NON-RETAIL EMPLOYMENT LAND DEMAND

A Presentation to the Board of County Commissioners

Clackamas County, Oregon

November 12, 2014

Context and Purpose

Project Objective:
To inform the regional discussion of employment land supply and Clackamas County's role in accommodating regional economic growth.

Project Scope:
To develop a land demand forecast for Clackamas County areas within the Metro Urban Growth Boundary. Limited to Non-Retail Uses.

Project Approach:
Use of methodologies consistent with forecast methods used in Goal 9 Economic Opportunities Analysis.

- Maintains continuity with regional planning efforts

PROJECT THEME

Change the Narrative

Report Organization

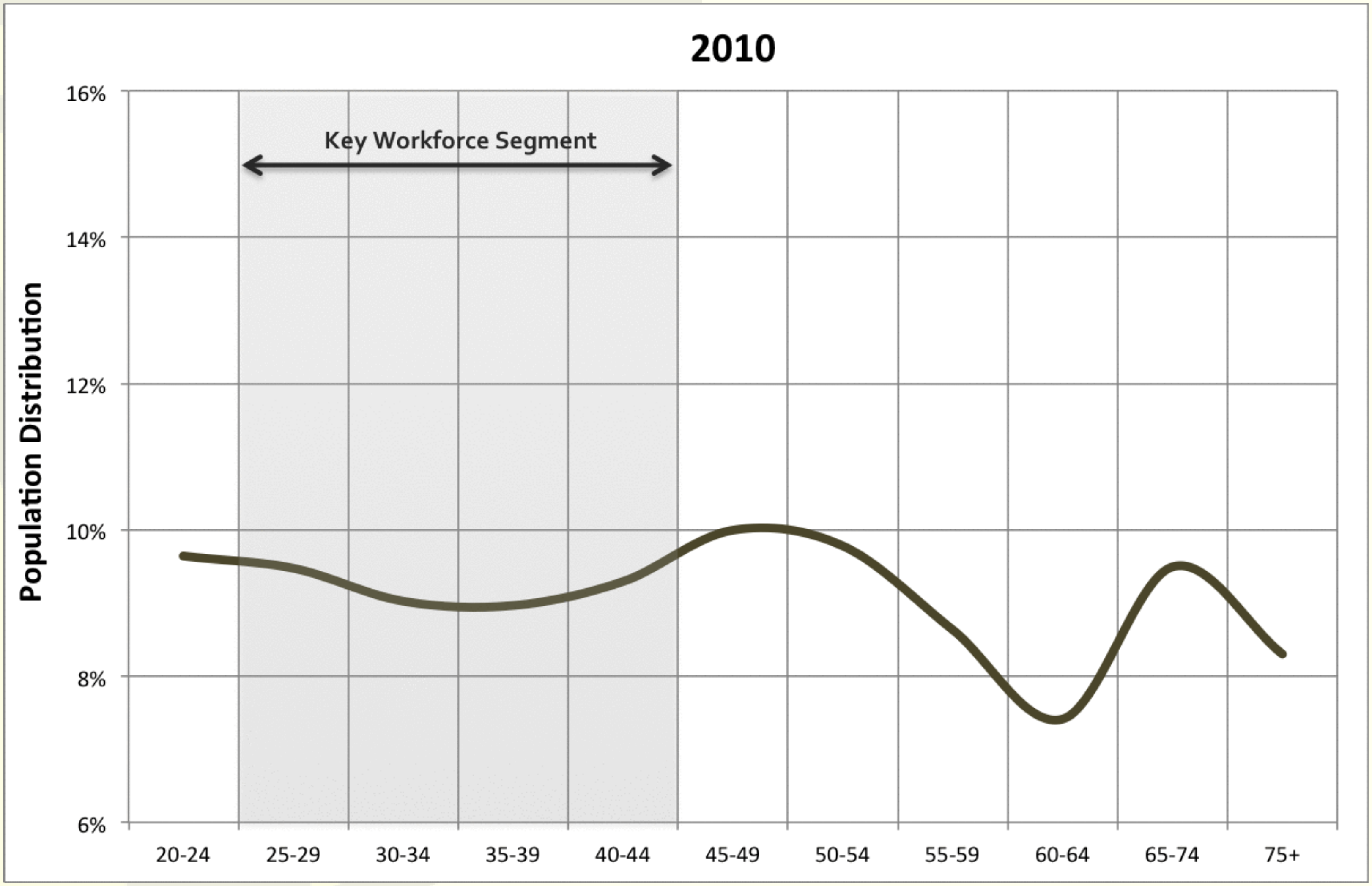
Baseline Economic Conditions:
The structural economic conditions on a global, national, and local scale that will influence the general direction of the economy and specific industries.

Target Industry Analysis:
An evaluation of the composition of the ***local*** economy. Serves to categorize how firms and industries are related to each other and to identify economic opportunities for growth.

Employment and Land Forecasts:
Translate economic conditions into forecasts of future employment and land need.

Economic Conditions

Underlying Demographics



ECONOMIC CONDITIONS

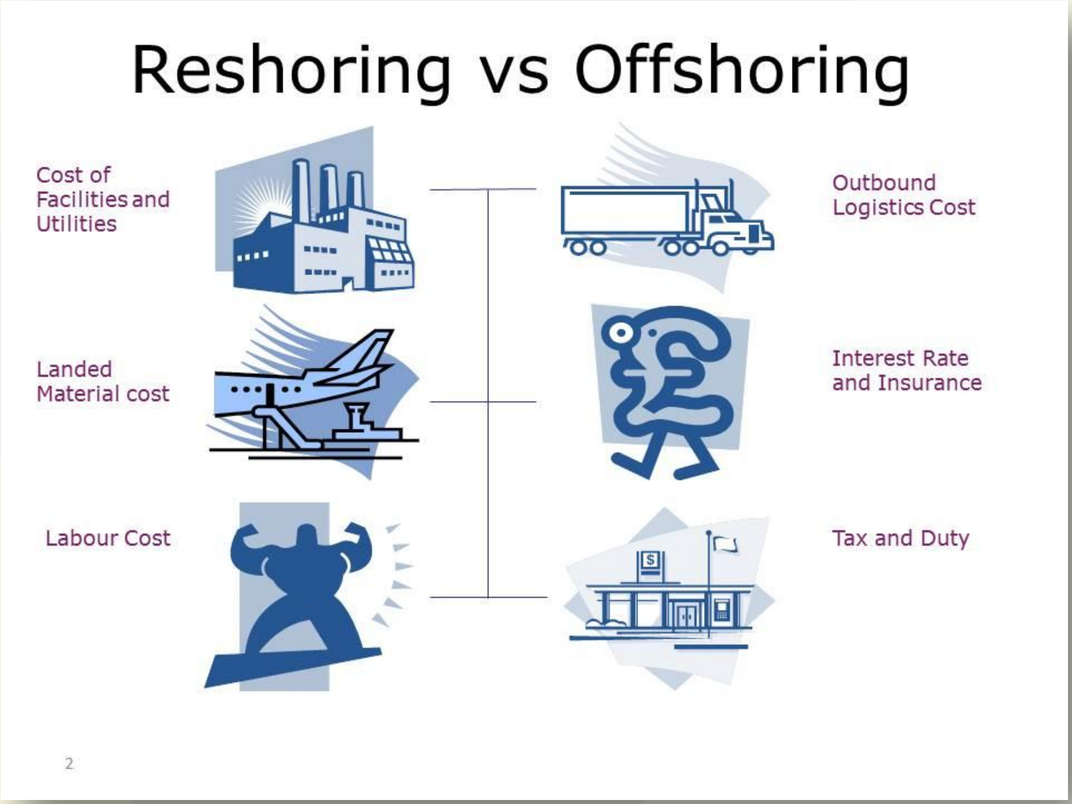
Globalization

Competing Global Impacts

- Increase in Global Demand
- Dilution of Risk
- Lower International Migration
- Re-shoring Prospects

ECONOMIC CONDITIONS

Re-shoring Prospects

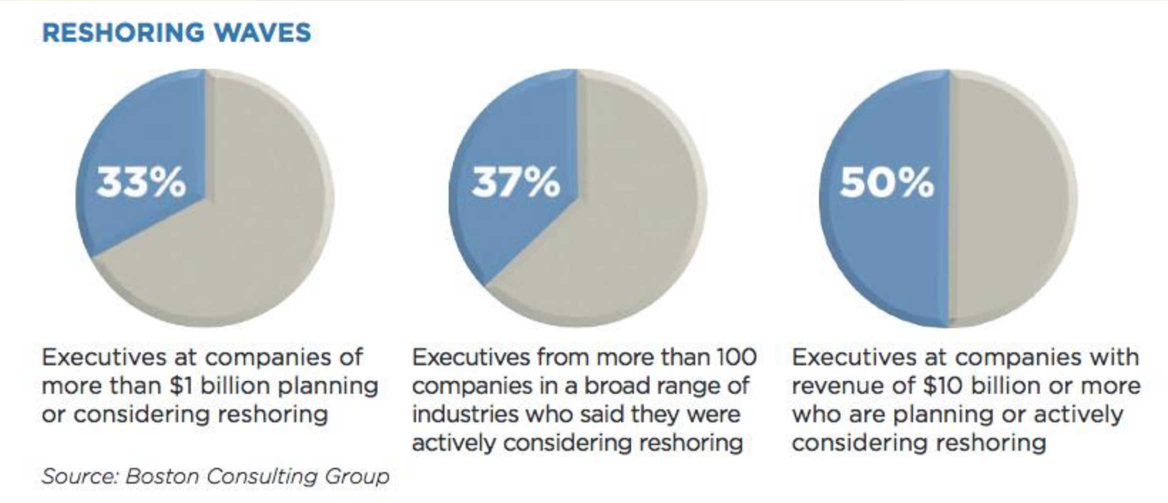


Characteristics of Re-shoring Industries and Firms

- Lower Labor Utilization
- Higher rates of domestic markets
- Durable goods with high shipping cost to value ratios
- Products where safety and intellectual property are concerns

