new households and 629,000 new jobs over the 2005-2035 timeframe.

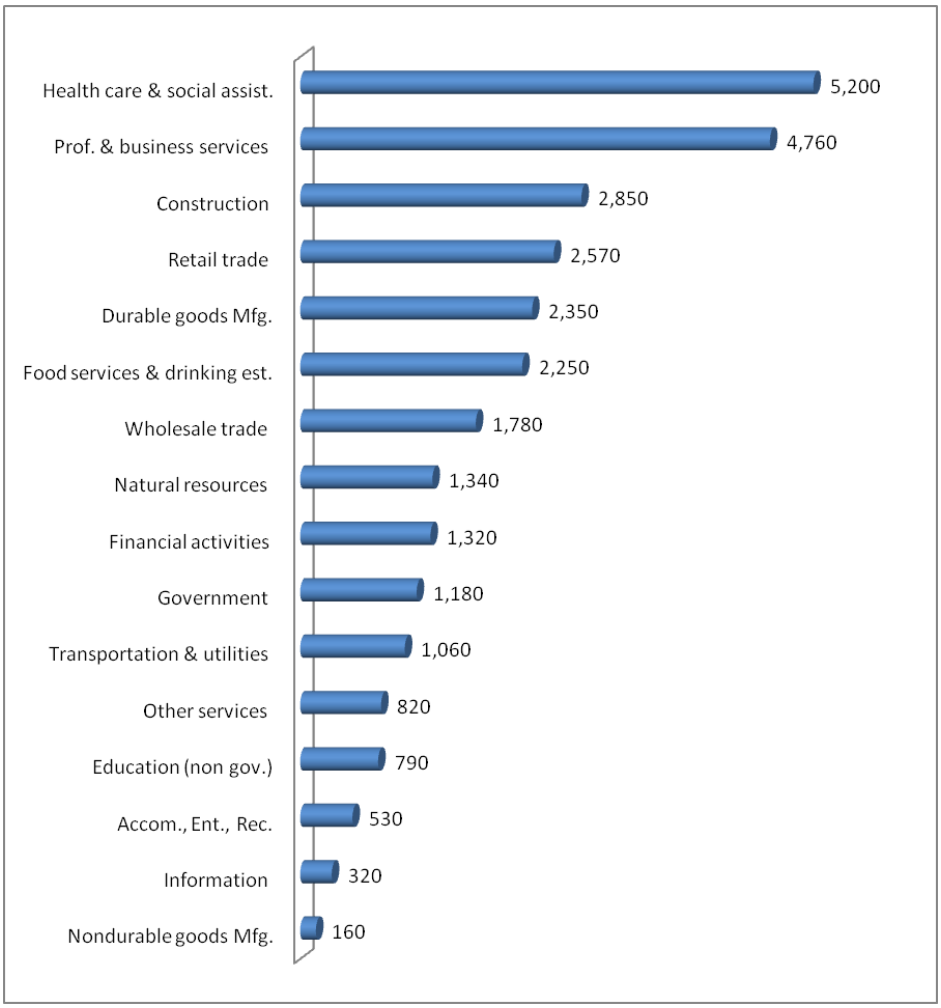
The long-term Metro growth forecast generally indicates that Clackamas County will continue to maintain a relatively low employment-to-housing ratio in comparison to the tri-county region. This finding is likely attributed to the current established regional commuter patterns, with Portland serving as the regional city center, with relatively large employment centers located in and around Airport Way (Multnomah County) and the Sunset Corridor (Washington County).

As the existing urban employment centers within Clackamas County approach build-out (such as Kruse Way, Clackamas Industrial Area, North Milwaukie Industrial Area, and the East Wilsonville Industrial Area), the county will be hard pressed to significantly enhance the ratio of jobs to housing. In fact, unless new employment areas are established in locations such as the Rock Creek Employment Center (Happy Valley) and in and around Oregon City (such as the Beavercreek area) the employment to household ratio could fall below 1.0 in Clackamas County.

While long-term population and employment forecast for growth appear to be very positive for Oregon and the greater Portland region, the short-term forecast is less certain. The 10-year Clackamas County employment growth projections prepared by the Oregon Employment Department (2010 to 2020) anticipate Clackamas County employment will increase from 139,140 to 168,270, or by approximately 29,130 new jobs. Nearly two-thirds of Clackamas County's job growth is expected to occur in three sectors: health care & social services; professional & business services; and leisure & hospitality (includes hotels, motels and restaurants), as indicated in **Figure 9.**

[2] The Portland-Vancouver-Hillsboro MSA consists of nine counties in OR and WA, including: Clackamas, Multnomah, Washington, Columbia, Yamhill, Marion, Polk, Clark and Skamania.

Figure 9 Clackamas County 10-Year Job Growth Forecast (2008-2018)



Source: Oregon Employment Department.

II.C Business Formation Trends

To better understand the nature of business size characteristics, FCS GROUP compiled Dun & Bradstreet data using results available through www.youreconomy.org. FCS GROUP compared the greater Portland region (PMSA) with other regions around the nation in terms of size of existing establishments (public, private and non-profits) for year 2008. The results shown in **Figure 10** indicate that the greater Portland region has a relatively higher concentration of self-employed and small establishments (less than 9 employees) and lower concentration of larger establishments (with over 100-500 employees per firm) than the most of the other regions we analyzed.

Figure 10 How Portland Compares with Other Regions in the USA

Employees

PMSA		Self Employed	Stage 1 (2-9)	Stage 2 (10-99)	Stage 3 (100-499)	Stage 4 (500+)	Total
Portland	Workers	64,059	272,295	280,058	100,906	74,419	**791,737**
	Percent of Total	8%	34%	35%	13%	9%	**100%**
Seattle	Workers	96,631	374,569	442,573	169,656	163,680	**1,247,109**
	Percent of Total	8%	30%	35%	14%	13%	**100%**
Sacremento	Workers	49,989	223,395	242,901	96,511	57,439	**670,235**
	Percent of Total	7%	33%	36%	14%	9%	**100%**
San Jose	Workers	44,073	227,460	282,263	137,702	137,390	**828,888**
	Percent of Total	5%	27%	34%	17%	17%	**100%**
San Diego	Workers	72,609	385,776	419,213	171,072	120,855	**1,169,525**
	Percent of Total	6%	33%	36%	15%	10%	**100%**
Salt Lake City	Workers	35,751	147,740	164,445	64,335	50,449	**462,720**
	Percent of Total	8%	32%	36%	14%	11%	**100%**
Denver	Workers	72,519	364,673	336,837	126,677	126,713	**1,027,419**
	Percent of Total	7%	35%	33%	12%	12%	**100%**
Boise	Workers	23,820	76,390	69,962	22,250	22,287	**214,709**
	Percent of Total	11%	36%	33%	10%	10%	**100%**
Austin	Workers	48,802	199,885	206,141	85,714	53,208	**593,750**
	Percent of Total	8%	34%	35%	14%	9%	**100%**
Total		**508,253**	**2,272,183**	**2,444,393**	**974,823**	**806,440**	**7,006,092**
Percent of Total		**7%**	**32%**	**35%**	**14%**	**12%**	**100%**

Establishments

PMSA		Self Employed	Stage 1 (2-9)	Stage 2 (10-99)	Stage 3 (100-499)	Stage 4 (500+)	Total
Portland	Establishments	64,059	91,954	12,006	588	68	**168,675**
	Percent of Total	38%	55%	7%	0.3%	0.04%	**100%**
Seattle	Establishments	96,631	122,599	18,859	984	109	**239,182**
	Percent of Total	40%	51%	8%	0.4%	0.05%	**100%**
Sacremento	Establishments	49,989	75,884	10,323	596	50	**136,842**
	Percent of Total	37%	55%	8%	0.4%	0.04%	**100%**
San Jose	Establishments	44,073	76,962	11,359	793	106	**133,293**
	Percent of Total	33%	58%	9%	0.6%	0.08%	**100%**
San Diego	Establishments	72,609	131,117	17,847	1,000	114	**222,687**
	Percent of Total	33%	59%	8%	0.4%	0.05%	**100%**
Salt Lake City	Establishments	35,751	51,739	6,811	361	48	**94,710**
	Percent of Total	38%	55%	7%	0.4%	0.05%	**100%**
Denver	Establishments	72,519	129,752	14,430	751	101	**217,553**
	Percent of Total	33%	60%	7%	0.3%	0.05%	**100%**
Boise	Establishments	23,820	26,765	3,119	141	17	**53,862**
	Percent of Total	44%	50%	6%	0.3%	0.03%	**100%**
Austin	Establishments	48,802	69,692	8,605	473	41	**127,613**
	Percent of Total	38%	55%	7%	0.4%	0.03%	**100%**
Total		**508,256**	**776,468**	**103,360**	**5,687**	**654**	**1,394,417**
Percent of Total		**36%**	**56%**	**7%**	**0.4%**	**0.05%**	**100%**

Source: Youreconomy.org.

The high concentration of self-employed businesses and low proportion of larger businesses is evident in Clackamas County, where about 92% of the establishments had less than 9 workers in 2008 (source; Dun & Bradstreet).

It is also apparent that Clackamas County has a very high share of "home grown" businesses that are locally headquartered. **Figure 11** indicates that virtually all of the net new establishments added in Clackamas County over the 2003-2008 timeframe were considered to be "resident" establishments with an Oregon headquarters. Locally-owned businesses are often cited as having a more beneficial economic impact on the communities they serve. In fact, researchers from Penn State University have found that many smaller, locally-owned businesses are better for growing incomes in a county than the presence of larger companies owned by out of state companies. The authors of the study concluded that "encouraging local businesses would be better for growth than recruiting larger firms from outside the county."[3]

Figure 11 Clackamas County Establishment Headquarters

2003 to 2009

Establishments	2003	2008	Change	%
Noncommercial (public & non profits)	1,458	1,404	-54	-4%
Nonresident (out-of-state HQ)	1,181	1,006	-175	-15%
Resident (Oregon-based HQ)	22,499	31,574	9,075	40%

Source: Dun & Bradstreet Corporation

While small emerging companies hold much promise for local investment and long-term job growth, mid-size companies are currently more bullish on hiring this year. A survey of CEOs by Deloitte found that 93 percent think their own companies will grow, and 70 percent plan to hire this year. For comparison, a similar survey by the U.S. Chamber of Commerce found that only 19 percent of the small business owners plan to add employees this year. These mid-size companies have annual gross revenue of between $50 million and $1 billion.

Clackamas County is the home of 10 of Oregon's fastest-growing Top 100 private companies. According to the Portland Business Journal, the list of fast-growing private companies (based on 2009 to 2010 revenue growth) includes:

- Directors Mortgage (rank #2): residential mortgage banking; Lake Oswego
- Funnelbox, Inc. (rank #8): media/video production: Oregon City
- Zupanic Rathbone Law Group (rank #16): legal services; Lake Oswego

[3] Goetz, Stephan and Fleming, David; Economic Development Quarterly, *Does Local Firm Ownership Matter?*, April 28, 2011.

- The Bank of Oswego (rank #26): banking; Lake Oswego
- EthicsPoint, Inc. (rank #46): enterprise risk consulting; Lake Oswego
- Johnson RV (rank #49): recreation vehicle sales; Sandy
- Cook Security Group (rank #78): service/installation of security systems; Milwaukie
- InfoGroup Northwest (rank #82): employee search/consultants; Lake Oswego
- Vigilan Inc. (rank #83): software for community health care; Wilsonville

Clackamas County is also home to many large publically traded companies, including several key cluster businesses, which are identified in the next section.

III Key Clusters

III.A. OVERALL FINDINGS

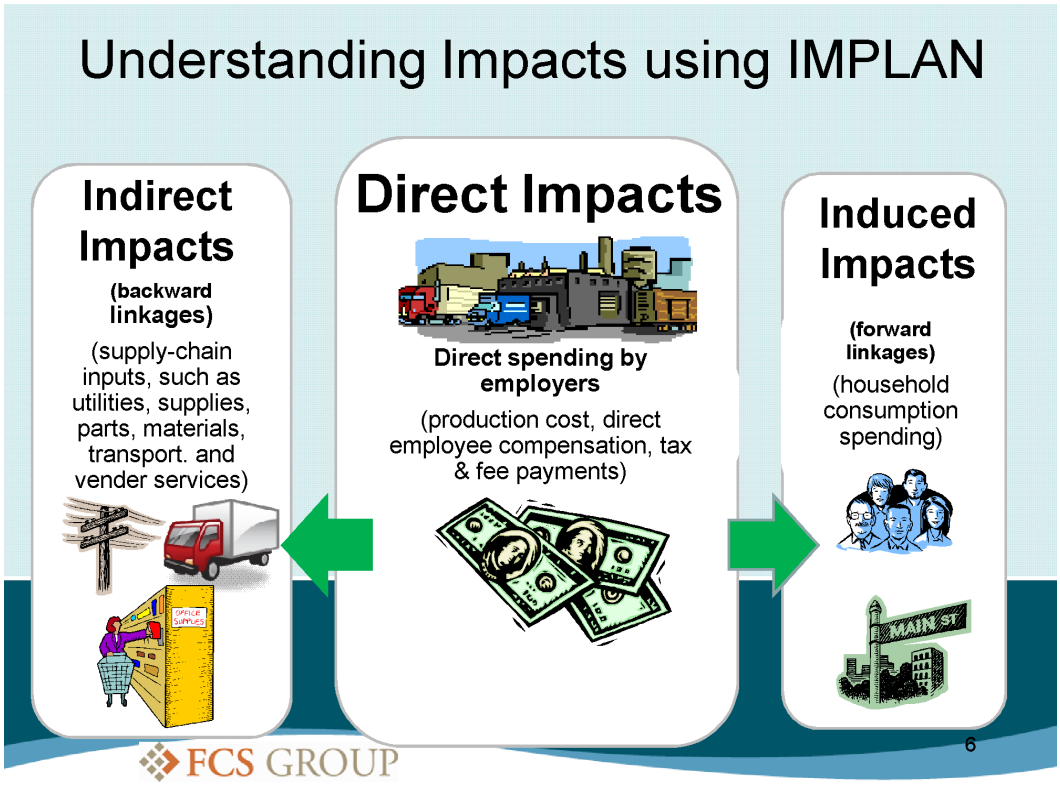
To update prior Economic Landscape findings, FCS GROUP utilized the IMPLAN model (Impact analysis for planning model) for Clackamas County and the greater Portland region (9-county area) using 2009 data (adjusted to 2011 dollar values).

The IMPLAN model is an economic model that a useful tool for understanding the inputs and outputs of local and regional economies by measuring the direct and secondary benefits of changes in industrial output (sales), GDP (valued added), income, taxes, and employment. The IMPLAN model takes into account national, regional and local economic trends and spending multipliers to estimate: direct impacts (income, sales, wages, profits associated directly with producing a good or service); indirect impacts (backward linkages including supplies/services needed as inputs for producing the good or service); and induced impacts (forward linkages that depict how the direct and indirect impacts cause a multiplier effect in the regional economy as income is spent and re-spent on various goods, services and investments. The IMPLAN model includes up to 506 specific industry sectors, of which 299 are represented in Clackamas County.