ECONOMIC CONDITIONS

Re-shoring Prospects

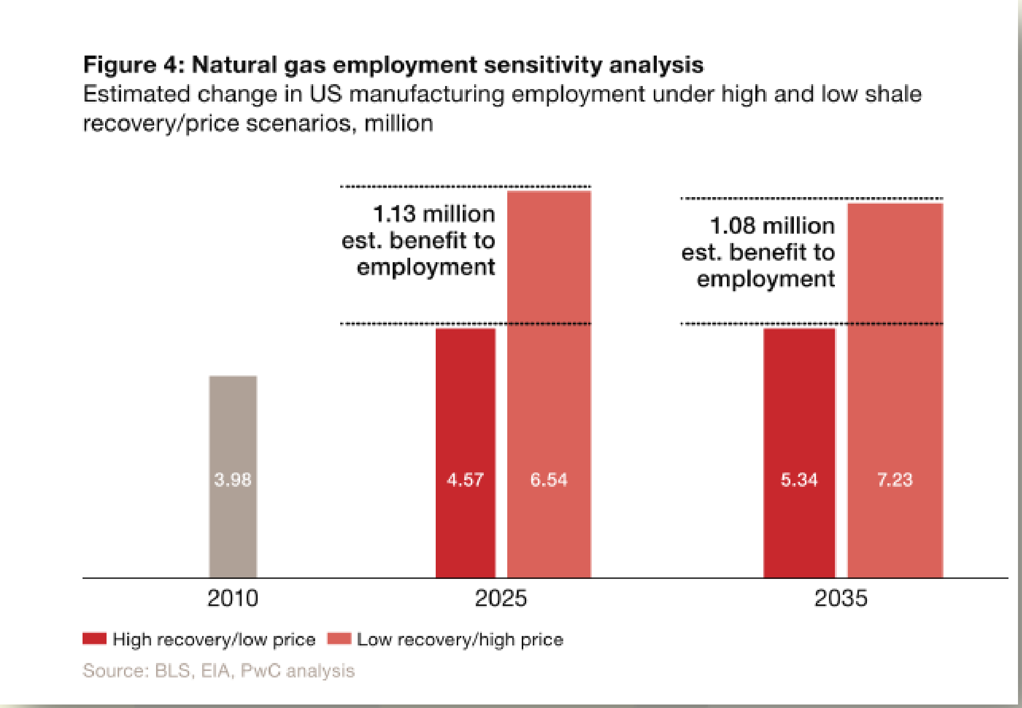


Most Likely Re-Shoring Industries

- Transportation Products
- Computers & Electronics
- Metals & Heavy Machinery
- Chemicals & Food

ECONOMIC CONDITIONS

Energy Revolution



Most Likely Industries Impacted

- Primary Metals
- Fabricated Metals
- Machinery
- Petrochemicals
- Nonmetallic Minerals
- Plastics and Rubber

Economic Conditions

Why the Emphasis?

Primary Metals

Fabricated Metals

Machinery Manufacturing

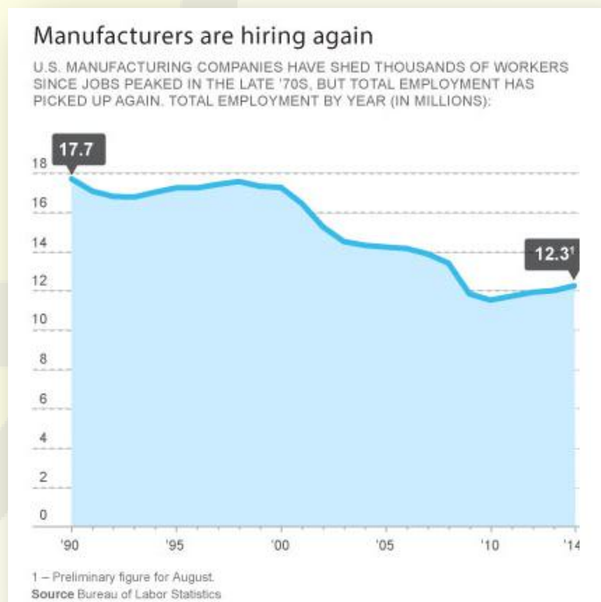
	Share of Clackamas County Manufacturing	UGR Projected Growth
Primary Metals	15%	-24%
Fabricated Metals	23%	-9%
Machinery Manufacturing	7%	-10%

ECONOMIC CONDITIONS

Double Exports in Five-Years:
"Nearly one-fifth of the Portland metropolitan economy is generated by exports, which translates into jobs.

TOP MANUFACTURING GROWTH REGIONS IN THE UNITED STATES	
1	Seattle-Bellevue-Everett
2	Oklahoma City
3	Salt Lake City
4	Houston-Sugar Land-Baytown
5	Warren-Troy-Farmington Hills
6	Cincinnati-Middletown
7	San Antonio-New Braunfels
8	Austin-Round Rock-San Marcos
9	Fort Worth-Arlington
10	Milwaukee-Waukesha-West Allis
19	**Portland-Vancouver-Beaverton**

Energy Benefit Impact:
1.1 Million Jobs by 2025

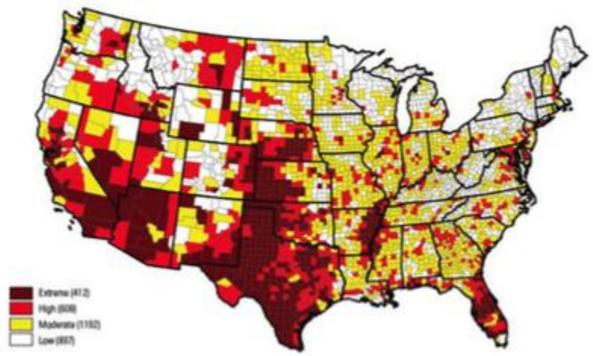


Where the Jobs Are:
Over 2.5 million "middle-skill" jobs will be created through just 2017.

~USA Today Special Report, Where the Jobs Are, Part 1.

Economic Conditions

Conditions Unique to Oregon



Water Supply Sustainability Risk Index, 2050

Source: Natural Resources Defense Council July, 2010 "Climate Change, Water, and Risk: Current Water Demands are not Sustainable"

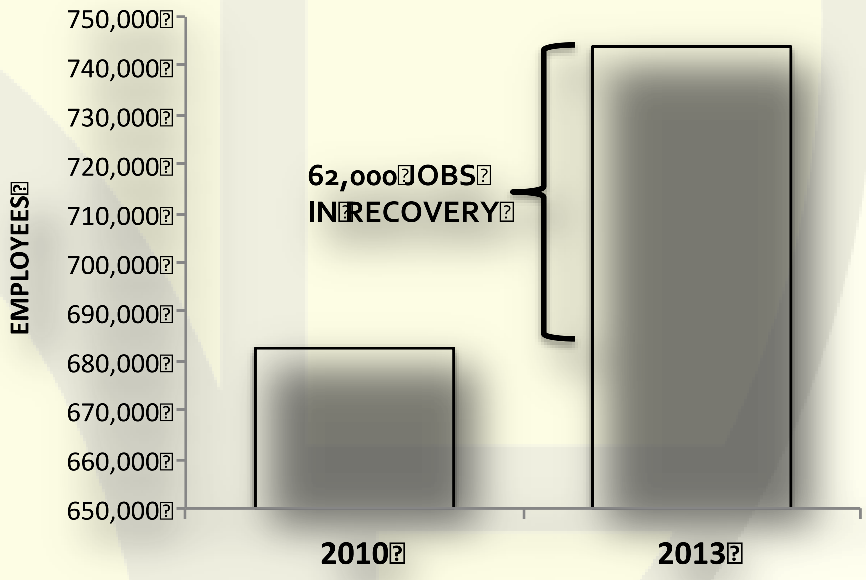
Migration:
Demographic population shifts could be less impactful in Oregon as a result of strong migration from other domestic regions.

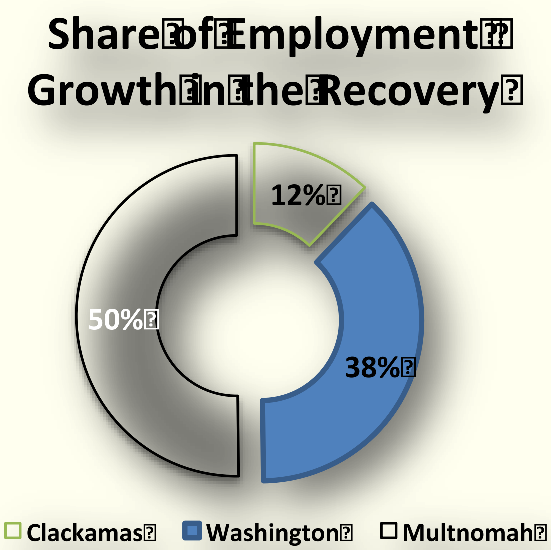
Exports:
Strategic locational access to the world's fastest growing economies. Plan to double exports in five-years.

ECONOMIC CONDITIONS

Clackamas County

Change the Regional Narrative!!!

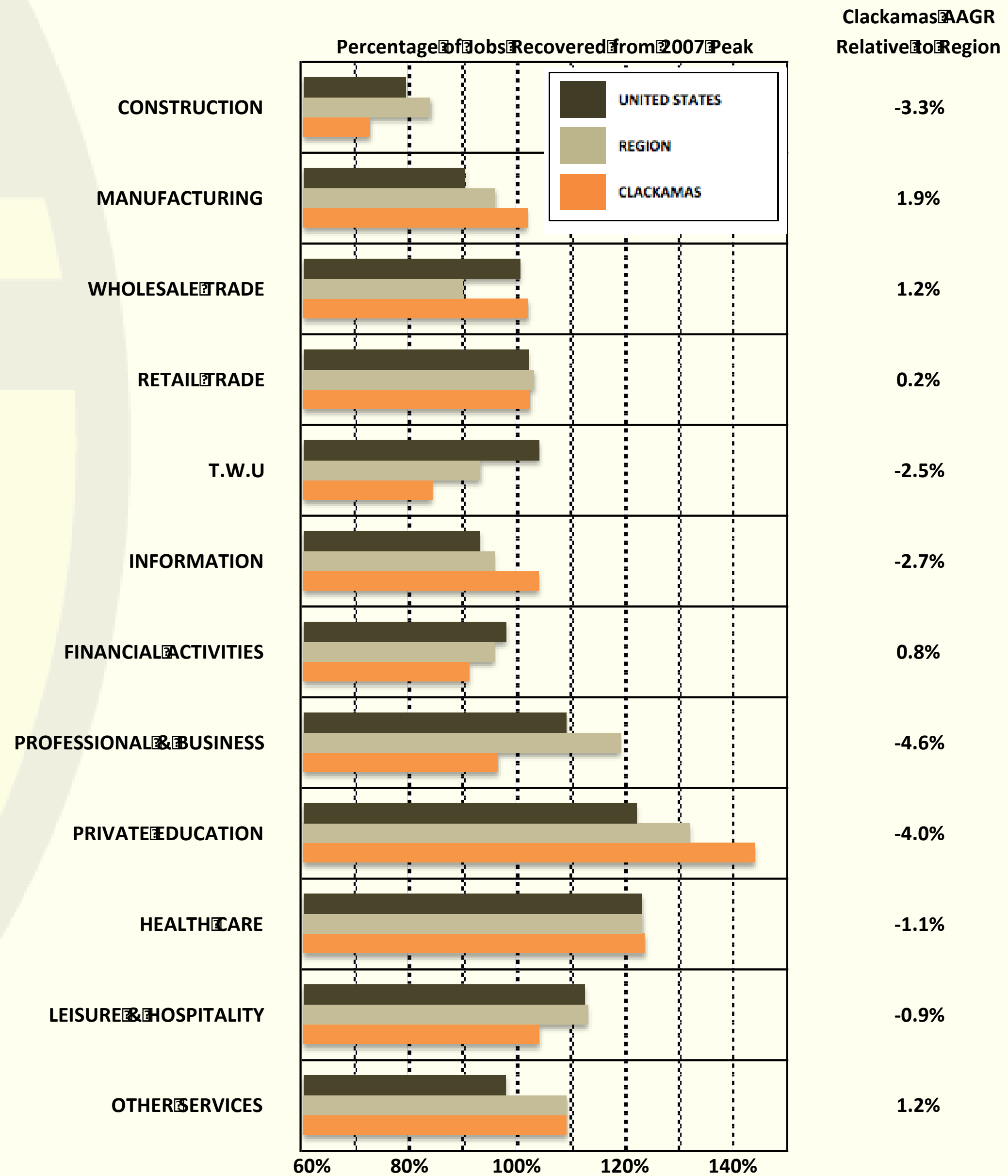




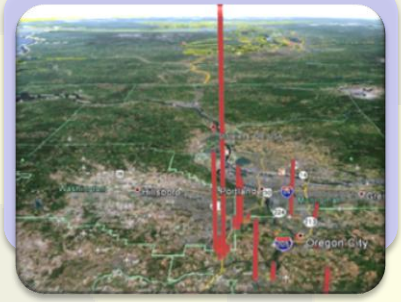
Competitive Disadvantage or something else?

ECONOMIC CONDITIONS

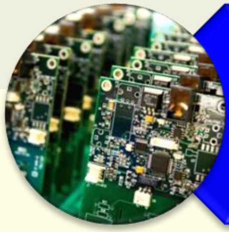
Finding:
Clackamas County's laggard recovery is more a function of its economic composition. Most sectors have recovered comparably to the region as a percentage of the economy.