Figure 12 illustrates how IMPLAN uses input-output multipliers to estimate how direct spending by businesses translates into indirect impacts (purchases from suppliers) and induced impacts (household spending based on employee earnings). Please refer to www.implan.com and **Appendix A** for more detailed information regarding the IMPLAN model.

The overall results indicate that the 9-county regional economy grew between 2006 and 2010 from $118 billion to $121billion in real gross domestic product (GDP), measured in constant 2011 dollars. In comparison, between 2006 and 2010, the Clackamas County economy grew from $14.5 billion to $15.5 billion in GDP. The relative share of the regional GDP that is attributed to Clackamas County is estimated to have increased slightly from 12.5% in 2006 to 12.8% in 2010.

Figure 12 IMPLAN Model Impacts



III.B. KEY CLUSTERS

The findings from the IMPLAN analysis reveals how the top industry clusters within Clackamas County were impacted by the recent economic recession.

The analysis used to update information regarding key clusters in Clackamas County, identified key clusters has having the following attributes:

- Employment sectors with a relatively high or increasing location quotient (LQ) relative to the nine-county PMSA Portland region.[4]
- The relative contribution a particular sector has county income levels. Key clusters often pay above-average wage rates.

[4] Location Quotient (LQ) indicates the relative share of the amount of economic activity (GDP) produced within a employment sector in Clackamas County in comparison to the share of economic activity that sector contributes to the larger region. For example, if the annual GDP generated by professional & business services accounts for 20% of the county's GDP, and accounts for 10% of the GDP within the region, the County's LQ for professional & business services is 2.0 (20/10).

The prior Economic Landscape study identified the following 10 key clusters within Clackamas County:

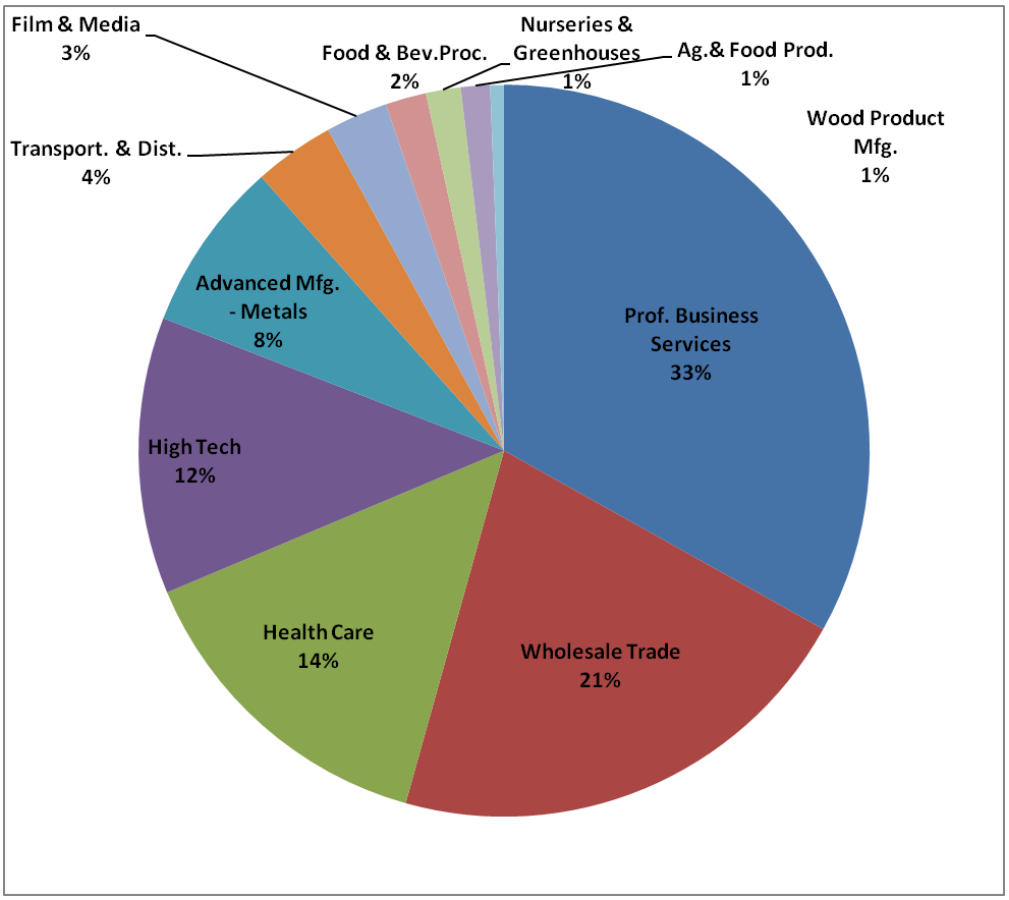
- **Nurseries and Greenhouses** (primarily includes growing plants, herbs, trees, and shrubs for wholesale markets).
- **Transportation & Distribution** (includes truck transport & warehousing).
- **Wood Product Manufacturing** (includes lumber mills and finished wood products).
- **Professional & Business Services** (includes professional business consulting, finance, insurance, engineering, design, and related services, but does not include commercial banking, advertising and photography services).
- **Wholesale Trade** (includes businesses that sell goods to other businesses, as the agent or distributor between the producer and the retail seller of goods).
- **Advanced Manufacturing – Metals and Machinery** (includes manufacturing of primary and fabricated metal products, such as metal hand tools and machinery manufacturing and assembly).
- **High Tech** (includes manufacturing of computer and measuring equipment, software design and computer programming).
- **Health Care** (primarily includes health service occupations).
- **Food and Beverage Processing** (includes producers of food and beverages for wholesale or retail use. This is an emerging cluster that was identified in 2010, since it has experienced growth in Clackamas County in spite of the recent economic recession).
- **Agriculture and Food Production cluster** (includes businesses focused on food production as well as related industries, such as fertilizer and pesticide manufacturing, medicinal botanical manufacturing, and support industries).

The Film and Media Production cluster is an emerging cluster that is still evolving in Clackamas County with the production of many television series (i.e., Leverage) occurring in the Clackamas Industrial Area, and several multi-media companies based in Clackamas County. In addition to motion picture and video production, this cluster includes advertising, photography, publishing, sound recording, broadcasting, writers, performers and agents/promoters of performing arts and sports.

Total GDP in Clackamas County was approximately $15.5 billion in 2010. The combined direct impact of the 10 key clusters combined with the Film and Media cluster in Clackamas County accounted for approximately $7.7 billion in direct annual GDP (nearly 50% of the total county GDP) and accounted for 42% of the county's jobs. According to the IMPLAN model for Clackamas County, the average employee compensation for the key clusters was

$53,000 in 2010, which was 40% above the County's average wage rate.[5] As indicated in **Figure 13**, the top five key clusters (as measured by GDP) include: professional & business services ($2.6 billion); wholesale trade ($1.6 billion); health care ($1.1 billion); high tech ($942 million), and advanced manufacturing – metals ($562 million).

Figure 13 Annual Contributions of Clusters in Clackamas County, 2010 (distribution of 11 Clusters combined annual GDP of $7.7 billion)

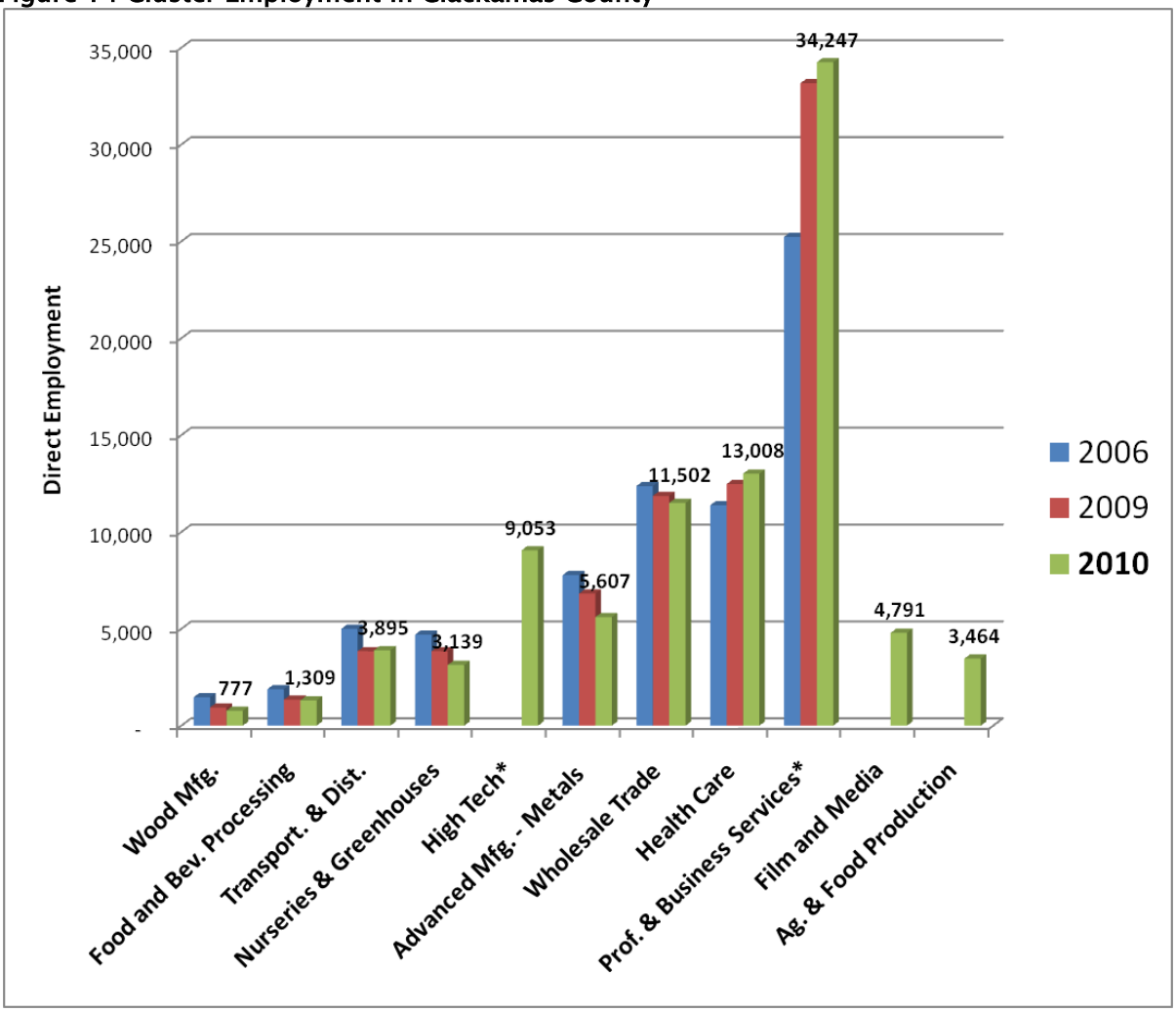


Source: IMPLAN model for Clackamas County, 2010, adjusted to 2011 dollars.

Figure 14 indicates that the job gains in professional & business services, and health care more than counted declining employment in all other key clusters between 2006 and 2010.

[5] Employee compensation derived using the IMPLAN model is derived from an estimate of total employment (includes workers covered and not covered by unemployment insurance) divided by total direct payroll and related benefits (including health care benefits). Hence, these estimates of compensation should not be directly compared with other estimates prepared by the Oregon Employment Dept., which only reflect covered employment and direct payroll.

Figure 14 Cluster Employment in Clackamas County



*Source: IMPLAN model for Clackamas County. * Employment sectors defined for inclusion within the high tech cluster were expanded in 2010 to include computer programming. Also, the definition of the professional & business services cluster was refined in 2010 to exclude advertising/marketing and photography services (now reflected in film and media cluster). Hence direct comparison with prior years should be avoided for these clusters.*

The following sections describe results derived from the analysis of each of the key clusters.

III.B.1. Professional Business Services

Professional consulting, finance and insurance services and other businesses services are comprised of services rather than traditional traded goods. The service sectors that make up this cluster include accounting, asset management, business consulting, financial management, wealth management, insurance, law, architecture, engineering, planning, computer systems and management consulting. Establishments within this cluster range in size from small independents to large international practices. This cluster derives only 8% of its sales from customers outside 9 county region, and includes 15 of the County's Top 100 private employers.

Professional Business Services Cluster

Current Stats for Clackamas County

Annual GDP (Value Added): $2.6 Billion

Cluster Share of County GDP: 17%

Exports/Sales from Outside Region: 8%

Direct Employment: 34,247 jobs

County Businesses: 2,535

Number of Businesses in Top 100: 15

10-year Job Growth Forecast: 31 percent

Cluster Location Quotient (LQ): 0.9

Source: compiled by FCS GROUP based on data from IMPLAN (2010), adjusted to 2011 dollars; with 10-year forecast by Oregon Employment Dept.

** Please refer to definition of LQ on next page.*

Representative Professional & Business Service Businesses	
Name	**Location**
Mentor Graphics Corp. *	Wilsonville
Meridian Technology Group Inc. *	Lake Oswego
Ciber Inc. *	Lake Oswego
Jacobs Engineering Group Inc. *	Lake Oswego
United Healthcare Services, Inc. *	Lake Oswego
Alpine Mortgage *	Lake Oswego
Travelers Indemnity Co. *	Lake Oswego
Otak Inc. *	Lake Oswego
Huron Consulting Services LLC *	Lake Oswego
Manufacturers & Traders Trust Co. *	Lake Oswego
Nationwide Mutual Insurance Co. *	Clackamas
Wells Fargo Bank NA *	Clackamas
Black & Veatch Corporation *	Lake Oswego
Princeton Property Management *	Milwaukie
D A Davidson & Co. Inc.*	Lake Oswego

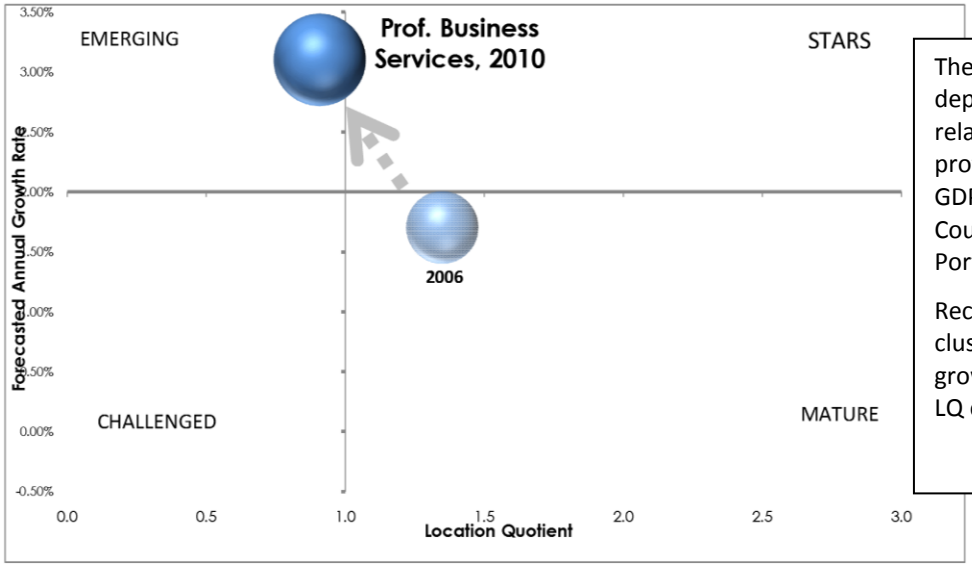
Source: Oregon Employment Department; FCS GROUP

** Indicates top 100 County Business Listing*

Professional & Business Services Cluster North American Industrial Classification System (NAICS) Categories

5222: Non-depository credit intermediation. Such as credit unions.
5223: Activities related to non-depository credit intermediation. Such as mortgage loan brokers.
523: Securities, commodity contracts, financial investments and related activities.
524: Insurance carriers and related activities.
525: Funds, trusts and other financial vehicles.
531: Real estate leasing, agents, brokers, property managers and related activities.
541: Professional scientific and technical activities. Such as legal services, accounting, payroll services, architecture, engineering, surveying, building inspection, graphic design, computer systems design, management consulting, environmental, consulting and veterinary services.