Target Industry Analysis



Economic Landscaping



Economic Specialization

Economic Drivers

Industry Linkage Analysis

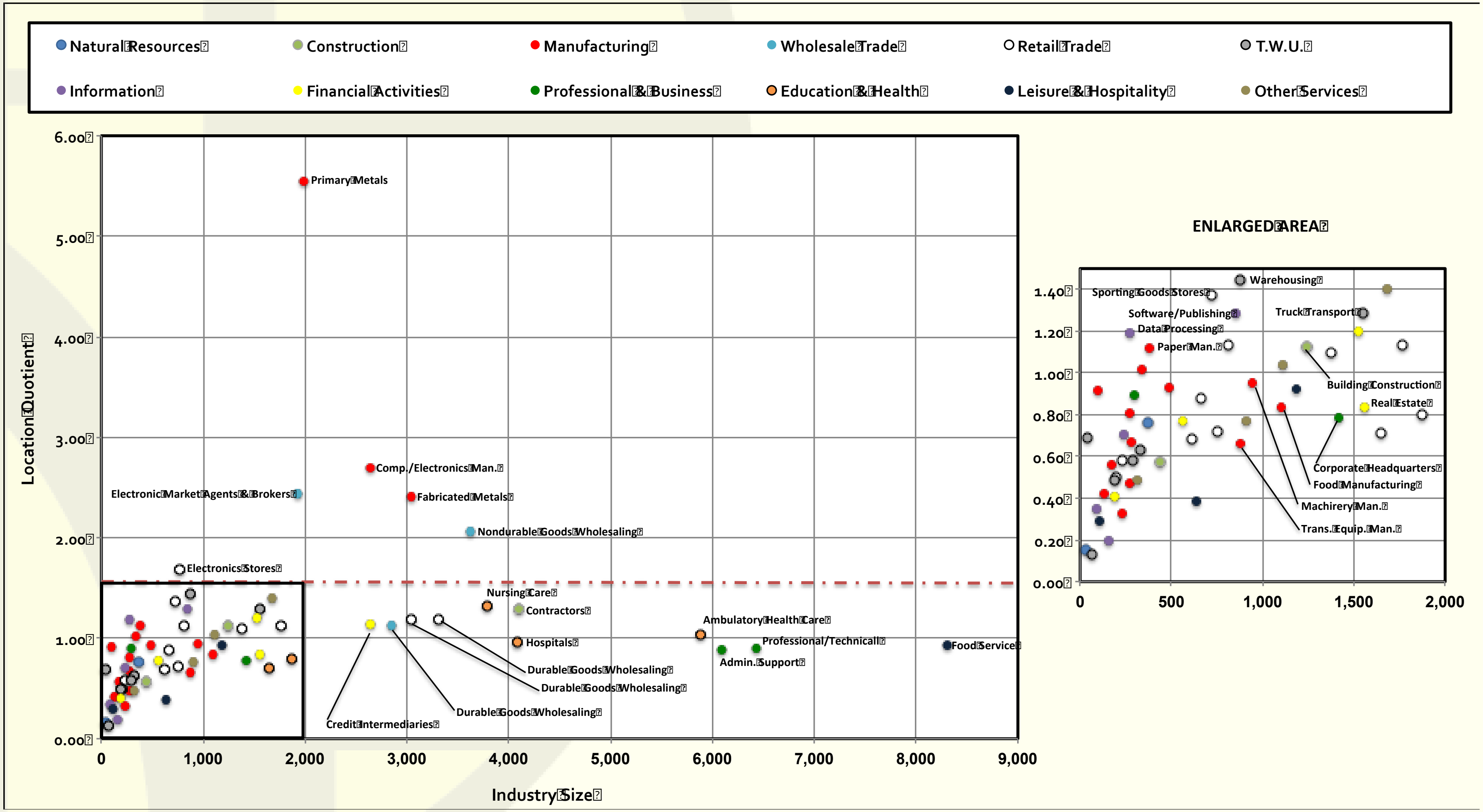
Industry Sector Analysis

Value-Added Analysis

Economic Cluster Analysis

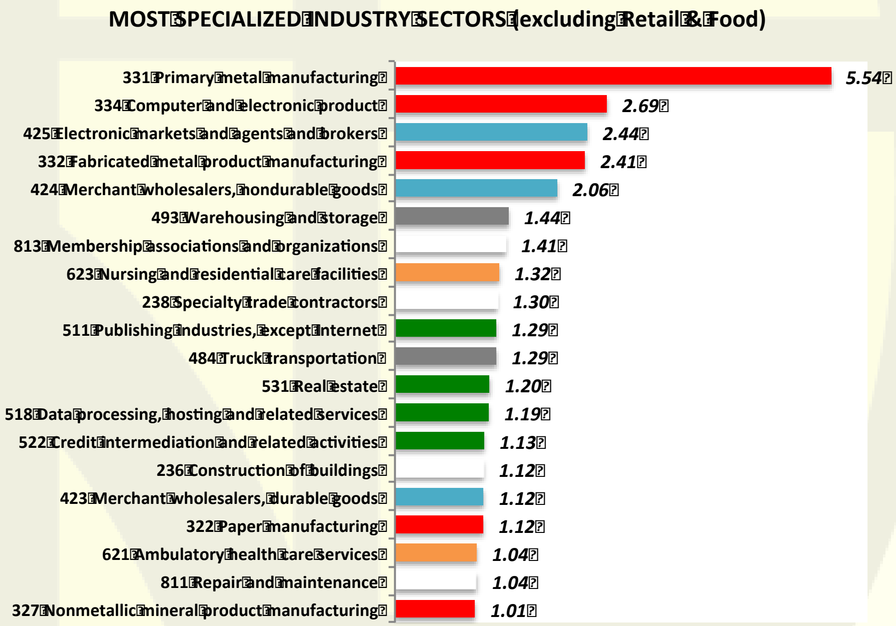
TARGET INDUSTRY ANALYSIS

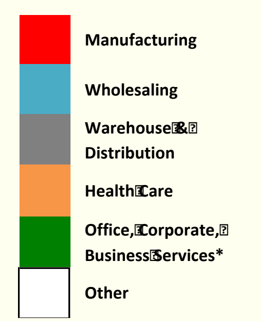
Economic Specialization



TARGET INDUSTRY ANALYSIS

Economic Specialization



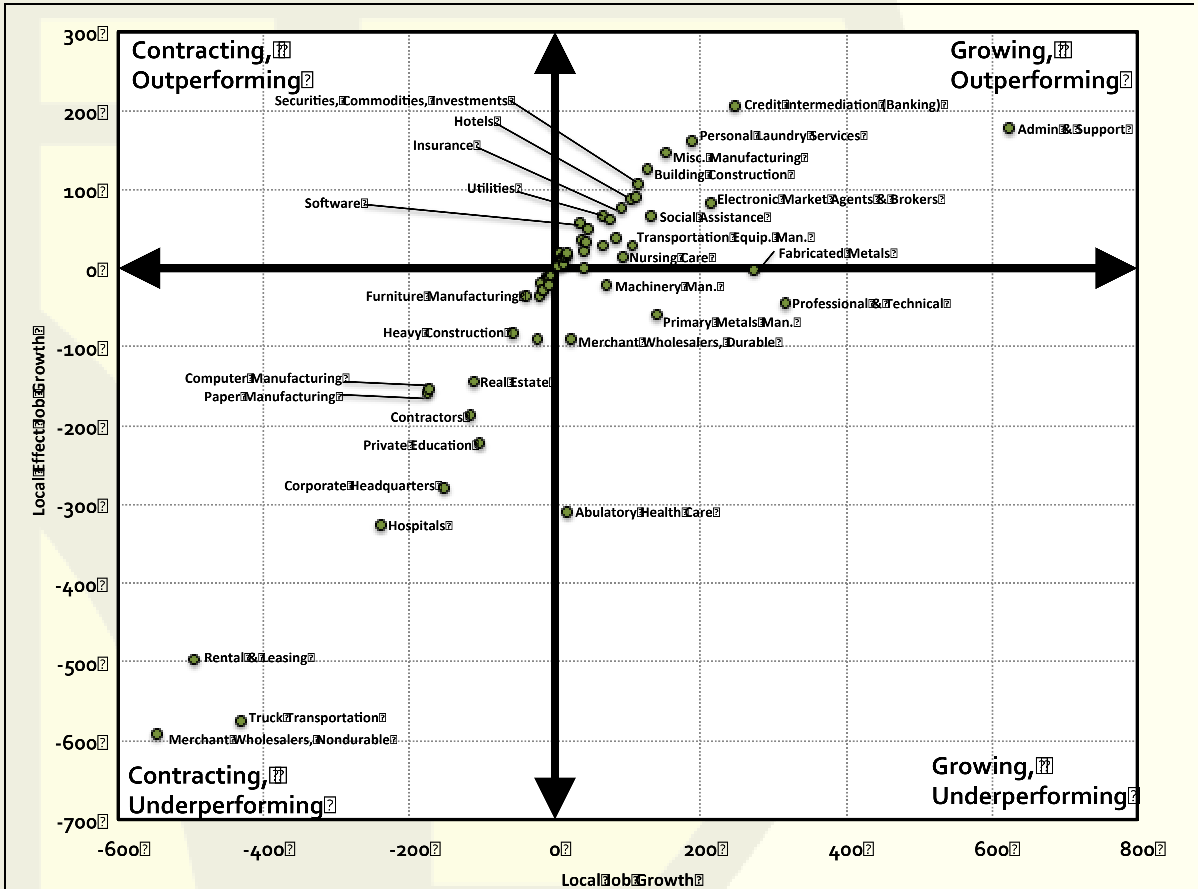


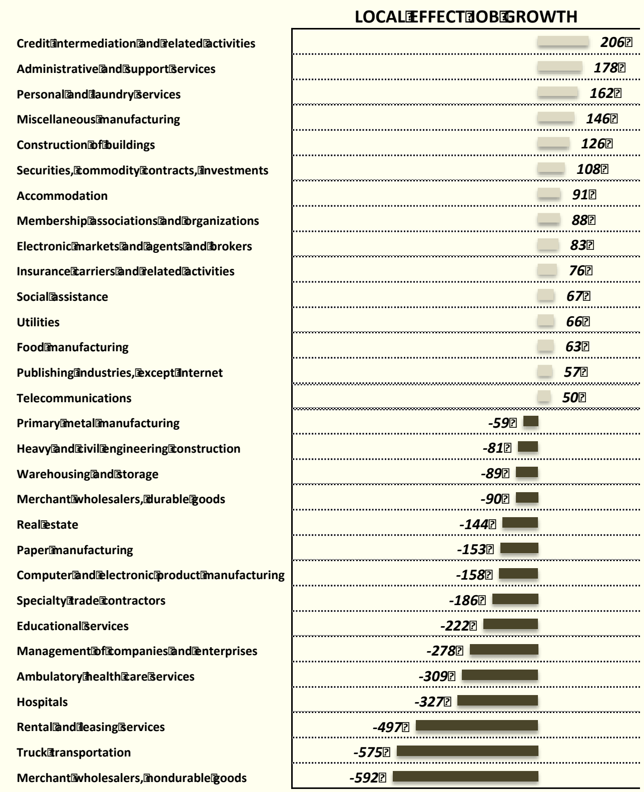
Specialization:

Explains roughly 60% of the economy.

TARGET INDUSTRY ANALYSIS

Economic Drivers



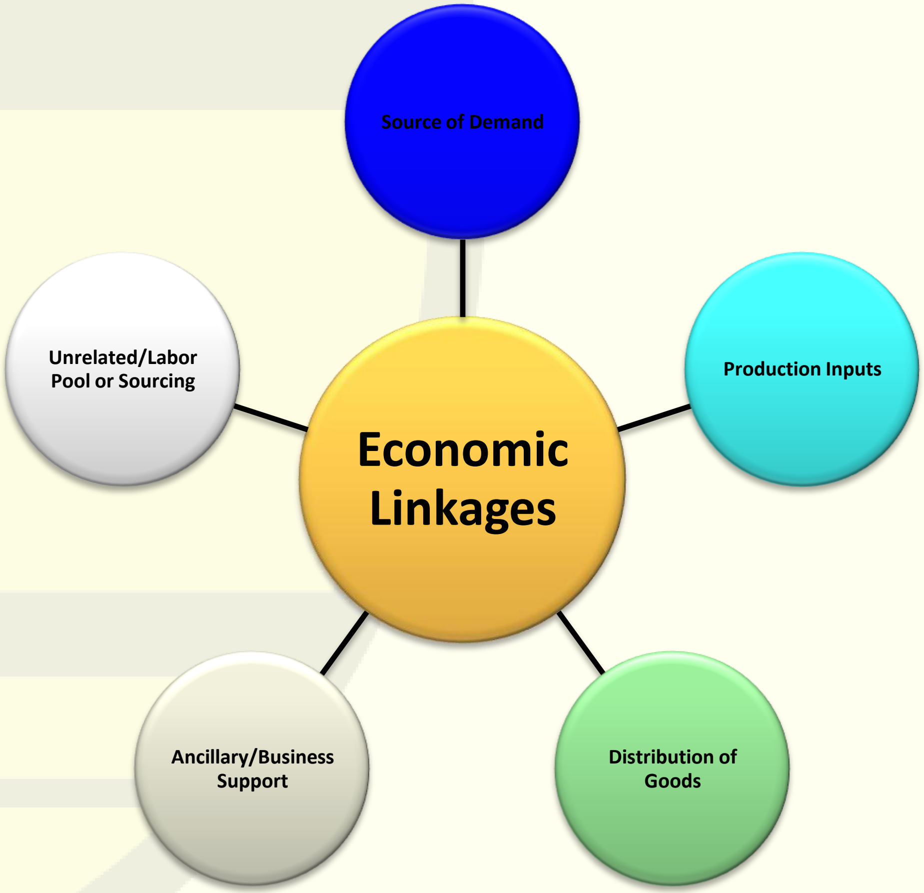


Shift-Share:

A tale of two economies

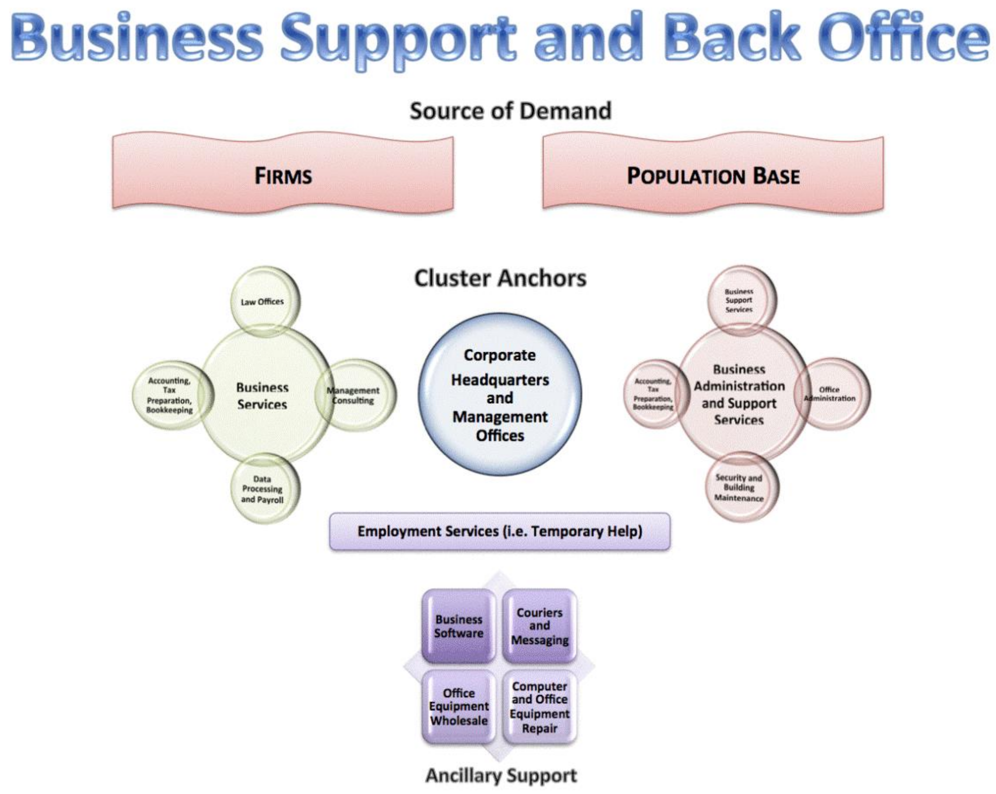
Target Industry Analysis

Economic Linkages



TARGET INDUSTRY ANALYSIS

Economic Linkages



Target Industry Analysis

Economic Linkages

Computer and Electronic Devices

Representative Industries

Primary Industries

33411 Computer and Peripheral Equipment Manufacturing
3344 Semiconductor and Other Electronic Component Manufacturing
3345 Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
42343 Computer & Computer Peripheral Equipment and Software Merchant Wholesalers
42361 Electrical Apparatus & Equip., Wiring Supplies, & Related Equip. Wholesalers
42369 Other Electronic Parts and Equipment Merchant Wholesalers
54169 Other Scientific and Technical Consulting Services

Secondary Industries

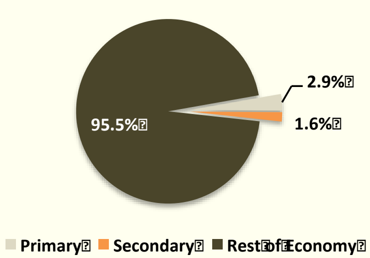
23821 Electrical Contractors and Other Wiring Installation Contractors
332999 All Other Miscellaneous Fabricated Metal Product Manufacturing
335314 Relay and Industrial Control Manufacturing
335921 Fiber Optic Cable Manufacturing
5112 Software Publishers
54151 Computer Systems Design and Related Services

Total Jobs Associated with Cluster: 5,020 jobs

Cluster Overview

The Portland Metropolitan Region maintains a distinct competitive advantage in the semiconductor, computer, and microelectronics filed. Born out of early establishments such as Tektronix, the cluster has expanded to include divisions of multiple international firms. The workforce and value-chain advantages are broad-based, covering everything from construction to logistics and distribution. In Clackamas County, the industry is grounded by a select few anchor firms, developing products and components for both value-chain and end consumer products across the medical device, computer, and aerospace industries, among others.

Share of Economy

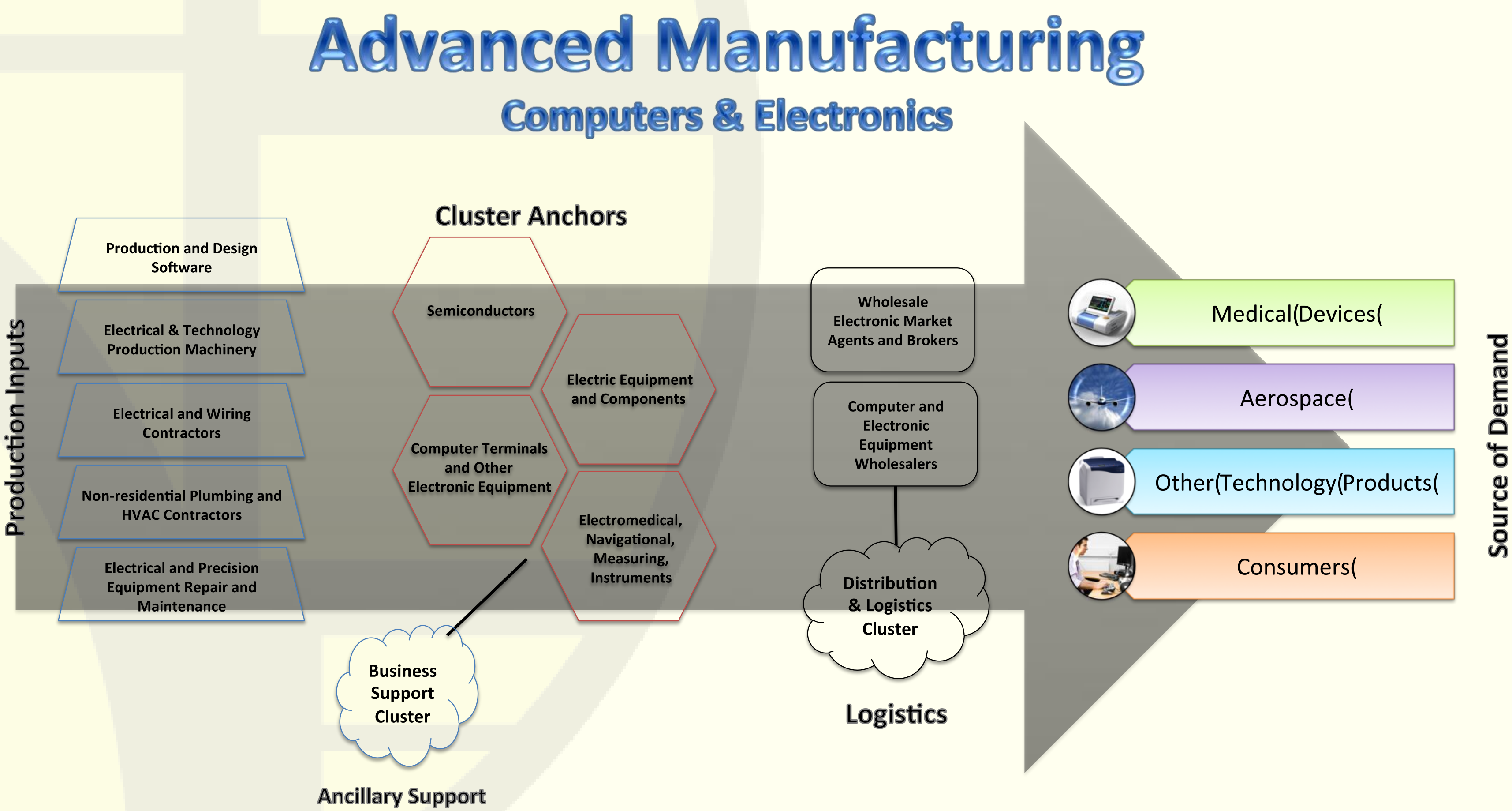


Representative Firms

- Cisco
- Xerox
- Micro Systems
- Tyco
- PacificS cientific-OECO
- Astoria Pacific
- Apple
- Indigo Systems

Target Industry Analysis

Economic Linkages



EMPLOYMENT FORECASTS

Baseline Forecasts:

- Maintains consistency with regional efforts
- Relies on sector level growth rates derived from third party macroeconomic forecasts.

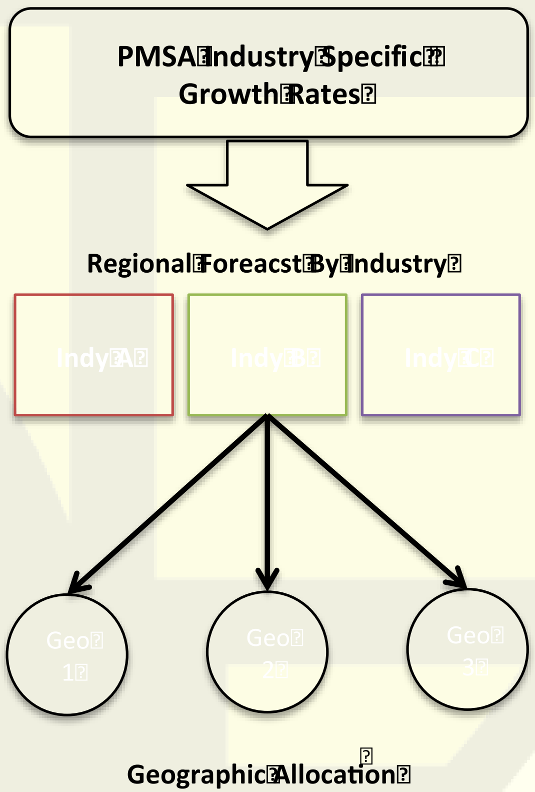
Alternative Forecasts:

- Economic opportunities driven
- Reflects local industry trends
- Considers industry linkage impacts on related industries
- Includes impacts of large-lot recruitments