Figure 15 Location Quotient Trends: Professional & Business Services



The Location Quotient (LQ) depicted in **Figure 15** shows the relative concentration of professional & business service GDP (value added) in Clackamas County compared to the 9-county Portland Region.

Recent trends indicate that this cluster is increasing in GDP and growth potential but decreasing in LQ compared with the region.

Figure 16 Professional Business Services Economic Impacts, Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	1.31	1.02	0.90
Contribution to GDP	5%	18%	17%
# of Businesses	2,008	2,570	2,535
Average Compensation	$42,000	$33,000	$29,859
Labor Income	$1,068,745,000	$1,085,108,000	$1,022,580,000
Total GDP (Value Added)	$2,630,585,000	$2,772,647,000	$2,550,340,000
% Traded Outside Region	n/a	n/a	8%
Output	n/a	$4,289,124,000	$3,935,470,000
Direct Jobs	25,233	33,164	34,247
Secondary Jobs	23,783	20,082	17,958
Total Employment	49,016	53,246	**52,205**

** note, prior years not directly comparable since 2012 methodology amended to exclude advertising & photography services which are now reflected in the Film & Media cluster.*

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The long-term outlook for the professional and business service cluster is positive. As indicated in **Figure 16,** while the average compensation in this cluster has fallen since 2006 and remains below the county-wide average and for all jobs, total GDP (valued added) has remained stable and direct employment increased between 2006 and 2010 (this large increase may be due to more part-time and temporary workers being hired). This cluster should continue to be a leading indicator with positive growth expected as overall economic conditions improve regionally and nationally.

III.B.2. Health Care

Health care is a vital element of the Clackamas County economy, and has grown steadily in spite of challenging economic times. Health care jobs tend to pay above average wages, and many of Clackamas County's largest employers are in this cluster. Significant levels of planned investments by private and non-profit health care providers in Clackamas County are underway. IMPLAN model results from 2010 indicate that about 10% of health care expenditure flow out of Clackamas County to the rest of the region.

Representative Health Care Businesses	
Name	**Location**
American Medical Response N.W. *	Milwaukie
Eye Health Northwest PC	Oregon City
Kaiser Foundation Health Plan of NW	Clackamas
Legacy Meridian Park Hospital *	Tualatin
Northwest Permanente, P.C. *	Clackamas
Providence Milwaukie Hospital *	Milwaukie
Providence Willamette Falls Hospital *	Oregon City
Rehab Specialists Inc. *	Milwaukie
Sunnyside Hospital *	Clackamas
Woman's Health Center of Oregon PC *	Oregon City

Source: Oregon Employment Department; FCS GROUP
** Indicates top 100 County Business Listing*

Health Care Cluster
Current Stats for Clackamas County

Annual GDP (Value Added)**: $**1.1 Billion

Cluster Share of County GDP: 7.1%

Exports/Sales from Outside Region: n/a*

Direct Employment: 13,008 jobs

County Businesses: 713

Number of Businesses in Top 100: 7

10-year Job Growth Forecast: 31%

Cluster Location Quotient (LQ)*: 1.19

Source: compiled by FCS GROUP based on data from Oregon Employment Department, and IMPLAN (2010), adjusted to 2011 dollars.

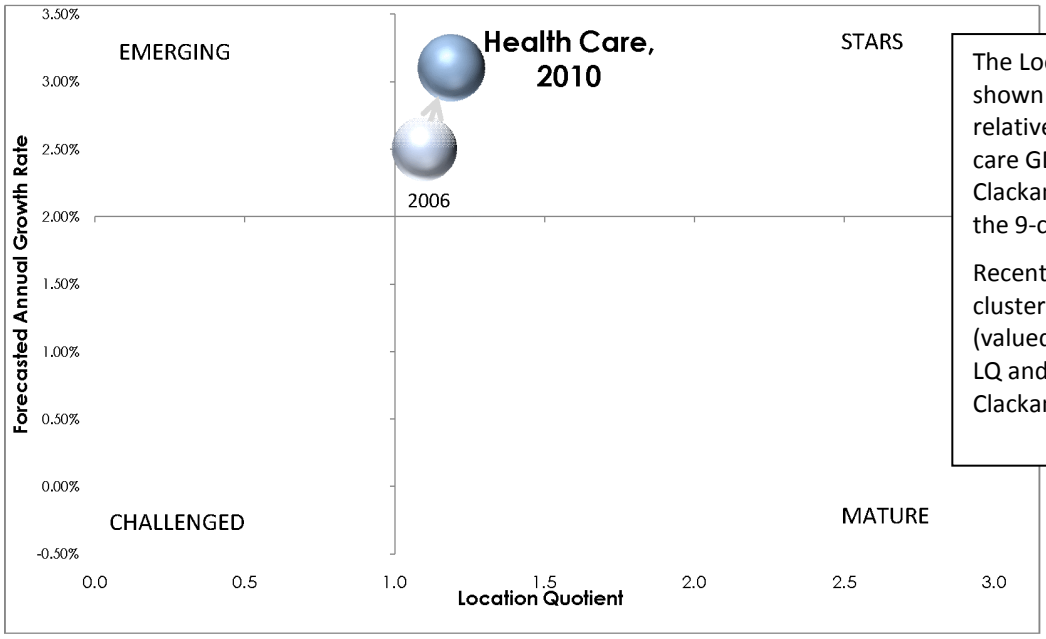
**There is a net outflow of health care demand from Clackamas County to the rest of the MSA.*

*** Please refer to definition of LQ on next page.*

Health Care Sector
North American Industrial Classification System (NAICS) Categories

621 & 622: Includes businesses which include offices of all health care specialists including physicians, dentists as well as all specialty doctors, hospitals, specialty care facilities

Figure 17 Location Quotient Trends: Health Care Cluster



The Location Quotient (LQ) trend shown in **Figure 17** depicts the relative concentration of health care GDP (value added) in Clackamas County compared to the 9-county Portland Region.

Recent trends indicate that this cluster is growing in overall GDP (valued added) and increasing in LQ and growth potential within Clackamas County.

Figure 18 Health Care Cluster Economic Impacts,

Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	1.1	1.12	1.19
Contribution to GDP	8.0%	8.9%	7.1%
# of Businesses	599	225	713
Average Compensation	$62,000	$69,000	$77,919
Labor Income	$708,406,000	$858,903,000	$1,013,570,000
Total GDP (Value Added)	$1,008,502,000	$1,109,926,000	$1,103,310,000
% Traded Outside Region	n/a	n/a	n/a
Output	n/a	$2,293,690,000	$1,765,600,000
Direct Jobs	11,379	12,470	13,008
Secondary Jobs	-	10,430	11,163
Total Employment	11,379	22,900	24,171

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*

Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the health care cluster is very positive. Average compensation is well above the county-wide average for all jobs, and continues to trend upwards. Total GDP (valued added) and direct employment increased by 9% between 2006 and 2010 (see **Figure 18**). As the county and regional population increase and the amount of people over the age of 65 expands, the health care cluster should continue to experience above average growth and investment.

III.B.3. Wholesale Trade

Wholesale trade is an essential part of the greater Portland regional economy. Wholesalers connect goods producers--from raw materials to finished products, with distributors and retailers in a cost-effective and time-sensitive manner. In addition to long time employers in Clackamas County, such as Kroger, OREPAC Building Products, Pacific Seafood Company, Sysco Foods, and Smith Kline Beecham, Clackamas County is also home to younger firms that are rapidly expanding.

The number of Clackamas County businesses in this cluster increased from 1,101 in 2008 to 1,194 in 2010. This cluster now has 14 of the Top 100 private companies in Clackamas County.

Wholesale Trade Cluster
Current Stats for Clackamas County

Annual GDP (Value Added)**:** $1.6 Billion

Cluster Share of County GDP: 10%

Exports/Sales from Outside Region: 45%

Direct Employment: 11,502 jobs

County Businesses: 1,186

Number of Businesses in Top 100: 14

10-year Job Growth Forecast: 17%

Cluster Location Quotient (LQ)*: 1.35

Source: compiled by FCS GROUP based on data from IMPLAN (2010), adjusted to 2011 dollars; and Oregon Employment Dept. 10-year forecast.

** Please refer to definition of LQ on next page.*

Representative Wholesale Trade Businesses	
Name	**Location**
Kroger Inc. *	Clackamas
Unified Western Grocers Inc. *	Portland
Sysco Portland Inc. *	Wilsonville
Kendal Floral Supply LLC *	Canby
Pacific Sea Food Company Inc. *	Clackamas
Acosta Sales & Marketing Company *	Tualatin
Kahut Waste Services *	Clackamas
Core Mark International Inc. *	Clackamas
Blackwell North America Inc. *	Lake Oswego
Biotronik Inc. *	Lake Oswego
Owens & Minor *	Wilsonville
General Distributors Inc. *	Oregon City
Orepac Building Products Inc. *	Wilsonville
Smithkline Beecham Corporation *	West Linn
Cisco Systems MFG Inc. *	Lake Oswego

Source: Oregon Employment Department; FCS GROUP

** Indicates top 100 County Business Listing*

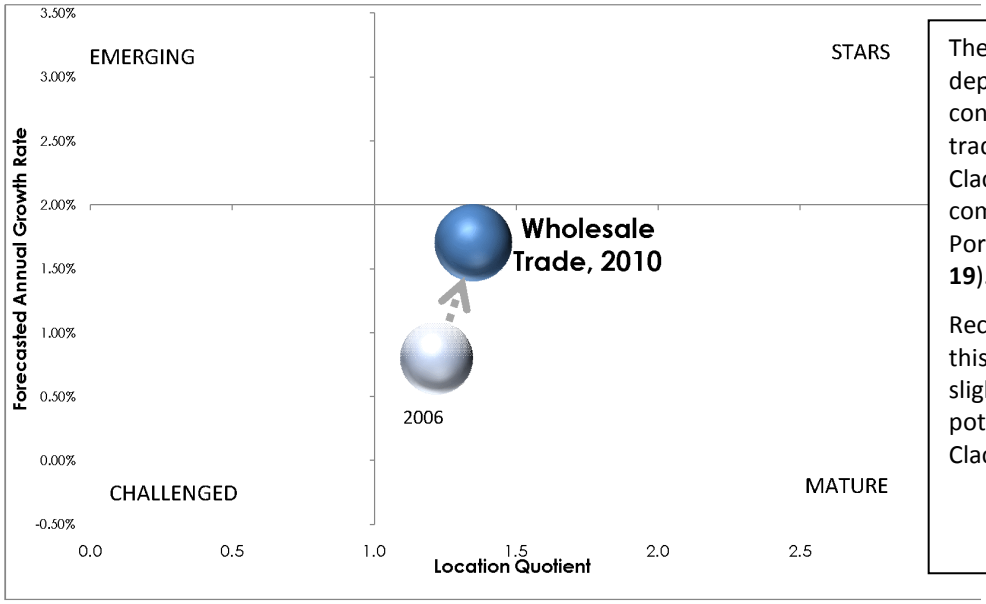
Professional Business Services Sector
North American Industrial Classification System (NAICS) Categories

423: Wholesale Trade, Durable Goods. Includes businesses that sell durable goods to other businesses. Durable goods may be new or used items with an expected life of three or more years. Typical goods include motor vehicles, furniture, construction materials, machinery, and appliances.

424: Wholesale Trade, Nondurable Goods. This industry is focused on nondurable goods with a normal life of less than three years. Typical nondurable products include paper, chemicals, drugs, textiles, apparel, footwear, groceries, farm products, petroleum, alcoholic beverages, food, books and nursery stock.

425: Wholesale Trade, Electronic Goods. Businesses include wholesale electronic markets, agents and brokers for the sale of goods owned by others. They act on behalf of the buyers and sellers of goods.

Figure 19 Location Quotient Trends: Wholesale Trade



The Location Quotient (LQ) depicts the relative concentration of wholesale trade GDP (value added) in Clackamas County compared to the 9-county Portland region (see **Figure 19**).

Recent trends indicate that this cluster is increasing slightly in both growth potential and LQ within Clackamas County.

Figure 20 Wholesale Trade Economic Impacts,

Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	1.22	1.24	1.35
Contribution to GDP	11.1%	9.9%	10.6%
# of Businesses	1,101	1,194	1,186
Average Compensation	$69,000	$68,000	$80,742
Labor Income	$853,434,000	$805,877,000	$928,690,000
Total GDP (Value Added)	$1,622,082,000	$1,506,886,000	$1,633,640,000
% Traded Outside Region	n/a	n/a	45%
Output	n/a	$2,298,725,000	$2,091,310,000
Direct Jobs	12,370	11,863	11,502
Secondary Jobs	13,186	9,328	8,907
Total Employment	25,556	21,191	20,409

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the wholesale trade cluster is positive. The average compensation for this cluster is well above the county-wide average for all jobs. Total GDP (valued added) has increased slightly since 2006 but direct employment has decreased by 7% (see **Figure 20**).

III.B.4. Advanced Manufacturing – Metals & Machinery

Metals and machinery manufacturing is a mature industry within Clackamas County that has generally done well in spite of the recent economic recession. Clackamas County's metals and machinery industries produce a wide range of goods such as computer components, jet engines, turbines for wind power generators, streetcars, rebar and multipurpose tools. Some of Oregon's largest metals employers, such as Consolidated Metco, Oregon Cutting Systems, Oregon Steel Mills and Precision Castparts have established roots in Clackamas County.