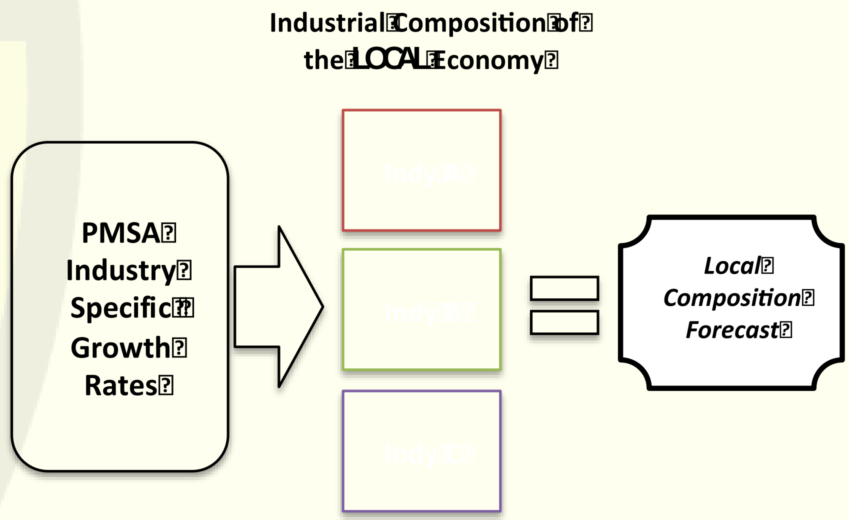
Employment Forecasts

Baseline Process

Regional Top Down Growth Allocation

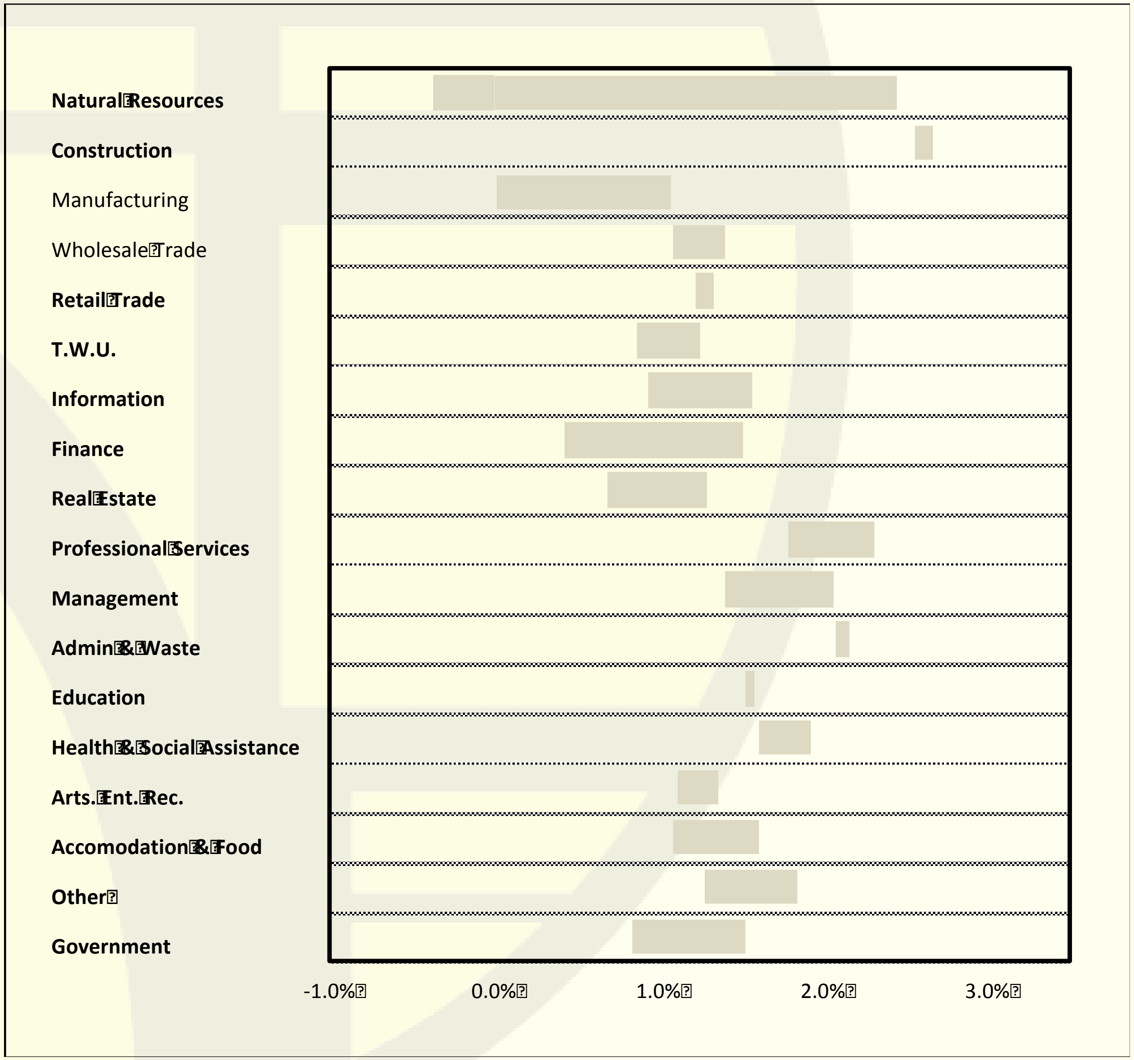


Local Geography Specific Forecast



EMPLOYMENT FORECASTS

Baseline Growth Rates by Industry



URG PMSA Rates

Clackamas County OLMIS Rates

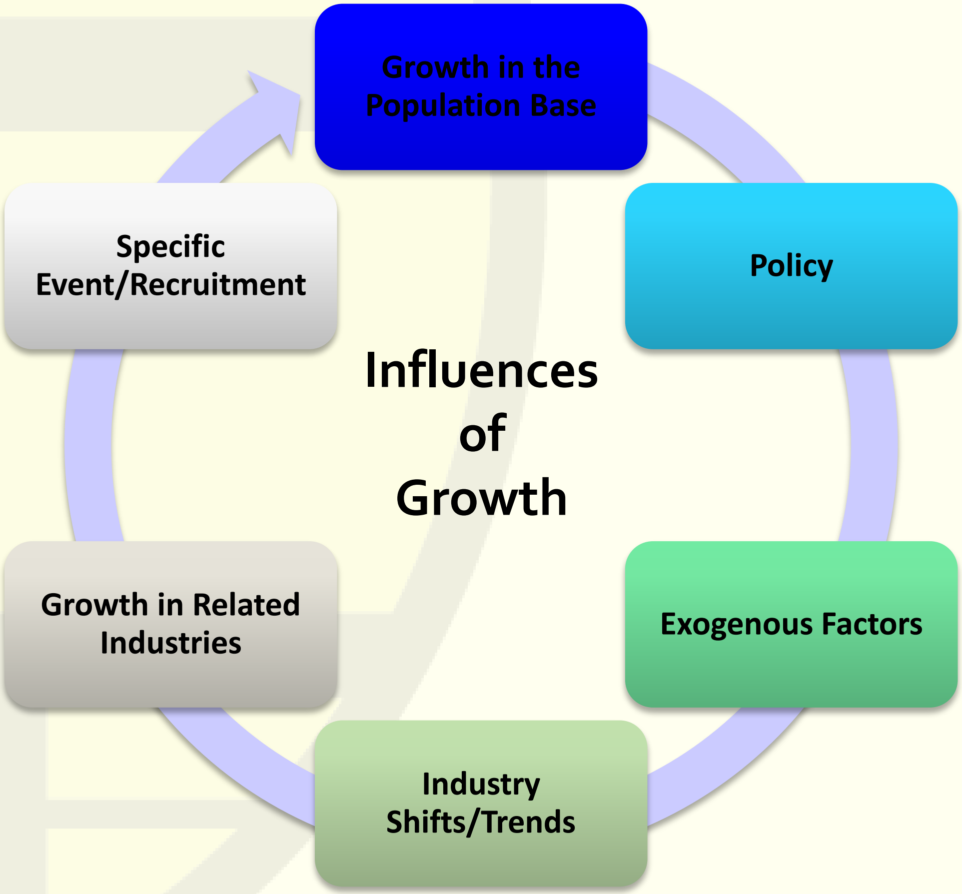
EMPLOYMENT FORECASTS

Baseline Forecasts

Industry	BASE YEAR 2014	SCENARIO I 2035	SCENARIO I #	SCENARIO I AAGR	SCENARIO II 2035	SCENARIO II #	SCENARIO II AAGR
Natural Resources	465	430	-35	-0.4%	716	251	2.1%
Construction	6,667	11,336	4,668	2.6%	11,578	4,911	2.7%
Manufacturing	13,902	13,942	40	0.0%	17,406	3,504	1.1%
Wholesale Trade	8,650	11,587	2,937	1.4%	10,864	2,213	1.1%
Retail Trade	15,065	19,447	4,382	1.2%	19,885	4,821	1.3%
T.W.U.	4,122	4,946	824	0.9%	5,353	1,231	1.3%
Information	1,333	1,850	516	1.6%	1,620	286	0.9%
Finance	4,665	5,105	440	0.4%	6,393	1,728	1.5%
Real Estate	1,824	2,109	285	0.7%	2,390	566	1.3%
Professional Services	7,404	10,758	3,354	1.8%	11,962	4,558	2.3%
Management	1,418	2,178	760	2.1%	1,903	485	1.4%
Admin & Waste	6,573	10,310	3,737	2.2%	10,116	3,543	2.1%
Education	7,672	10,551	2,879	1.5%	10,663	2,991	1.6%
Health & Social Assistance	16,588	24,782	8,193	1.9%	23,195	6,607	1.6%
Arts. Ent. Rec.	1,514	1,914	399	1.1%	2,015	501	1.4%
Accomodation & Food	9,457	11,855	2,398	1.1%	13,240	3,783	1.6%
Other	4,238	6,211	1,974	1.8%	5,528	1,290	1.3%
Government	5,181	7,125	2,123	1.5%	6,185	1,004	0.8%
TOTAL:	**116,738**	**156,434**	**39,874**	**1.4%**	**161,013**	**44,274**	**1.5%**