This cluster added 13 business establishments between 2008 and 2010, and recorded an increase in valued added. Oregon's exports of metals and machinery approached $1.6 billion in 2010, up 38% from the preceding year.

Advanced Manufacturing – Metals and Machinery Cluster
Current Stats for Clackamas County

Annual GDP (Value Added): $582 M

Cluster Share of County GDP: 4%

Exports/Sales from Outside Region: 77%

Direct Employment: 5,607 jobs

County Businesses: 223

Number of Businesses in Top 100: 8

10-year Job Growth Forecast: 23%

Cluster Location Quotient (LQ) *: 2.62

Source: compiled by FCS GROUP based on data from IMPLAN (2010), adjusted to 2011 dollars; and Oregon Economic Development 10-year forecast.

** Please refer to definition of LQ on next page.*

Representative Metals & Machinery Businesses	
Name	**Location**
PCC Structurals, Inc. *	Clackamas
Oregon Cutting Systems *	Portland
Oregon Iron Works Inc. *	Clackamas
Cleanpak International Inc. *	Clackamas
Benchmade Knife Company Inc. *	Oregon City
Wriglesworth and Willock Metal *	Milwaukie
The Stanley Works *	Milwaukie
Sandvik Medical Solutions	Oregon City
SSI Shredding Systems Inc. *	Wilsonville
Eagle Foundry Co.	Eagle Creek

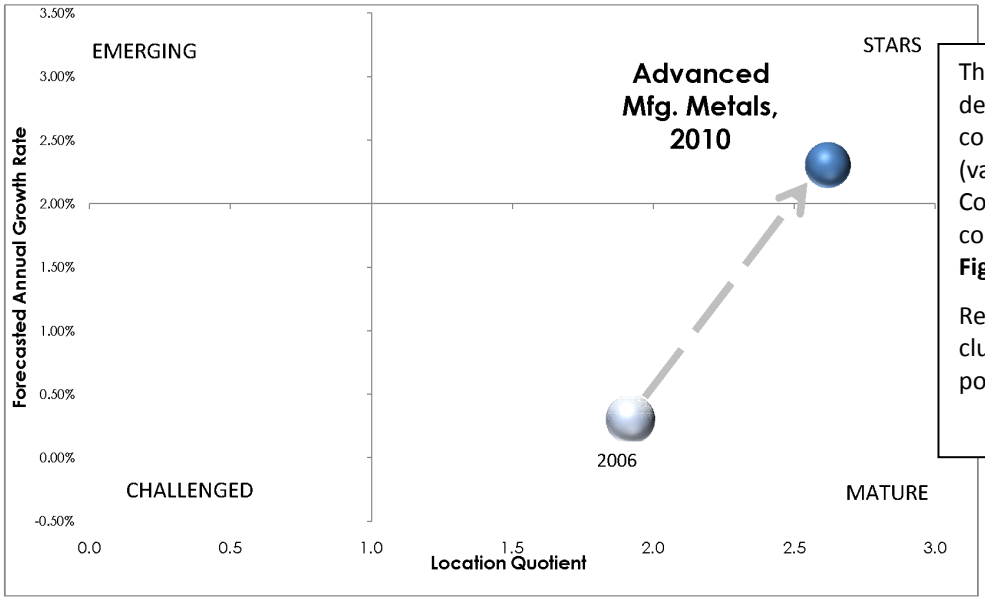
Source: Oregon Employment Department Compiled by FCS GROUP

** Indicates top 100 County Business Listing*

Advanced Manufacturing- Metals & Machinery Cluster
North American Industrial Classification System (NAICS) Categories

331: Primary Metal Manufacturing. This sector includes the smelting or refinement of ferrous and non ferrous metals. Establishments in this sector also manufacture metal alloys used in rolling and extruding operations to make sheet, strip, bar, rod, or wire for castings and other basic metal products.
332: Fabricated metal Product Manufacturing. Industries in this sector transform metal into intermediate or end products, excluding machinery, computers, electronics, metal furniture and related products. Fabricated metal processes include forging, stamping, bending forming, machining, welding and assembling. Examples include metal pipe manufacturing.
333: Machinery Manufacturing. Industries in this sector transform metal into machinery or tools used for the manufacture of goods.

Figure 21 Location Quotient Trend: Advanced Manufacturing – Metals & Machinery



The Location Quotient (LQ) depicts the relative concentration of high tech GDP (value added) in Clackamas County compared to the 9-county Portland Region (see **Figure 21**).

Recent trends indicate that this cluster's LQ and growth potential are increasing.

Figure 22 Advanced Mfg. – Metals & Machinery Economic Impacts, Clackamas County, 2006 to 2010

	2006	2009	2010
Industry Location Quotient	1.92	1.85	2.62
Contribution to GDP	3.0%	4.9%	3.8%
# of Businesses	212	225	223
Average Compensation	$65,000	$66,000	$71,227
Labor Income	$487,517,000	$448,980,000	$399,370,000
Total GDP (Value Added)	$741,874,000	$746,120,000	$581,800,000
% Traded Outside Region	n/a	n/a	77%
Output	n/a	$1,815,521,000	$1,316,820,000
Direct Jobs	7,773	6,820	5,607
Secondary Jobs	7,690	4,304	4,224
Total Employment	15,463	11,124	9,831

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the metals and machinery manufacturing cluster is improving. The average compensation in this cluster is well above the county-wide average for all jobs. Total GDP (valued added) has fallen by 22%, and direct employment has fallen by 28% between 2006 and 2010 (see **Figure 23**).

III.B.5. High Tech

The Advanced Technology—High Tech cluster continues to be one of Clackamas County's leading clusters, and the average wages are significantly higher than virtually all other sectors. While overall job growth in has slowed since 2006, the value of high tech exports has grown in recent years. Clackamas County's high-tech cluster includes dozens of industries that manufacture a variety of electronic components and software systems for computers, energy, transportation, aerospace, motor vehicles and defense-related products.

Advanced Technology - High Tech Cluster
Current Stats for Clackamas County

Annual GDP (Value Added): $942 M

Cluster Share of County GDP: 6%

Exports/Sales from Outside Region: 74%

Direct Employment: 9,053 jobs

Businesses in Cluster: 289

Number of Businesses in Top 100: 12

10-year Job Growth Forecast: -14%

Cluster Location Quotient (LQ)*: .84

Source: compiled by FCS GROUP based on data from IMPLAN (2010), adjusted to 2011 dollars; and Oregon Employment Dept. 10-year forecast.

** Please refer to definition of LQ on next page.*

Representative High Tech Businesses	
Name	**Location**
Xerox Corporation *	Wilsonville
TYCO Electronics Corp. *	Wilsonville
Flir Systems, Inc. *	Wilsonville
Oeco LLC *	Milwaukie
Micro Systems Engineering *	Lake Oswego
Johnson Controls Battery Group *	Canby
Autodesk Inc. *	Lake Oswego
Eaton Corporation *	Lake Oswego
Sabrix Inc.*	Lake Oswego
Coherent Inc. *	Wilsonville
Motorola Inc. *	Lake Oswego
ADP Inc. *	Clackamas

Source: Oregon Employment Department; FCS GROUP

** Indicates top 100 County Business Listing*

Advanced Technology - High Tech Sector
North American Industrial Classification System (NAICS) Categories

334: Computer and Electronic Product Manufacturing. This includes establishments that manufacture computers, computer peripherals (such as printers), medical instruments, communications equipment and electronic components used in a wide variety of consumer and defense-related products.

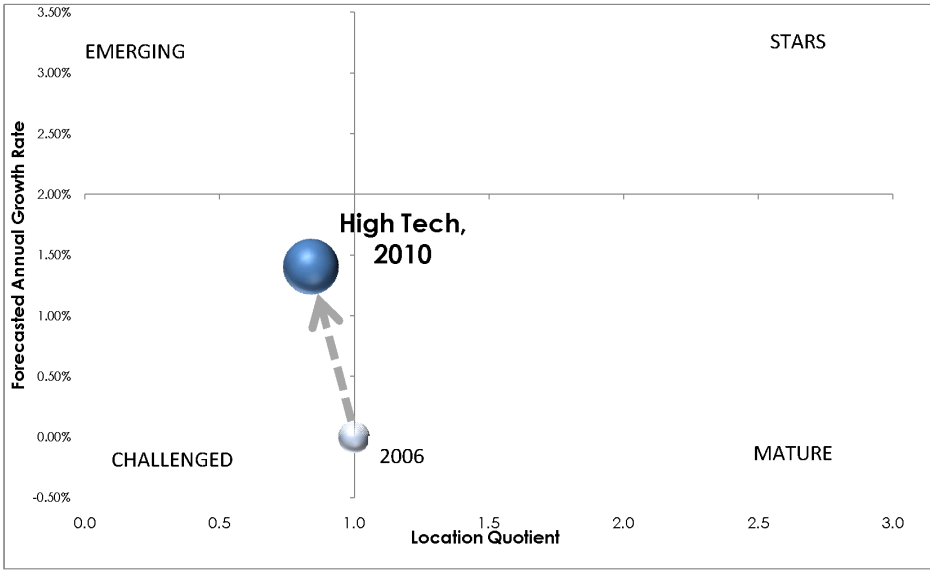
335: Electrical equipment, Appliances and Component manufacturing. Industries in this sector manufacture products that generate, distribute and use electrical power. This includes both small and major electrical appliances and parts, such as motors, generators, transformers, gauges and switches. Devices that store electrical power (e.g. batteries) or transmit electricity (e.g., insulated wires and cables) are included in this sector

371-372: Computer Programming and Systems Design*

511210: Software Publishers. This is comprised of businesses that are primarily engaged in computer software publishing and/or reproduction. These businesses carry out the operations necessary to design, produce, document, distribute and provide related high tech support services.

** segments added in 2012.*

Figure 23 Location Quotient Trends: Advanced Technology – High Tech



The Location Quotient (LQ) depicts the relative concentration of high tech GDP (value added) in Clackamas County compared to the 9-county Portland Region (see **Figure 23**).

Recent trends indicate that this cluster is growing in overall GDP (valued added) and but decreasing in LQ

Figure 24 Advanced Technology–High Tech Economic Impacts, Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	1	0.60	0.84
Contribution to GDP	2%	4%	6.1%
# of Businesses	n/a	n/a	289
Average Compensation	$69,000	$95,000	$83,559
Labor Income	$362,347,000	$405,364,000	$756,460,000
Total GDP (Value Added)	$391,130,000	$666,386,000	$942,320,000
% Traded Outside Region			74%
Output		$1,922,677,000	$2,163,470,000
Direct Jobs*	5,285	4,289	9,053
Secondary Jobs	8,390	5,372	9,619
Total Employment	13,675	9,661	18,672

** GDP = Gross Domestic Product or Total Value Added. N/A = not available. Also data for 2006 and 2009 are not directly comparable with 2010 because prior years did not reflect impact from computer programming businesses. Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.*

The high-tech cluster in Clackamas County is one of the top traded clusters. As noted in **Figure 24**, the average employment compensation in this cluster is well above the county-wide average for all jobs. This sector accounts for about 6% of the county's annual GDP, and derives nearly 74 percent of its sales from customers located outside the region (domestic and foreign trade).

III.B.6. Nurseries & Greenhouses

Clackamas County is a leader in the production of plants, flowers and trees used for landscaping and decorations. Unfortunately, this cluster was hit hard by the recent downturn in the housing and construction industry. While the number of businesses within this cluster expanded from 117 to 142 between 2008 and 2010, total employment and gross domestic product (GDP) has declined significantly.

Recent growth in local and regional food and beverage manufacturing activity combined with a trend toward a "100-mile diet" could help expand the market potential for locally produced grains, fruits, nuts and berries. Also, strong export demand for organic food shipments to Asia and the Middle East is expected to continue. For example, as of June 2011, Oregon became the only U.S. state allowed to export blueberries to Korea. If these trends continue, new markets may help support this struggling yet important cluster.

Nursery and Greenhouse Cluster
Current Stats for Clackamas County

Annual GDP (Value Added)**:** $118 M

Cluster Share of County GDP: 0.8%

Exports/Sales from Outside Region: 83%

Direct Employment: 3,139 jobs

County Businesses: 146

Number of Businesses in Top 100: 1

10-year Job Growth Forecast: 23%

Cluster Location Quotient (LQ)*: 2.56

Source: compiled by FCS GROUP based on IMPLAN (2010), adjusted to 2011 dollars; and 10-year forecast from Oregon Employment Dept.

** Please refer to definition of LQ on next page.*

Representative Nursery & Greenhouse Businesses

Name	Location
J. Frank Schmidt & Son Company	Boring
Gentry, Leo, Wholesale Nursery, Inc.	Damascus
ISELI Nursery, *	Boring
John Holmlund Nursery LLC	Boring
Terra Nova Nurseries Inc.	Canby
Van Meter & Son Nursery Inc.	Boring
YOSHITOMI BROS. INC.	West Linn
Northwoods Nursery Inc.	Molalla
Don Marjama Nursery Company Inc.	Sandy
Koida, Joe, Florist, Inc.	Milwaukie

Source: Oregon Employment Department; FCS GROUP

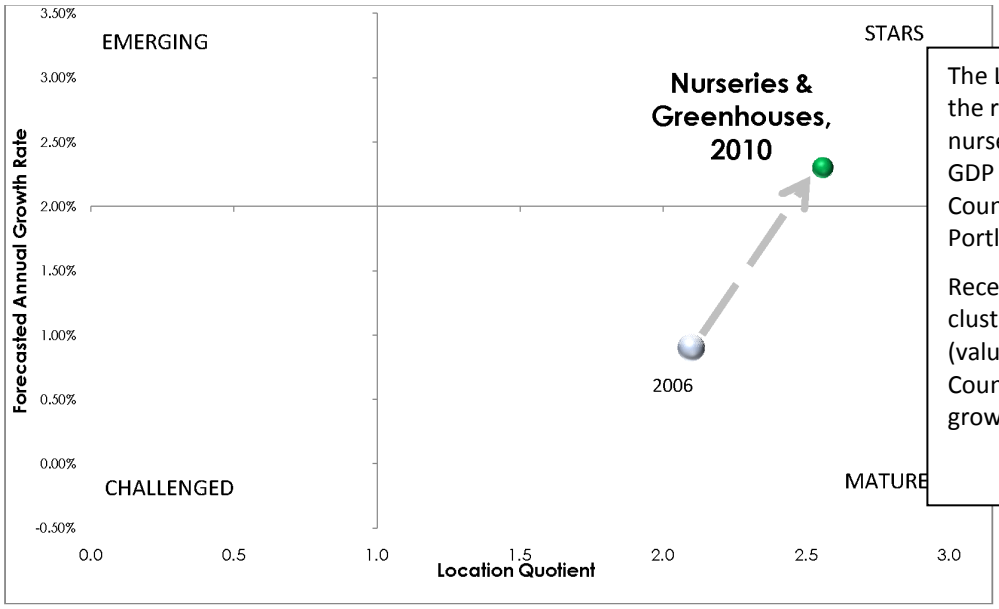
** Indicates top 100 County Business Listing*

Nursery and Greenhouse Sector
North American Industrial Classification System (NAICS) Categories

111421: Nursery and Tree Production

111422: Floriculture Production
Description: includes businesses primarily engaged in growing and/or producing: nursery products, nursery stock, shrubbery, bulbs, fruit stock, sod, and floriculture products (e.g., cut flowers and roses, cut cultivated greens, potted flowering and foliage plants, and flower seeds) under cover and in open fields.

Figure 25 Location Quotient Trends: Nurseries and Greenhouses



The Location Quotient (LQ) depicts the relative concentration of nursery and greenhouse business GDP (value added) in Clackamas County compared to the 9-county Portland Region.

Recent trends indicate that this cluster is shrinking in overall GDP (valued added) within Clackamas County, but increasing in LQ and growth potential (see **Figure 25).**

Figure 26 Nursery & Greenhouse Cluster Economic Impacts, Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	2.1	2.08	2.56
Contribution to GDP	2%	1%	0.8%
# of Businesses	117	142	146
Average Compensation	$32,000	$30,000	$34,186
Labor Income	$150,593,000	$114,031,000	$107,310,000
Total GDP (Value Added)	$220,443,000	$135,963,000	$117,910,000
% Traded Outside Region	n/a	n/a	83%
Output	n/a	$241,590,000	$185,540,000
Direct Jobs	4,700	3,821	3,139
Secondary Jobs	1,273	1,033	883
Total Employment	5,973	4,854	4,022

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the nursery & greenhouse cluster is beginning to improve. The average compensation in this cluster is well below the county-wide average for all job, but has increased by 7% between 2006 and 2010. However, total GDP (valued added) decreased by 47% and direct employment fell by 33% between 2006 and 2010 (see **Figure 26**). This cluster should see relatively rapid growth once real estate development conditions improve and regional policies spur "buy local" trade practices.

III.B.7. Trucking & Distribution

Trucking and warehousing has long been served by Clackamas County's excellent rail and interstate highway connections. Trucking and warehousing activities closely follow wholesale trade patterns, which are an important component of the broader regional and national economy. Some of Clackamas County's largest employers including Safeway, USF Reddaway, and Rite Aid are contained in this cluster,

While wage rate in this cluster tend to be well above the county-wide average, the recent national recession and increase in fuel costs had a severe impact on the trucking and distribution industry. It may take at least five years for this industry to reach employment levels that were attained in 2006.

Trucking and Distribution Cluster Current Stats for Clackamas County*

Annual GDP (Value Added): $274 M

Cluster Share of County GDP: 1.7%

Exports/Sales from Outside Region: 35%

Direct Employment: 3,895 jobs

County Businesses: 166

Number of Businesses in Top 100: 5

10-year Job Growth Forecast: 24%

Cluster Location Quotient (LQ)*: 1.86

Source: compiled by FCS GROUP based on IMPLAN (2010), adjusted to 2011 dollars; and 10-year job forecast from Oregon Employment Dept.

** Please refer to definition of LQ on next page.*

Representative Trucking & Distribution Businesses	
Name	**Location**
USF Reddaway, Inc. *	Clackamas
Safeway Stores, Inc. *	Clackamas
Interstate Distributor Co. *	Wilsonville
Gordon Trucking Inc. *	Clackamas
Rite Aid *	Wilsonville
Distribution Inc.	Clackamas
Ruan Transport Corporation	Canby
Kool Pak LLC	Lake Oswego
Beauty Systems Group LLC	Clackamas
J & D Refrigerated Services	Clackamas

Source: Oregon Employment Department; FCS GROUP

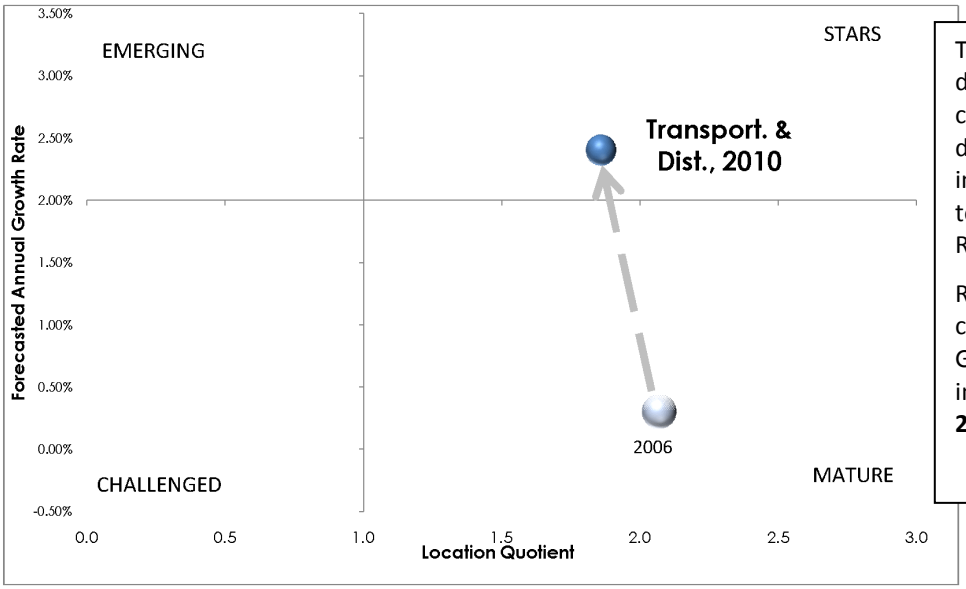
** Indicates top 100 County Business Listing*

Trucking and Distribution Sector North American Industrial Classification System (NAICS) Categories

484: Truck Transportation. Businesses within this sector provide over-the-road transportation using trucks and tractor trailers. This includes general freight distribution.

111422: Warehousing and Storage. This sector includes businesses that operate warehousing and storage facilities for general merchandise, refrigerated goods and other warehouse products. These establishments take responsibility for storing goods and keeping them secure. They also may provide incidental services involving shipping logistics, such as labeling, breaking bulk containers, inventory control, light assembly, order entry, packaging, price marking, ticketing and transportation arrangement

Figure 27 Location Quotient Trends: Trucking and Distribution



The Location Quotient (LQ) depicts the relative concentration of trucking and distribution GDP (value added) in Clackamas County compared to the 9-county Portland Region.

Recent trends indicate that this cluster is declining slightly in GDP and LQ, but is increasing in growth potential (see **Figure 27).**

Figure 28 Trucking & Distribution Economic Impacts,

Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	2.07	1.59	1.86
Contribution to GDP	3%	2%	1.8%
# of Businesses	225	179	166
Average Compensation	$56,000	$49,000	$58,341
Labor Income	$367,032,000	$188,020,000	$227,240,000
Total GDP (Value Added)	$491,980,000	$280,272,000	$273,760,000
% Traded Outside Region	40%	30%	35%
Output	n/a	$540,376,000	$468,940,000
Direct Jobs	4,997	3,844	3,895
Secondary Jobs	4,309	2,758	2,841
Total Employment	9,306	6,602	6,736

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the trucking and distribution cluster is dependent upon the broader national and international economy. While the average level of employment compensation in this cluster is above the county-wide average for all jobs, total GDP (valued added) decreased by 44% and direct employment fell by 22% between 2006 and 2010 (see **Figure 29**). This sector accounts for about 1.7% of the county's annual GDP. This cluster now primarily serves sub-regional markets with about 35 percent of its sales from customers located outside the region.

III.B.8. Food & Beverage Processing

Food and beverage processing is a key cluster in Clackamas County. Establishments within this cluster range in size from small independents to large international practices. This cluster now derives the majority of its sales from customers outside Clackamas County, and includes 7 of the County's Top 100 private employers.

Food & Beverage Processing Cluster Current Stats for Clackamas County

Annual GDP (Value Added): $139 Million

Cluster Share of County GDP: 0.9%

Exports/Sales from Outside MSA: 35%

Direct Employment: 1,309 jobs

County Businesses: 50

Number of Businesses in Top 100: 7

10-year Job Growth Forecast: 5%

Cluster Location Quotient (LQ)*: 0.8

Source: compiled by FCS GROUP based on IMPLAN (2010), adjusted to 2011 dollars; and 10-year growth forecast by Oregon Employment Department.

** Please refer to definition of LQ on next page.*

Representative Food & Beverage Mfg. Businesses	
Name	**Location**
AG Specialty Foods Inc.	Gladstone
BCI Coca Cola Bottling Co. *	Wilsonville
Bob's Red Mill Natural Foods *	Milwaukie
Ever Fresh Fruit Company *	Boring
Fred Meyer Inc. *	Clackamas
Integrated Bakery Resources*	Lake Oswego
Interstate Meat Distributors *	Clackamas
S.A. Piazza & Associates LLC	Clackamas
Safeway Stores, Inc. *	Clackamas
Saint Honore Bakery LLC	Lake Oswego

Source: Oregon Employment Department; FCS GROUP

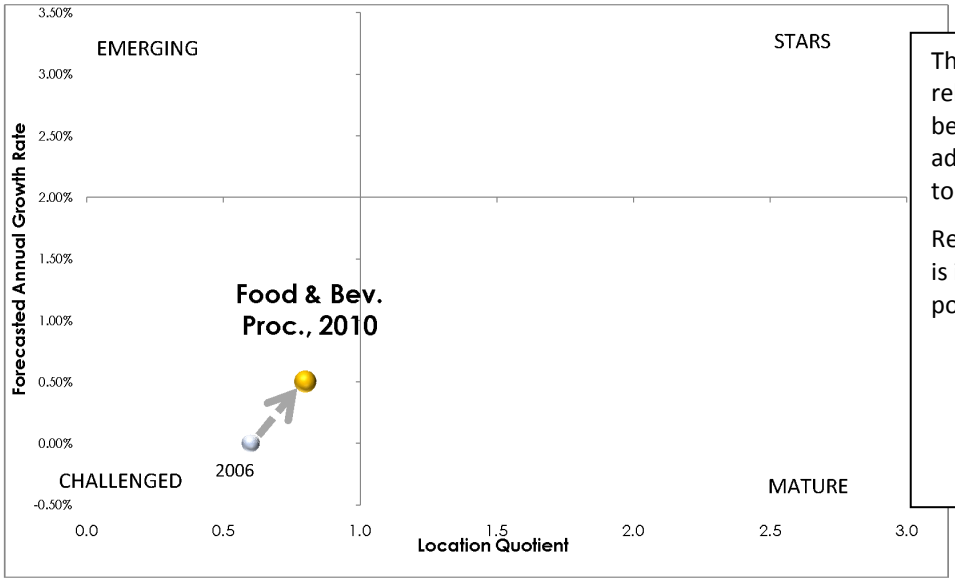
** Indicates top 100 County Business Listing*

Food and Beverage Processing North American Industrial Classification System (NAICS) Categories

311: Food processing and manufacturing. Such as milling, baking and refining raw food products. These processes produce food and other edible items such as coffee and seasoning.

312: Beverage manufacturing. Such as bottling, producing, fermenting and distilling beverages. This includes breweries, wineries, bottling plants and liquor distilleries

Figure 29 Location Quotient Trends: Food & Beverage Processing



The Location Quotient (LQ) depicts the relative concentration of food & beverage manufacturing GDP (value added) in Clackamas County compared to the 9-county Portland Region.

Recent trends indicate that this cluster is increasing in GDP, LQ and growth potential (see **Figure 29**).

Figure 30 Food & Beverage Processing Economic Impacts, Clackamas County, 2009 and 2010

		2009	2010
Industry Location Quotient		0.63	0.80
Contribution to GDP		0.7%	0.6%
# of Businesses		56	50
Average Compensation		$51,995	$55,985
Labor Income		$69,847,874	$73,285,000
Total GDP (Value Added)		$107,827,748	$134,988,000
% Traded Outside Region		n/a	35%
Output		$597,403,584	$677,257,000
Direct Jobs		1,343	1,309
Secondary Jobs		1,314	856
Total Employment		2,657	4,320

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the food and beverage manufacturing cluster continues to improve. As indicated in **Figure 30**, the average compensation in this cluster is well above the county-wide average for all jobs, total GDP (valued added) increased by 25% between 2009 and 2010. However, direct employment decreased by 3% during the same time period. This cluster currently accounts for only1% of the county's annual GDP, but derives 35% of its sales from customers located outside the region (domestic and foreign trade). This cluster should continue to experience positive growth as overall economic conditions improve nationally and internationally.

III.B.9. Wood Product Manufacturing

The wood product manufacturing cluster has deep roots in Clackamas County, and is still one of the *top 10 traded clusters*. The presence of the Mt. Hood National Forest provides a resource of timber that has traditionally fed local wood mills in rural cities, such as Estacada and Molalla. Locally produced wood products in Clackamas County include lumber, plywood, wood trusses, cabinets and pallets.

This cluster is reeling from the recent economic recession and housing industry downtown. On the bright side, exports of wood products from Oregon jumped 53% between 2009 and 2010, with the total value of wood exports exceeding $220 million. Also the total number of Clackamas County businesses within this cluster expanded from 30 to 34 between 2008 and 2010.

Wood Products Manufacturing Cluster

Current Stats for Clackamas County*

Annual GDP (Value Added): $47 M

Cluster Share of County GDP: 0.3%

Exports/Sales from Outside Region: 56%

Direct Employment: 777 jobs

County Businesses: 26

Number of Businesses in Top 100: 0

10-year Job Growth Forecast: 18%

Cluster Location Quotient (LQ)*: 1.12

Source: compiled by FCS GROUP based on IMPLAN (2010), adjusted to 2011 dollars; and 10-year job forecast from Oregon Employment Department.