Employment Forecasts

Alternative Forecasts



EMPLOYMENT FORECASTS

Figure 2: Influence of Economic Growth

	Population Base	Policy	Global/Exogenous Factors	Industry Shifts/Trends	Regional Economic Growth	Specific Event or Recruitment
Education	Growth correlation to population base	Public investment in expanded public education facilities			Potential for increased demand for technical training facilities in key production industries	Potential for increased demand for technical training facilities in key production industries
Retail, Food Services, and Personal Care	Growth correlation to population base			Increasing number of office and other uses (banking, daycare, etc.) locating in retail space	Some localized growth could occur above and beyond trend commensurate with daytime employment concentrations	
Leisure, Hospitality, and Recreation (nonfood)	Growth correlation to population base				Growth in hotel accomodations will be a function of economic and tourism growth	
Finance	Growth correlation to population base		Financial market stability impact on access to capital		Growth in finance will in part be a function of economic growth locally	
Agriculture & Food Processing	Growth correlation to population base	Impact on workforce training, incentive programs for industrial recruitment and retention	Foreign and domestic demand growth	Potential for a shift in production away from resource constrained regions. Expansion west for access to export markets.	Regional growth in core activities will influnece demand in ancillary functions (i.e. equipment, distribution/logistics)	Regionally significant recruitment target industry
Bio-Tech and Health Care	Growth correlation to population base	Impact on workforce training, incentive programs for industrial recruitment and retention	Expanding global and domestic investment seeking west coast locations	Shift in research funding to private donors, expanded integration of microelctronics, advances in processes that leverage local strengths	Regional presence in bio-technology and research is growing (i.e. OHSU, OSU)	Regionally significant recruitment target industry
Business Support & Back Office	Growth correlation to population base			Increasing utilization of Information Technology and Software. Large firms internalizing these functions	Growth in business support services will in part be a function of economic growth locally	
Computers and Electronics	Indirect impact relating to market size for end user products	Impact on workforce training, incentive programs for industrial recruitment and retention	Increasing global demand for goods, intellectual property rights, production processes requiring more trained workforce	Microelectronics expansion into other industries, shifts in production processes	Value-chain growth coincident with anchor industry expansion	Regionally significant recruitment target industry
Construction & Real Estate	Growth correlation to population base	Local land policy impacting the character, form, and extent of development and redevelopment		Changes in character of development may impact the composition of the cluster, material sourcing. Brokerage threatened by technology and software	Growth in Construction will in part be a function of economic growth locally	
General Industrial	Indirect impact relating to market size for end user products	Impact on workforce training			Growth in Misc. industrial activites will in part be a function of economic growth locally	
General Professional Services	Growth correlation to population base	Impact on workforce training		Industries exhibiting a preference for urban locations	Growth in Misc. industrial activites will in part be a function of economic growth locally and regionally. Many activites are supportive of regional concnetrations in activewear and retail commericce	
Government and Public Admin.	Growth correlation to population base	Changes in the size of Government in relation to the population base				
Logistics, Distribution & Wholesale	Indirect impact relating to market size for end user products	Impact on workforce training		Conversion of shipping methods to natural gas, conversion to full-service facilities, E-commerace fullfillment growth	Growth will be in part a function of regional business demand	
Metals & Machinery	Indirect impact relating to market size for end user products	Impact on workforce training, incentive programs for industrial recruitment and retention	Foreign and domestic demand growth, expansions to west coast markets, shifting of investment from Asian markets.	Cheap natural gas increasing competitiveness, on-shoring, advances in technological processes	Sector provides ancillary inputs to a range of regionally significant industries (aerospace, trans. Equip. ect.)	Regionally significant recruitment target industry relating to specialized machinery
Software Development & Computer Programming	Indirect impact relating to market size for end user products	Impact on workforce training		Changes in competitiveness with access to fiber, growing imprtance on productivity gains, growing automated processes, big data	Growth will be in part a function of regional business demand	
Utilities and Services	Growth correlation to population base	Incentive programs for clean-tech and renewable energy products and services	Commodity price impacts on rates		Growth will be in part a function of regional business demand	Expansion of service capacity to serve industrial sites

Primary driver of demand

Ancillary driver of demand

Potential Impact on Demand

No Impact on Demand

EMPLOYMENT FORECASTS

Cluster

Construction

Food Processing

Computers

Wholesale Trade

Employment Forecasts

Large-Lot Element

Clackamas Industrial Site-0 (CIAO):

The site is 62 gross acres with roughly 39 acres considered to be developable after accounting for natural resource mitigation and slope. The analysis found this site to be among the least constrained in the study. CIAO benefits from a location in the Clackamas Industrial Area, which includes a critical mass of metals, machinery, food processing, and distribution users. The site has had recruitment interest in recent years. The unique quality of the site is that the County itself owns the site, and is motivated to see an economically productive user on site. This condition alone makes the likelihood of an industrial siting on CIAO highly likely over the 20-year period. The conceptual development plan for CIAO called for and advanced metals or machinery manufacturer capable of delivering 550 jobs on site at full build-out. Ancillary impacts elsewhere in the regional economy totaled 993 jobs. For the purpose of this analysis, given the location of the site and proposed user, we assume that Clackamas County would capture one-third of ancillary impacts.

Wilsonville Industrial Development Site-1 (WIDS-1)

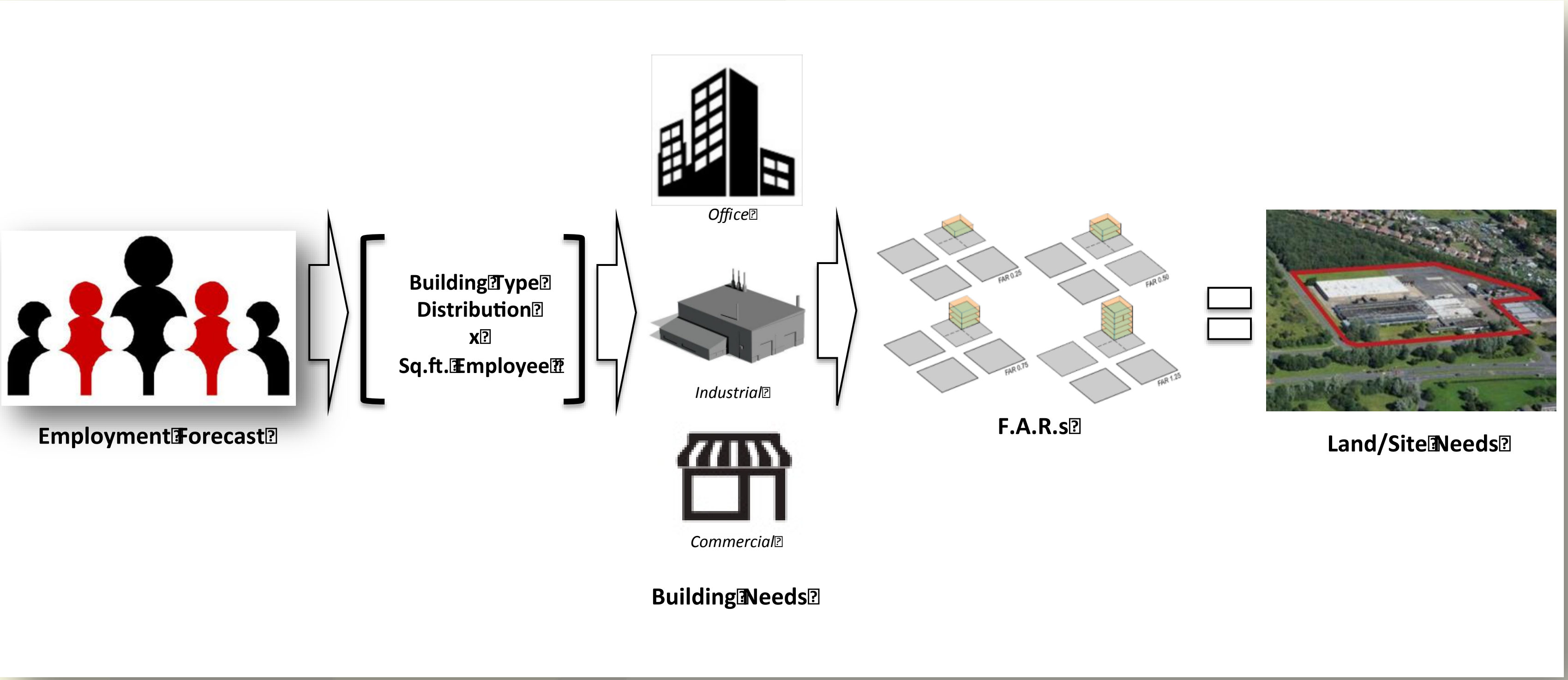
This site includes 30 net-developable acres in Wilsonville. The site is fundamentally strong with a strategic location within Wilsonville's high-tech cluster and offering excellent visibility and access. Development constraints are also very limited, making the site increasingly marketable. The concept planning and economic analysis identified this site as being ideal for a single high-tech manufacturer of computers, electronics, or components. The plan assumed up to 720 jobs on-site at full capacity. Indirect and induced job creation was estimated at over 2,800 jobs. Ancillary impacts are much greater for high-tech users because of higher wages paid to households and broad and localized value-chain. For the purpose of this analysis, given the location of the site near other jurisdictions and the location of value chain sourcing, we assume that Clackamas County would capture only one-fifth of regional ancillary impacts.