** Please refer to definition of LQ on next page.*

Representative Wood Products Businesses	
Name	**Location**
Brentwood Corp.	Molalla
Sanders Wood Products Inc.	Molalla
Interfor Pacific Inc	Molalla
Precision Roof Trusses', Inc.	Clackamas
Classic Manufacturing NW LLC	Wilsonville
Summit Woodworking Inc.	Oregon City
Lazy s Lumber, Inc.	Beavercreek
Pacific Lumber Company	Lake Oswego
Savannah Pacific Molalla LLC	Molalla
McGriff Lumber Co.	Boring

Source: Oregon Employment Department; FCS GROUP

** Indicates top 100 County Business Listing*

Wood Product Manufacturing Sector North American Industrial Classification System (NAICS) Categories

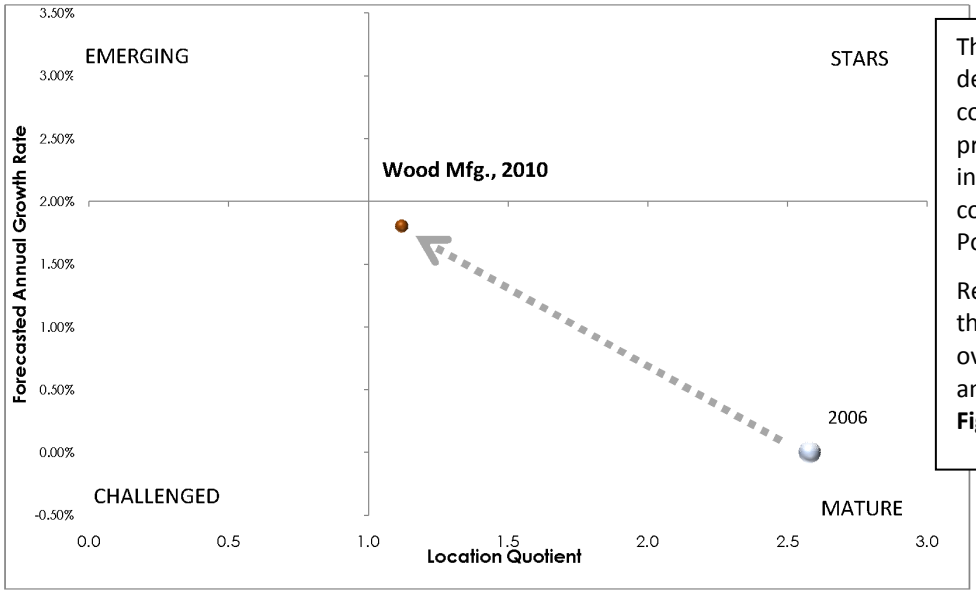
3211: Sawmills and wood preservation

3212: Veneer, plywood and engineered wood products

3219: Other wood product manufacturing, such as millwork, flooring, trusses, cabinets, containers and ballets.

Includes businesses primarily engaged in the manufacturing of wood products, such as lumber, plywood, veneers, wood containers, flooring, trusses and prefabricated wood buildings.

Figure 31 Location Quotient Trends: Wood Product Manufacturing



The Location Quotient (LQ) depicts the relative concentration of wood product GDP (value added) in Clackamas County compared to the 9-county Portland region.

Recent trends indicate that this cluster is declining in overall GDP (valued added) and shrinking in LQ (see **Figure 31)**.

Figure 32 Wood Product Manufacturing Economic Impacts, Clackamas County, 2006, 2009 and 2010

	2006	2009	2010
Industry Location Quotient	2.58	1.16	1.12
Contribution to GDP	0.8%	0.4%	0.3%
# of Businesses	30	34	26
Average Compensation	$41,000	$34,000	$51,480
Labor Income	$60,242,000	$32,318,000	$40,000,000
Total GDP (Value Added)	$151,722,000	$63,051,000	$46,900,000
% Traded Outside Region	n/a	n/a	56%
Output	n/a	$186,564,000	$150,000,000
Direct Jobs	1,469	940	777
Secondary Jobs	1,732	506	517
Total Employment	3,201	1,446	1,294

** GDP = Gross Domestic Product or Total Value Added. N/A = not available*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the wood product manufacturing cluster is mixed. As indicated in **Figure 32,** the average compensation in this cluster is starting to increase but total GDP (valued added) decreased by 69% and direct employment fell by 47% between 2006 and 2010. This sector accounts for about 0.3% of the county's annual GDP, and derives over half of its sales from customers located outside the region (domestic and foreign trade). Until national and regional economic conditions (particularly in the home building industry) improve this cluster may continue to decline.

III.B.10. Agriculture & Food Production

There is a growing trend towards buying locally produced food and organic products for all types. According to the U.S. Bureau of Labor Statistics people spend approximately 10% of their gross earnings on food, and this level of spending amounts to nearly $1.9 billion in Clackamas County and $7.5 billion in the nine-county Portland MSA region every year. In addition, there is a significant level of food purchased by businesses, such as food processors, breweries, and restaurants. While this cluster represents only 2% ($99 million) of the annual GDP produced by Clackamas County, the actual value of this cluster to the local and regional economy is much greater than that amount. In the book Y*ou Can't Eat GDP, Economics as if Ecology Matters*, author Eric Davidson points out that existing GDP is not a good indicator for measuring the value of agriculture and food production. Special environmental considerations about where and how food is obtained are probably more important to air, water, and land resources. A supplemental analysis by FCS GROUP indicates that increasing local purchases by 20% could generate about 105 jobs and induce regional GDP by $44 million (with Clackamas County capturing 15-20% of this increase).

Agriculture & Food Production Cluster

Current Stats for Clackamas County*

Annual GDP (Value Added): $99 M

Cluster Share of County GDP: 2%

Exports/Sales from Outside MSA: 45%

Direct Employment: 3,464 jobs

County Businesses: 135

Number of Businesses in Top 100: 0

10-year Job Growth Forecast: 31%

Cluster Location Quotient (LQ)*: 1.39

Source: compiled by FCS GROUP based on IMPLAN (2010), adjusted to 2011 dollars; and 10-year job forecast from Oregon Employment Department.

** Please refer to definition of LQ on next page.*

Representative Ag. & Food Production Businesses	
Name	**Location**
CALFARMS	Oregon City
EISELE Farms	Boring
Health Wright Products	Clackamas
Kip & Anna Tipikin	Molalla
Kirkman Group	Lake Oswego
Montecucco Farms	Canby
Rose Agri-Seed	Canby
Sandy Farms	Sandy
Willamette Egg Farms	Canby

Source: Oregon Employment Department; FCS GROUP

** Indicates top 100 County Business Listing*

Agriculture & Food Production Cluster North American Industrial Classification System (NAICS) Categories

111: Farming and food production (excluding 1114 nurseries and greenhouses)

112: Animal production, egg production, ranching

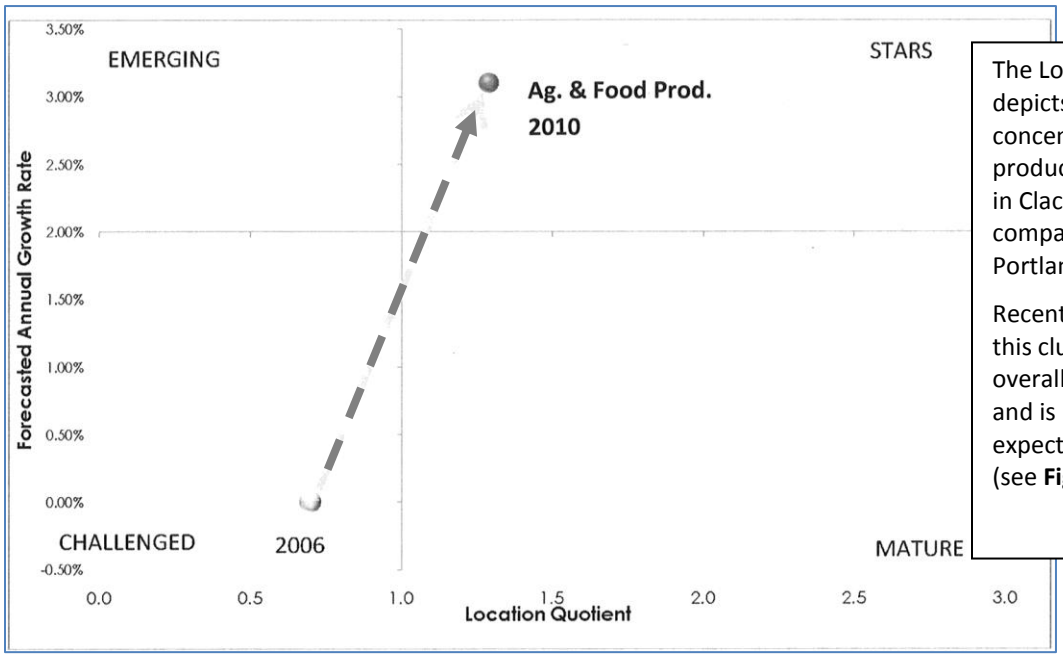
114: Fishing, hunting and trapping

115: Support activities for agriculture & forestry

3253: Fertilizer and pesticide manufacturing

3254: Medicinal and botanical manufacturing

Figure 33 Location Quotient Trends: Agriculture and Food Production



The Location Quotient (LQ) depicts the relative concentration of wood product GDP (value added) in Clackamas County compared to the 9-county Portland region.

Recent trends indicate that this cluster is stable in overall GDP (valued added) and is increasing in LQ and expected future growth (see **Figure 33)**.

Figure 34 Agriculture and Food Production Economic Impacts, Clackamas County, 2010

			2010
Industry Location Quotient			1.39
Contribution to GDP			0.6%
# of Businesses			135
Average Compensation			$19,397
Labor Income			$67,190,000
Total GDP (Value Added)			$99,080,000
% Traded Outside Region			6%
Output			$258,620,000
Direct Jobs			3,464
Secondary Jobs			856
Total Employment			4,320

** GDP = Gross Domestic Product or Total Value Added. Note, data for years prior to 2010 has not been analyzed.*
Source: IMPLAN model data, adjusted to 2011 dollars by FCS GROUP.

The future outlook for the agriculture and food production cluster is rapidly improving. While the average compensation in this cluster is well below the county-wide average for all jobs, the future growth potential is very positive. This cluster derives nearly half of its sales from customers located outside the region (domestic and foreign trade). As the trend towards "buying local" increases, this cluster should continue to improve.

III.C. REGIONAL CLUSTER MARKETING EFFORTS

Focused marketing and business recruitment efforts are being made by the State of Oregon, Portland Business Alliance, and local economic development officials to attract certain established and emerging business clusters. The business and industry clusters currently targeted by the Oregon Business Development Department, Portland Business Alliance, and the Portland Development Commission include advanced manufacturing; clean technology (with sustainability sub-clusters in green building, solar, and wind power); active wear/outdoor gear; and software.

According to the Oregon Employment Department, the job sectors with the highest potential for new growth in the greater Portland region include: health care; hotel/motel accommodations and food services; business administration and waste management; professional; scientific and technical service (such as computer science and engineering); state and local government; wholesale trade; finance and insurance; retail trade; transportation; and utilities (includes warehousing, distribution and energy research, and private utilities).[6]

The manufacturing sectors with the greatest net new job growth potential in the greater Portland metropolitan region include: computer-related parts manufacturing; transportation equipment; other miscellaneous durable goods (such as solar panels); and miscellaneous non-durable goods (such as apparel research and design). Health-related medical devices and biomedical research, and organic food and beverage processing are also growing business sectors within the broader economy.

Clackamas County is well positioned to attract business investment in manufacturing, clean-technology and health-related medical research and service sectors. Efforts to retain existing employers, accommodate emerging small businesses, and attract new businesses are equally important. To optimize business investment potential, Clackamas County should evaluate its perceived advantages and disadvantages vis-à-vis the factors used for business location decision, as identified below.

III.D. BUSINESS LOCATION CRITERIA

Supporting research on business location decisions is quite extensive and findings tend to vary by type of industry, market orientation, establishment size, and other factors. Research by professors Fahri Karakaya (University of Massachusetts) and Cem Canel (University of North Carolina) published in 1998 included a survey of 84 firms which was completed by a chief executive officer. The firms included a mix of small, medium and large service and

[6] *These emerging business clusters are documented in the regional WIRED (Workforce Innovation and Regional Economic Development, Global Development Strategy, prepared by FCS GROUP et.al, 2008.*

manufacturing industries. The business survey results indicate that the top 10 factors considered for business location decision making include:

1. Availability of skilled labor
2. Availability of transportation facilities
3. State tax rate
4. Proximity to major airports
5. State regulatory environment
6. Real estate tax rate
7. Proximity to major highways/seaports
8. Availability of local airport
9. Cost of utilities
10. Availability of unskilled labor

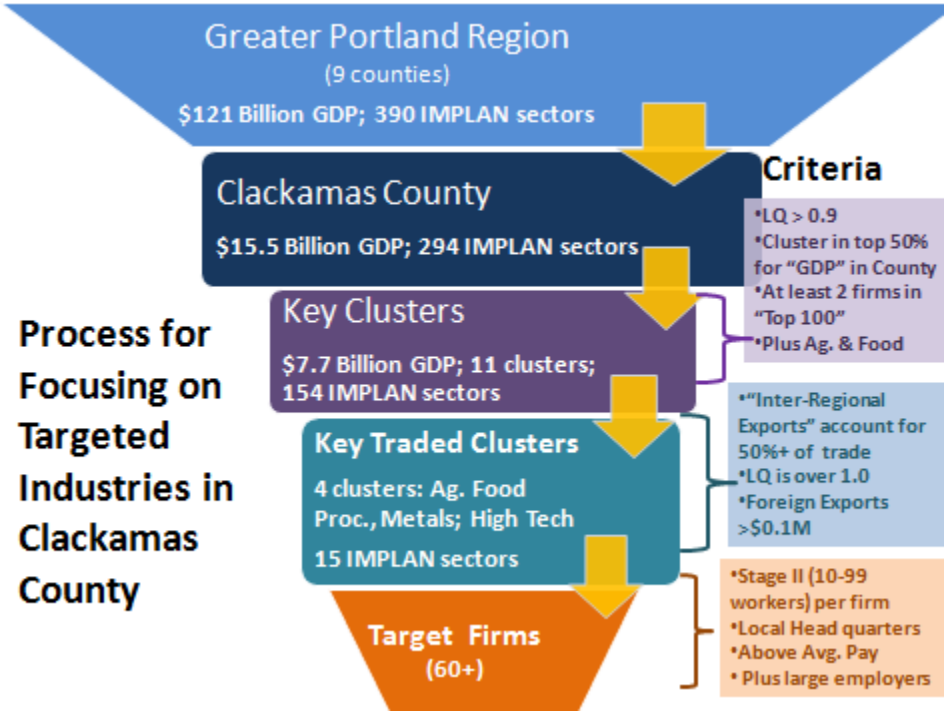
III.E. TARGETED BUSINESS OUTREACH

FCS GROUP utilized the IMPLAN model to analyze 145 detailed sectors within the 10 key clusters to identify emerging sectors within key traded clusters. The process used for the analysis in illustrated in **Figure 35**. This process allows Clackamas County to "screen" each sector to determine businesses that most likely to grow a rate faster than average with measurable levels of GDP and employment growth over the next 5-10 years.

Specific target sectors (within Clusters) were identified that met at least 6 of 7 criteria, including:

- Generated at least $10 million in annual economic output within the sector;
- GDP (value added) per employee above County average ($71,000+/job)
- Foreign exports over $0.1 million
- Industry location quotient greater than 1.0
- Commodity location quotient greater than 1.0
- Inter-regional exports/sales greater than 50% of total output
- Negative value (net outflow) of commodity demand from Clackamas County (this indicates more demand than supply of a particular commodity)

Figure 35 Process for Identifying Targeted Sector and Businesses



Approximately 15 detailed IMPLAN sectors met 6 or 7 of the above mentioned criteria. Those sectors were found in four key clusters, including:

Agriculture and Food Production

- Fertilizer manufacturing
- Pesticide and other agricultural chemical manufacturing

Food and Beverage Processing

- Dog and cat food processing
- Other animal food processing
- Snack food manufacturing

Advanced Manufacturing – Metals and Machinery

- Metal cutlery, utensils, pot and pan manufacturing
- Handtool manufacturing
- Metal tank manufacturing (i.e., vats for hops and grains)

Metal coating, engraving and heat treating

Advanced Technology – High Tech

- Computer terminals and peripheral equipment manufacturing
- Audio and video equipment manufacturing*
- Magnetic and optical recording media manufacturing*
- Storage battery manufacturing
- Communications and energy wire cable manufacturing*[7]

Clackamas County businesses within these 14 sectors were then screened using the Oregon Employment Department data base to identify specific businesses that met the following criteria:

- Stage II employment levels (10 to 99 workers) with local Clackamas County head quarters and above average annual pay rates.

Approximately 60 businesses within the 14 emerging sectors met these criteria. It is very likely that those businesses will experience significant growth over the next 5-10 years and it is recommended that Clackamas County staff conduct interviews with their representatives to ensure that their growth needs can be met, particularly as it relates to the key business location criteria listed in Section III.D.

It is also recommended that the County's larger Stage IV businesses (500+ employees) also be contacted to ensure that their site expansion needs and other key factors are being addressed locally or regionally.

[7] *Note, these sectors may also be reflected within the emerging film industry cluster in Clackamas County.

IV Development Overview

This section provides a summary of the major public and private development investments underway or recently completed in Clackamas County. While this is not to be considered a complete listing of all projects and investment activities, it is intended to represent the level of major investment activity that is occurring throughout the county. Please refer to **Figures 36 and 37** for a list and location of major public, private and public/private investment projects in Clackamas County.

IV.A. PUBLIC INVESTMENTS

Clackamas County is partnering with ODOT, Trimet and local cities to complete major transportation, parks and infrastructure facilities investments. Major recent and on-going construction projects include:

- MAX Orange Line – Light Rail Transit (Portland to Milwaukie)
- 172nd Ave. roadway improvements (Happy Valley)
- Lawnfield Road and Mather Road improvements (Clackamas Industrial Area)
- Tolbert Bridge (Clackamas Industrial Area)
- Sunrise Corridor Phase 1 Construction (I-205 to 122nd Avenue)
- Tri Cities sewer system capacity upgrades (serving Oregon City, West Linn, Gladstone, and other areas)
- Stafford-Borland Roundabout (north of I-205 in Stafford area)
- Monterey "Main Street" improvements (North Clackamas area)
- Oregon City Bridge renovation (Oregon City)
- Highway 224 improvements (ODOT led project included new pavement, streetlights, medians, intersections and landscaping)
- I-5/Wilsonville Road interchange

Other major institutional construction activities in Clackamas County include over $75 million in federal and local government investment at Camp Withycomb. Also, the Oregon Institute of Technology has relcoated into a 2,000 student college campus in Wilsonville..

IV.B. PUBLIC/PRIVATE INVESTMENTS

Local cities and special districts are working with property owners to complete several public/private developments. Selected activities include:

- Rock Creek Employment Center (planned 200-acre employment area in Happy Valley expected to attract 2,000 to 3,000 new jobs at buildout)
- Foothills Redevelopment (planned transit oriented redevelopment near downtown Lake Oswego with a $1.1 million design plan underway)
- North Clackamas Urban Renewal Area (sewer upgrades and connections being completed using federal grants, local urban renewal and private investment)
- Blue Heron Site (historic brownfield site in downtown Oregon City now being considered for a variety of public and private uses)
- Estacada Industrial expansion (city has added 130 acres of industrial zoned land to its UGB in 2011, targeted for large users)

In 2011, Clackamas County created a Strategic Investment Zone (SIZ) and Rural Renewable Energy Development Zone (RRED). These programs are valuable business recruitment tools to attract new businesses, create jobs and increase investment in Clackamas County.

IV.C. PRIVATE INVESTMENTS

Despite the weak economy, several major private developments are moving forward in Clackamas County. Selected private developments include:

- Lake Grove developments (major reconstruction of the former Wizer grocery store and shopping center is now underway, along new office buildings, and senior housing developments along Boones Ferry Road)
- Villebois neighborhood (private construction continues with new homes being added each month at this $400 million, 2,800 unit planned development in Wilsonville)
- Fred Meyer Center (new 145,000 sf commercial center to open this summer)
- Shimadzu expansion ($5 million factor expansion completed in Canby adding 54,000 sf of industrial floor area)
- Oregon Iron Works expansion ($40 million plant expansion underway in Clackamas Industrial Area) to make room for the first modern streetcar built in the United States in 60 years. The streetcar project is projected to create 50 to 100 jobs.
- Coca Cola Plant expansion (new 150,000 bottling and distribution plant in Wilsonville)
- Rockwell Collins expansion (private expansion in Wilsonville with 150 jobs added this year)
- OECO expanded their operation in Milwaukie to include the Pacific Scientific Electro Kinetics Division formerly located in California. OECO is a leading manufacturer of highly specialized alternator and generator systems and associated electronics and has supplied hardware for military and commercial programs. The expansion has the potential of adding 100 new employees to the Milwaukie facility.

- Pacific Natural Foods signed a long term lease in Wilsonville for a 302,765 square feet facility.

Figure 36 Major Public and Private Investments in Clackamas County

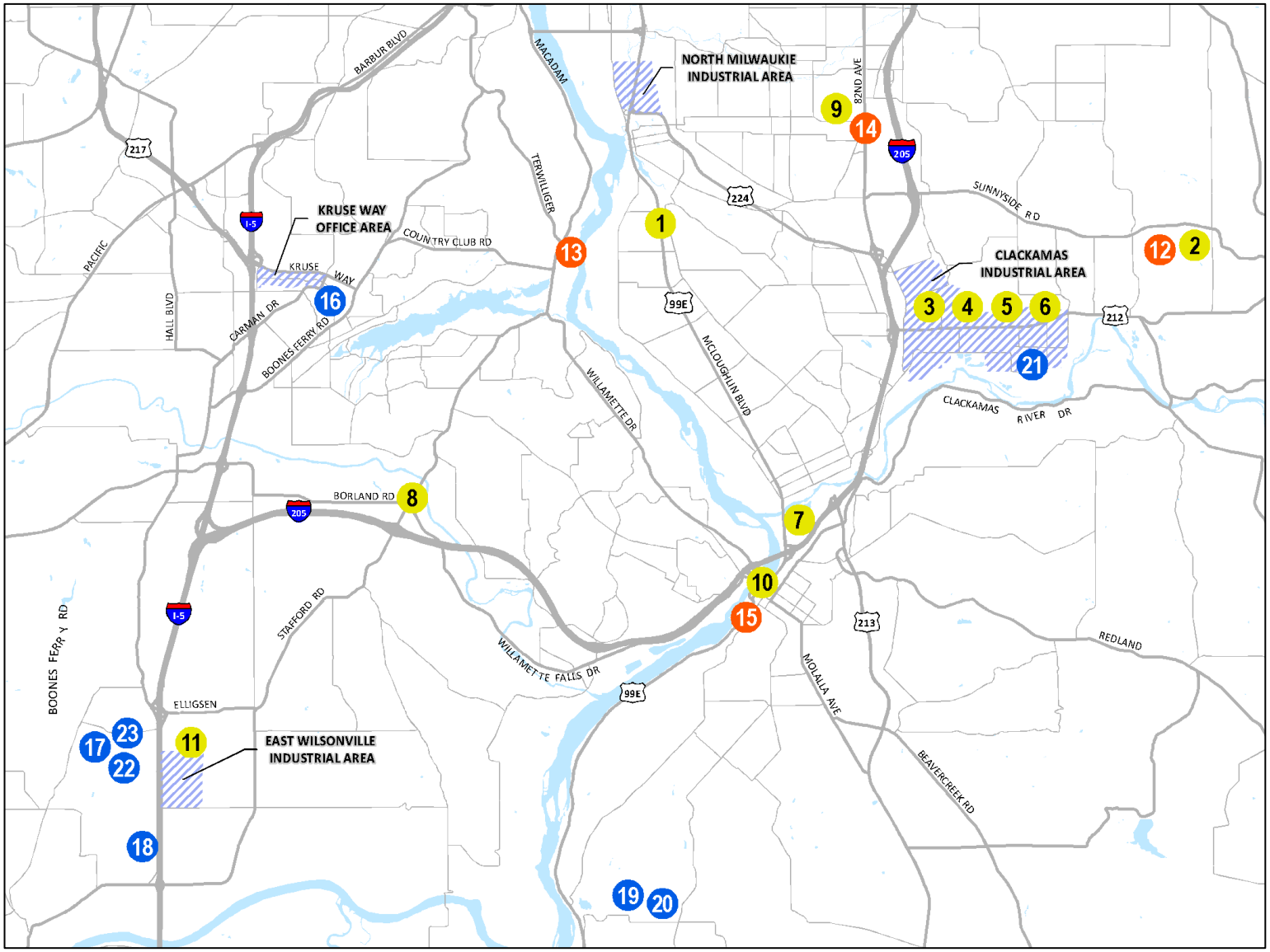
Map ID #	Project Title	General Location	Notes
1	MAX Orange Line - Light Rail Transit (LRT)	Portland to Milwaukie	LRT line will open in 2015, running from Portland State University to Milwaukie and Oak Grove; cost $1.5 Billion,
2	172nd Improvements	Happy Valley	New roadway and intersection improvements; cost $30 Million
3	Lawnfield & Mather Roads	Clackamas Industrial Area	Connection will provide some connectivity between Hwy 212 and I-5
4	Tolbert Bridge	Clackamas Industrial Area	New bridge improvement
5	Sunrise Corridor Phase 1 (I-205-122nd)	Clackamas Industrial Area	Phase 1 underway; cost $151 Million with $100 Million federal funding
6	Camp Withycombe Military Base Realignment	Clackamas	Consolidates military installations in the Portland area into one large installation; cost $72.4 million (federal government) with a $2.99 Million local match
7	Tri Cities Sewer Upgrade	Clackamas River	Clackamas Water Env. Services completing new waste water processing facility and new main; serves Oregon City, West Linn, Gladstone and other customers
8	Stafford-Borland Roundabout	Stafford Triangle	New 2-land roundable completed in 2010; cost $4 Million
9	Monterey "Main street" Improvements	North Clackamas	Improved streetscape, traffic light and widening; cost $8 Million
10	Oregon City Bridge repairs	Oregon City	Historic bridge renovation; cost $10.6 million
11	Oregon Institute of Technology, Wilsonville Campus	Wilsonville	Will utilize 141,000 SF building for an expected 2,000 student campus; consolidates 4 Portland area campus locations
12	Rock Creek Employment Center	Happy Valley	New employment area with over 200 acres; expected to attract 2-3,000 jobs
13	Foothills Redevelopment	Lake Oswego	Potential new transit oriented development; $1.1 million design plan now underway
14	North Clackamas Urban Renewal District (sewer upgrade)	North Clackamas	Area wide sewer conversion underway
15	Blue Heron Opportunity Site	Oregon City	Potential brownfield redevelopment site in downtown Oregon City

Figure 36 (continued)

Map ID #	Project Title	General Location	Notes
16	Lake Grove Developments	Lake Oswego	Lake Grove Shopping center renovation, senior housing and office building projects completed or underway
17	Villebois Neighborhood	Wilsonville	580 acres of land, 2,800 planned dwellings; cost $400 Million
18	Fred Meyer Center	Wilsonville	145,000 SF of commercial space, scheduled to open in July 2011
19	Shimadzu Expansion	Canby	$5 million expansion to factory will add 54,000 SF to existing plant
20	American Steel Expansion	Canby	
21	Oregon Iron Works Expansion	Clackamas Industrial Area	Plant expansion; cost $40 million
22	Coca Cola Plant Expansion	Wilsonville	150,000 SF expansion helped to add 12 jobs and consolidate four regional facilities into one
23	Rockwell Collins Expansion	Wilsonville	Added 150 jobs into Wilsonville location
24	Estacada Hwy. 224 Improvement	Estacada	Resurface road, streetlighting, medians, cost $1.5 million
25	Estacada industrial site UGB	Estacada	City added 130 acres to UGB in 2011

Legend:
- public/private development
- public development
- private development

Figure 37 Major public and private investments completed or underway in Clackamas County



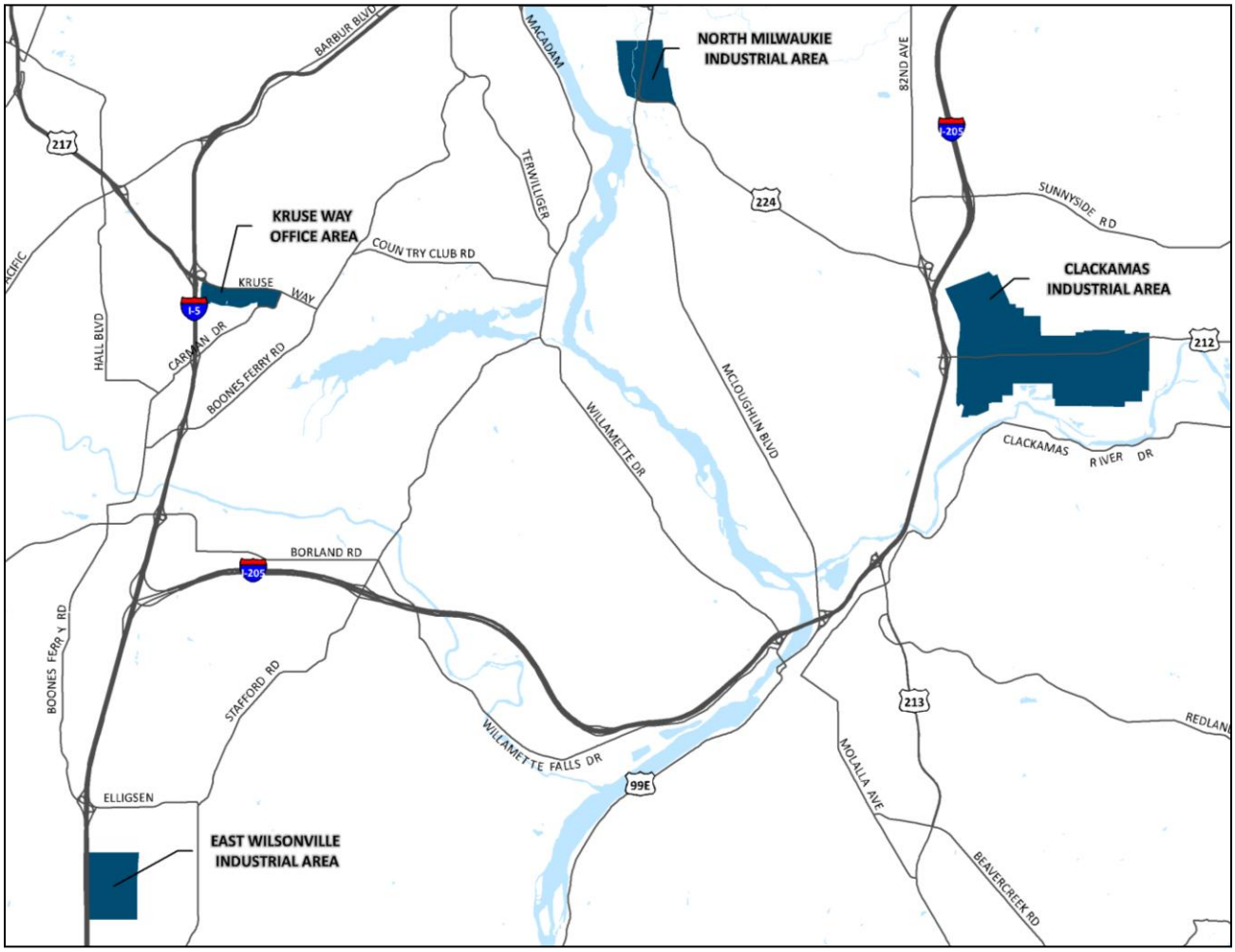
V Employment Centers Analysis

This section provides a summary comparison of the economic benefit derived from four major employment centers in Clackamas County.