EMPLOYMENT FORECASTS

Alternative Forecasts

Industry	BASE YEAR 2014	SCENARIO III 2035	SCENARIO III #	SCENARIO III AAGR	SCENARIO IV 2035	SCENARIO IV #	SCENARIO IV AAGR
Natural Resources	465	534	69	0.7%	548	83	0.8%
Construction	6,667	10,936	4,269	2.4%	11,508	4,841	2.6%
Manufacturing	13,902	19,017	5,114	1.5%	20,984	7,082	2.0%
Wholesale Trade	8,650	11,979	3,329	1.6%	12,740	4,090	1.9%
Retail Trade	15,065	19,134	4,069	1.1%	19,652	4,587	1.3%
T.W.U.	4,122	5,124	1,003	1.0%	5,377	1,256	1.3%
Information	1,333	1,903	570	1.7%	2,070	737	2.1%
Finance	4,665	5,216	551	0.5%	5,423	758	0.7%
Real Estate	1,824	2,028	204	0.5%	2,131	307	0.7%
Professional Services	7,404	11,751	4,347	2.2%	12,958	5,554	2.7%
Management	1,418	2,132	714	2.0%	2,353	935	2.4%
Admin & Waste	6,573	10,099	3,526	2.1%	11,075	4,502	2.5%
Education	7,672	10,384	2,713	1.5%	10,722	3,051	1.6%
Health & Social Assistance	16,588	24,317	7,729	1.8%	25,841	9,252	2.1%
Arts. Ent. Rec.	1,514	1,878	364	1.0%	1,953	438	1.2%
Accomodation & Food	9,457	11,621	2,164	1.0%	12,030	2,573	1.2%
Other	4,238	6,108	1,870	1.8%	6,362	2,124	2.0%
Government	5,181	6,597	1,416	1.2%	6,782	1,601	1.3%
TOTAL:	**116,738**	**160,759**	**44,021**	**1.5%**	**170,509**	**53,770**	**1.8%**

CONVERSION TO LAND DEMAND



Land Demand Forecast

Baseline Scenarios

SCENARIO								
	Base Year	Est.	NET-NEW EMPLOYMENT IN BUILDINGS					
Industry	2014	2035	Office	Inst.	Flex/BP	Gen. Ind.	Warehouse	Retail
Construction	6,667	11,336	654	0	840	1,867	840	467
Manufacturing	13,902	13,942	3	0	10	24	3	0
Wholesale Trade	8,650	11,587	235	0	646	587	1,175	294
Retail Trade	15,065	19,447	219	44	263	0	526	3,330
T.W.U.	4,122	4,946	124	0	99	107	453	41
Information	1,333	1,850	129	0	129	206	0	52
Finance	4,665	5,105	317	4	22	4	4	88
Professional Services	7,404	10,758	2,415	34	168	34	34	671
Management	1,418	2,178	601	38	61	0	0	61
Admin & Waste	6,573	10,310	2,691	37	187	37	37	747
Education	7,672	10,551	864	1,526	144	29	29	288
Health & Social Assistance	16,588	24,782	2,458	4,342	164	0	0	1,229
Arts. Ent. Rec.	1,514	1,914	140	0	40	0	0	220
Other	4,238	6,211	1,421	20	99	20	20	395
Government	5,181	7,125	836	680	97	19	19	292
TOTAL:	**104,993**	**142,040**	**13,105**	**6,726**	**2,968**	**2,935**	**3,140**	**8,174**
		Average SF/Emp:	*328*	*555*	*826*	*690*	*1,580*	*478*
		Estimated Square Feet of Space*:	**4,720,917**	**4,105,920**	**2,695,697**	**2,227,973**	**5,457,999**	**4,293,134**
		Average FAR:	*0.35*	*0.49*	*0.29*	*0.29*	*0.29*	*0.31*
		TOTAL ACRES DEMANDED	**309**	**193**	**214**	**176**	**433**	**322**
		Commercial:	**825**					
		Industrial:	**824**					
**Includes 10% market clearing vacancy*		**TOTAL:**	**1,648**					

EMPLOYMENT FORECASTS

Baseline Scenarios

SCENARIO I									
	Base Year	Est.	NET-NEW EMPLOYMENT IN BUILDINGS						
Industry	**2014**	**2035**	**Office**	**Inst.**	**Flex/BP**	**Gen. Ind.**	**Warehouse**	**Retail**
Construction	6,667	11,578	687	0	884	1,964	884	491
Manufacturing	13,902	17,406	280	0	841	2,103	280	0
Wholesale Trade	8,650	10,864	177	0	487	443	885	221
Retail Trade	15,065	19,885	241	48	289	0	579	3,664
T.W.U.	4,122	5,353	185	0	148	160	677	62
Information	1,333	1,620	72	0	72	115	0	29
Finance	4,665	6,393	1,244	17	86	17	17	346
Professional Services	7,404	11,962	3,282	46	228	46	46	912
Management	1,418	1,903	383	24	39	0	0	39
Admin & Waste	6,573	10,116	2,551	35	177	35	35	709
Education	7,672	10,663	897	1,585	150	30	30	299
Health & Social Assistance	16,588	23,195	1,982	3,502	132	0	0	991
Arts. Ent. Rec.	1,514	2,015	175	0	50	0	0	275
Other	4,238	5,528	929	13	65	13	13	258
Government	5,181	6,185	432	352	50	10	10	151
TOTAL:	**104,993**	**144,667**	**13,518**	**5,622**	**3,697**	**4,935**	**3,456**	**8,445**
		Average SF/Emp:	*328*	*555*	*826*	*690*	*1,580*	*478*
		Estimated Square Feet of Space*:	**4,869,781**	**3,432,238**	**3,358,307**	**3,745,929**	**6,007,208**	**4,435,904**
		Average FAR:	*0.35*	*0.49*	*0.29*	*0.29*	*0.29*	*0.31*
		TOTAL ACRES DEMANDED	**319**	**162**	**267**	**296**	**477**	**333**
		Commercial:	**813**					
		Industrial:	**1,040**					
**Includes 10% market clearing vacancy*		**TOTAL:**	**1,853**					

Employment Forecasts

- Food Manufacturing/Processing
- Fabricated Metals Manufacturing
- Specialized Machinery
- Computers, Electronics, & Electronic Components
- General Industrial/Manufacturing
- Wholesaling
- Distribution Center
- Traditional Office
- Creative Office
- Medical Office
- Research & Development/Flex

EMPLOYMENT FORECASTS

Alternative Scenarios

SCENARIO III

Building Typology	'14-'35 Growth	EMP/Sq. ft. Low	EMP/Sq. ft. High	Est. Square Footage Low	Est. Square Footage High	Est. FAR Low	Est. FAR Medium	Est. FAR High	Mean Acres Demanded
Computer Manufacturing	2,069	550	605	1,251,792	1,376,972	0.28	0.30	0.33	99
Wholesale	1,898	900	990	1,878,608	2,066,468	0.38	0.40	0.42	111
Traditional Office	7,010	425	468	3,277,026	3,604,729	0.28	0.28	0.30	269
Metals Manufacturing	1,576	700	770	1,213,558	1,334,914	0.33	0.37	0.39	80
Machinery Manufacturing	169	700	770	130,396	143,436	0.32	0.34	0.36	9
Medical Office	3,764	550	605	2,277,221	2,504,944	0.24	0.25	0.25	213
Creative Office	1,196	350	385	460,513	506,564	0.26	0.29	0.29	38
Distribution	1,996	1,850	2,035	4,062,056	4,468,262	0.26	0.27	0.29	352
Flex/R&D	5,228	825	908	4,744,108	5,218,519	0.28	0.28	0.30	389
Food Manufacturing	306	900	990	302,677	332,944	0.25	0.30	0.35	25
General Industrial	4,827	700	770	3,716,642	4,088,306	0.25	0.28	0.32	322
General Manufacturing	306	700	770	235,969	259,566	0.30	0.32	0.34	17
Institutional	5,469	550	605	3,308,978	3,639,876	0.40	0.44	0.50	181
Retail	1,904	475	523	994,644	1,094,109	0.25	0.30	0.33	83
TOTAL:	**37,718**			**27,854,190**	**30,639,609**			**TOTAL ACRES:**	**2,188**
								Commercial:	**816**
								Industrial:	**1,373**

SCENARIO IV

Building Typology	'14-'35 Growth	EMP/Sq. ft. Low	EMP/Sq. ft. High	Est. Square Footage Low	Est. Square Footage High	Est. FAR Low	Est. FAR Medium	Est. FAR High	Mean Acres Demanded
Computer Manufacturing	2,865	550	605	1,733,275	1,906,603	0.28	0.30	0.33	137
Wholesale	2,332	900	990	2,308,346	2,539,180	0.38	0.40	0.42	136
Traditional Office	8,769	425	468	4,099,635	4,509,598	0.28	0.28	0.30	336
Metals Manufacturing	2,182	700	770	1,680,335	1,848,368	0.33	0.37	0.39	110
Machinery Manufacturing	234	700	770	180,551	198,606	0.32	0.34	0.36	13
Medical Office	4,506	550	605	2,726,003	2,998,604	0.24	0.25	0.25	255
Creative Office	1,536	350	385	591,245	650,369	0.26	0.29	0.29	49
Distribution	2,508	1,850	2,035	5,104,403	5,614,843	0.26	0.27	0.29	442
Flex/R&D	6,481	825	908	5,881,827	6,470,009	0.28	0.28	0.30	482
Food Manufacturing	423	900	990	419,097	461,006	0.25	0.30	0.35	35
General Industrial	5,823	700	770	4,483,958	4,932,354	0.25	0.28	0.32	388
General Manufacturing	424	700	770	326,731	359,404	0.30	0.32	0.34	24
Institutional	6,427	550	605	3,888,428	4,277,271	0.40	0.44	0.50	213
Retail	2,435	475	523	1,272,505	1,399,755	0.25	0.30	0.33	106
TOTAL:	**46,947**			**34,696,337**	**38,165,971**			**TOTAL ACRES:**	**2,728**
								Commercial:	**1,002**
								Industrial:	**1,726**