To better understand the economic and fiscal benefit of land use planning policies for employment areas, an evaluation of four established employment centers was conducted. The four employment areas are shown in **Figure 38** and included:

- **North Milwaukie Industrial Area** – vintage 1960 to1970 industrial park location, created before I-205 was constructed.
- **Clackamas Industrial Are**a – planned industrial area that was developed primarily in the 1980s and 1990s after I-205 was constructed; additional investment in the early 2000s.
- **East Wilsonville Industrial Area** – a planned industrial campus and R&D area that includes high tech corporate campuses for firms such as Xerox. Development occurred primarily in the 1990s and 2000s.
- **Kruse Way Area** – a planned office corridor that was developed primarily in the 1990s and 2000s

Figure 38 Employment Area Locations



The relative economic and fiscal benefits for each of these employment centers are summarized in **Figure 39.** The key highlights include:

- Total direct value added per acre ranged from $718,000/acre in the North Milwaukie Industrial Area to $7.9M/acre (Kruse Way).
- Current average job density per acre in 2010 is estimated to range from 6.8 jobs per acre in the North Milwaukie Industrial Area to 44 jobs per acre in Kruse Way. Average job density in 2006 ranged from 2.7 in North Milwaukie to 6.0 in Clackamas Industrial Area to 7.3 in E. Wilsonville to 34.1 jobs per acre in Kruse Way.
- Average "covered" wages per job in 2010 ranged from $43,642 in the Clackamas Industrial Area to $93,455 in East Wilsonville.
- Assessed value per acre ranged from $663,000/acre (N. Milwaukie) to $3.1/acre (Kruse Way).

Figure 39 Comparison of Employment Areas

	Clackamas Industrial Area	E. Wilsonville	Kruse Way	North Milwaukie
"Covered" Jobs in Location	10,116	3,540	3,822	1,169
Value Added	$ 1,121,330,273	$ 499,928,016	$ 685,108,271	$122,758,461
Output (direct)	$ 1,972,376,330	$ 1,123,214,786	$ 1,105,095,216	$201,858,353
Regional Output (direct & secondary)	$ 2,685,179,435	$ 1,642,660,371	$ 1,597,356,924	$272,206,459
Developed Acres (net acres)	1,056	240	86	171
Jobs Per Developed Acre	9.6	14.8	44.4	6.8
Assessed Value Per Developed Acre	$ 663,430	$ 788,354	$ 3,060,314	$ 587,404
Value Added Per Developed Acre	$ 1,061,866	$ 2,083,033	$ 7,966,375	$ 717,886
Output Per Developed Acre (direct)	$ 1,867,781	$ 4,680,062	$ 12,849,944	$ 1,180,458
Regional Output Per Developed Acre (direct & secondary)	$ 2,542,784	$ 6,844,418	$ 18,573,918	$ 1,591,851
Direct Covered Wages Per Job (2010)	$ 43,642	$ 93,455	$ 84,394	$ 47,468
Value Added Per Job (covered)	$ 110,847	$ 141,223	$ 179,254	$ 105,012
Output Per Job (direct)	$ 194,976	$ 317,292	$ 289,141	$ 172,676
Regional Output Per Job (direct & secondary)	$ 265,439	$ 464,028	$ 417,937	$ 232,854

Source: analysis by FCS GROUP and Real Urban Geographics based on 2010 employment and payroll data, and Jan. 2012 assessed value levels; and IMPLAN model multiplier assumptions.

VI Summary and Policy Discussion

VI.A. SUMMARY OF FINDINGS

This Clackamas Economic Landscape Update reflects the significant economic changes that have occurred over the past few years, as the local and regional economy slowly emerge from the "Great Recession" and reflect changing national and international economic conditions. The findings indicate that modest positive growth in Clackamas County gross domestic product (GDP) did occur over the 2006-2010 timeframe, as the county GDP increased to $15.5 billion (expressed in 2011 dollars).

During the 2006 to 2010 time frame the County growth in GDP did slightly outpace the nine-county region. However, average earnings within Clackamas County continue to lag significantly below the regional average. Continued efforts to spur business investment within the key clusters are expected to enhance growth average earnings and GDP within the County.

Certain clusters are performing better than others in Clackamas County. Among the key clusters, there are several sectors within the Agriculture and Food Production, Food and Beverage Processing, Advanced Manufacturing- Metals and Machinery, and Advanced Technology-High Tech clusters that show significant growth potential over the next 5-10 years.

A focused business outreach effort aimed at Stage II (9-100 workers) businesses within key growth industry sectors is recommended. Clackamas County has a very large proportion of small and self-employed establishments, and "home based" business enterprises. The targeted Stage II companies could include several "gazelle" firms that are expected to growth significantly over the next few years.

Marketing efforts aimed at spurring local purchases of agriculture and food could also have measurable impacts on GDP and job growth within Clackamas County and the region.

A more focused cluster development strategy may be required for Clackamas County to fully capitalize on the emerging film and media production cluster.

Focused employment growth in new emerging locations, such Rock Creek Employment Center in Happy Valley, Estacada, Molalla, Canby and Oregon City may represent the best remaining future industrial job growth areas within the county over the coming decades.

VI.B. POLICY CONSIDERATIONS

Clackamas County should continue to involve business owners to consider the relative advantages and weaknesses with regard to the top 10 business location decision factors, described previously, and to understand opportunities for enhancing local supply chains. Particular attention should be focused on understanding workforce training needs and issues associated with business expansion requirements.

Steps should be taken to assure that the county has adequately addressed these and other issues, particularly as they apply to the key clusters within the targeted business sectors.

Given the importance of transportation facilities in business location decisions, efforts to improve transit, highway and bicycle/pedestrian access should continue. National and foreign trade brings in dollars that support and sustain the local and regional economy. Clackamas County staff should continue to work with state and regional entities, and businesses to encourage expansion of goods and services for export. In 2010, private businesses in Clackamas County's key clusters added nearly $3 billion to the county/regional GDP (export trade outside the nine-county region) in 2010, as indicated in Figure 40.

Figure 40. Estimated Annual Value of Exports: Clackamas County Clusters, 2010

Cluster Name	Exports (share of trade derived from outside 9-county region)	Value of Exports (Annual GDP Impact)	Rank
Wholesale Trade	**45%**	$735 M	1
High Tech	**74%**	$697 M	2
Advanced Mfg. - Metals	**77%**	$448 M	3
Prof. & Business Services	**8%**	$204 M	4
Nurseries & Greenhouses	**83%**	$98 M	5
Transportation & Distribution	**35%**	$96 M	6
Film & Media Production	**43%**	$91M	7
Food & Bev. Processing	**35%**	$49 M	8
Ag.& Food Production	**45%**	$45 M	9
Wood Product Mfg.	**56%**	$26 M	10

Source: analysis by FCS GROUP based on 2010 IMPLAN data for Clackamas County.

Appendix A – Glossary

Assessed Value (AV)

The AV is the amount of estimated taxable valuation of land and improvements on a taxable parcel; often obtained by the county assessor.

BEA

Bureau of Economic Analysis is the economic analysis division contained within the U.S. Department of Commerce.

Covered Employment

The total number of jobs reported to the Oregon Employment Department at public, private and non-profit establishments for unemployment insurance compensation accounting purposes.

Direct (Primary) Effects

The direct economic activity (employment, labor income, value added, output) per change in final demand specified for a given sector. Sometimes referred to by economists as first round impacts attributed to changes in investment or spending within a local economy.

Earnings Multipliers

Input-output ratios that measure earnings paid to households by employment throughout the economy, directly and indirectly, in connection with delivery of $1 million of final demand for a specific commodity.

Economic Census

Economic census provides a detailed portrait of the nation's economy once every 5 years, from the national to the local level. The basic statistics collected cover nearly all of the U.S. economy except agriculture and government, which are covered by concurrent economic censuses. Several related programs collect additional statistics, including those on minority- and women-owned businesses. The economic census is conducted largely by the Census Bureau; the census of agriculture is conducted by the U.S. Department of Agriculture. The economic census for 1997 compiled and published data primarily on a NAICS basis for the first time.

Economic Output

Economic output represents the value of industry production. In IMPLAN, these are annual production estimates for the year of the data set and are in producer prices. For manufacturers this would be sales plus/minus change in inventory. For service sectors, production equals sales. For retail and wholesale trade, output equals gross margin and not gross sales. Indirect and induced economic output is derived from the I-O total requirements tables, the output multipliers show the amount of output required to satisfy a given level of final-use expenditures. For the commodity-by-commodity total requirements table, it is the production required both directly and indirectly of the commodity at the beginning of each row per dollar of delivery to final use of the commodity at the top of the column. For the industry-by-commodity total requirements table, it is the industry output required to deliver a dollar of a commodity to final users. For the industry-by-industry total requirements table, it is the industry output required to deliver a dollar of industry output to final users.

Economic Production

Economic production is an activity carried out under the control and responsibility of an institutional unit that uses inputs of labor, capital, and goods and services to produce outputs of goods or services.

Employee or Employment

An employee is a person who enters an agreement, which may be formal or informal, with an enterprise to work for the enterprise in return for remuneration in cash or in kind.

Employee Compensation

Employee compensation in IMPLAN is the total payroll cost of the employee paid by the employer. This includes, wage and salary, all benefits (e.g., health, retirement, etc) and employer paid payroll taxes (e.g., employer side of social security, unemployment taxes, etc).

Establishment

An economic unit—business or industrial—at a single physical location where business is conducted or where services or industrial operations are performed. Examples include a factory, mill, store, hotel, movie theater, mine, farm, ranch, bank, railroad depot, airline terminal, sales office, warehouse, or central administrative office. One or more establishments make up an enterprise or a company. However, a single establishment may be comprised of subunits, departments, or divisions. In the industry classification systems—the establishment is the basic unit for collecting many types of economic information.

An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added.

Exempt AV

Exempt AV is the amount of estimated taxable valuation of land and improvements that is excluded in the calculation of total assessed value for a taxable parcel; often obtained by the county assessor.

Gross Domestic Product (GDP)

The difference between an industry's or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). The IMPLAN model includes labor income, proprietor profits, business income and tax payments as measures of GDP. See also "value added."

Households

Residents of the study area. Final users of nondurable goods and services. One of several institutions in IMPLAN.

IMPLAN

An economic model published by the Minnesota IMPLAN Group, also known as the Impact Model for Planning. IMPLAN was originally developed in the 1970s for the U.S. Government for use in understanding the economic effects of various industry sectors on local and regional economies. IMPLAN version 3.0 software was utilized for this analysis.

Indirect Business Taxes (IBT)

Prior to the 2003 comprehensive National Income and Product Accounts (NIPA) revision, IBT was the name of one of the three components of value added. It consists of tax and nontax liabilities that are chargeable to business expenses when calculating profit-type incomes and of certain other business liabilities to government agencies that are treated like taxes. Thus, IBT includes taxes on sales, property, and production, but it excludes employer contributions for social insurance and taxes on income. As part of the NIPA revision, this component was modified and termed "taxes on production and imports less subsidies." The major differences between the two are attributable to the treatments of subsidies and non-taxes.

Indirect Effects

The indirect change in a measure of economic activity (employment, labor income, value added, output) per change in the amount of final demand specified for a given sector. Indirect ratios show the production required of an industry and of all other industries to meet that industry's initial demand for production.

Induced Effects

The induced change in a measure of economic activity (employment, labor income, value added, output) per change in the amount of final demand specified for a given sector, resulting from interaction of institutions – usually associated with the indirect effects of household spending.

Input-Output Analysis

A type of applied economic analysis that tracks the interdependence among various producing and consuming sectors of an economy. More particularly, it measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands.

Labor Income

All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.

Location Quotient

Propensity of jobs to locate in Clackamas County in comparison to the entire Regional PMSA.

NAICS

North American Industry Classification System. A system of industrial classification—developed and used by the United States, Canada, and Mexico—for grouping establishments by similarity of production process. Beginning with the 1997 economic census, NAICS has replaced the 1987 Standard Industrial Classifications as the primary industry classification system used for U.S. economic statistics. NAICS features more detailed classifications for the services industries and improved classifications for the high-tech industries. (See also "Economic Census".)

Proprietor Income

Proprietor income consists of payments received by self-employed individuals and unincorporated business owners. This income also includes the capital consumption allowance.

Real Market Value (RMV)

Real market value is the estimated total market value of land and improvements on a taxable parcel; often obtained by the county assessor based on an appraised value or recorded sales transaction.

Regional Purchase Coefficient

A regional purchase coefficient (RPC) is the proportion of the total demand for a commodity by all users in the Study Area that is supplied by producers located within the Study Area. For example, if the RPC for the commodity 'fish' is 0.8, then 80 percent of the demand by local fish processors, fish wholesalers, and other fish consumers are met by local fish producers. Conversely, 20 percent of the demand for fish is satisfied by imports.

Sector

In the national economic accounts, the institutional units that make up the total economy: business, households and institutions, and general government. The sectors are generally the two-digit NAICS level—though manufacturing, retail, and transportation and warehousing span several two-digit codes.

Total Impacts

Total impacts equal the sum of the direct, indirect and induced impacts.

Value Added

The difference between an industry's, or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus (formerly "other value added"). Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector; gross value added is the source from which the primary incomes of the SNA are generated and is therefore carried forward into the primary distribution of income account.

If you have any questions or comments about the Clackamas County Economic Landscape project, please contact:

Clackamas County Business & Economic Development Department

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