

TARGET INDUSTRY ANALYSIS

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

FOUNDATIONAL RESEARCH

This analysis builds upon foundational research conducted by Clackamas County. Through its Economic Landscaping Project, Clackamas County has identified eleven key industries it considers integral to the local economy. The County Economic and Community Development Department tracks changes across these industries on a periodic basis. This is a specialization-based approach that simply looks at concentrations and growth outlook for specific NAICS (North American Industrial Classification System) based industries. Later in this analysis, we move beyond looking at simple industry groupings and further evaluate the relationships between related industries and firms.

For example, consider NAICS 332: Fabricated Metals Manufacturing, a critical industry to Clackamas County's economy. This is a very broad classification, and different firms within this sector serve a broad range of functions in the economy that will not move in unison. For example, it includes firms that produce direct to retail goods, components for the aerospace industry, materials used in heavy construction, tools used in high-tech manufacturing processes, among other functions. Here, we attempt to desegregate industry sectors from their NAICS groupings and alternatively map the ecosystem of which companies and industries function.

INDUSTRY CLUSTERS DEFINED

Sound regional economies are best organized around a healthy set of industry clusters—similar and related businesses and industries that are mutually supportive, regionally competitive, attract capital investment, and encourage entrepreneurship. Generally, clusters develop as an agglomeration of businesses in a geography that holds an innate competitive advantage in that industry—whether it is natural resources, human capital, political policies, or geography. For example, Oregon's oldest industries—namely forestry and agriculture, emerged from physical and environmental attributes such as its climate, trees, soils, and access to shipping and distribution networks. In turn, these industries spawned interrelated clusters that include food processing & food manufacturing, wood product manufacturing, wholesaling & distribution, machinery manufacturing, and host of other industries. In many local economies, we find also that a large firm or group of firms can often anchor a local cluster—for example Precision Cast Parts (PCC Structurals) anchoring Clackamas' metals cluster.

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

ancillary industries, while looking to identify the local characteristics that could encourage growth within this economic ecosystem.

STUDY AREA DEFINED

The objective of our overall analysis is to forecast the need for non-retail employment land demand in Clackamas County within the Metro UGB. To this end, our study area includes all firms that are both located within the jurisdictional boundaries of Clackamas County and within the Metro UGB.

DATA SOURCES

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

Quarterly Census of Employment and Wages (QCEW)

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

IMPLAN Input-Output Tables

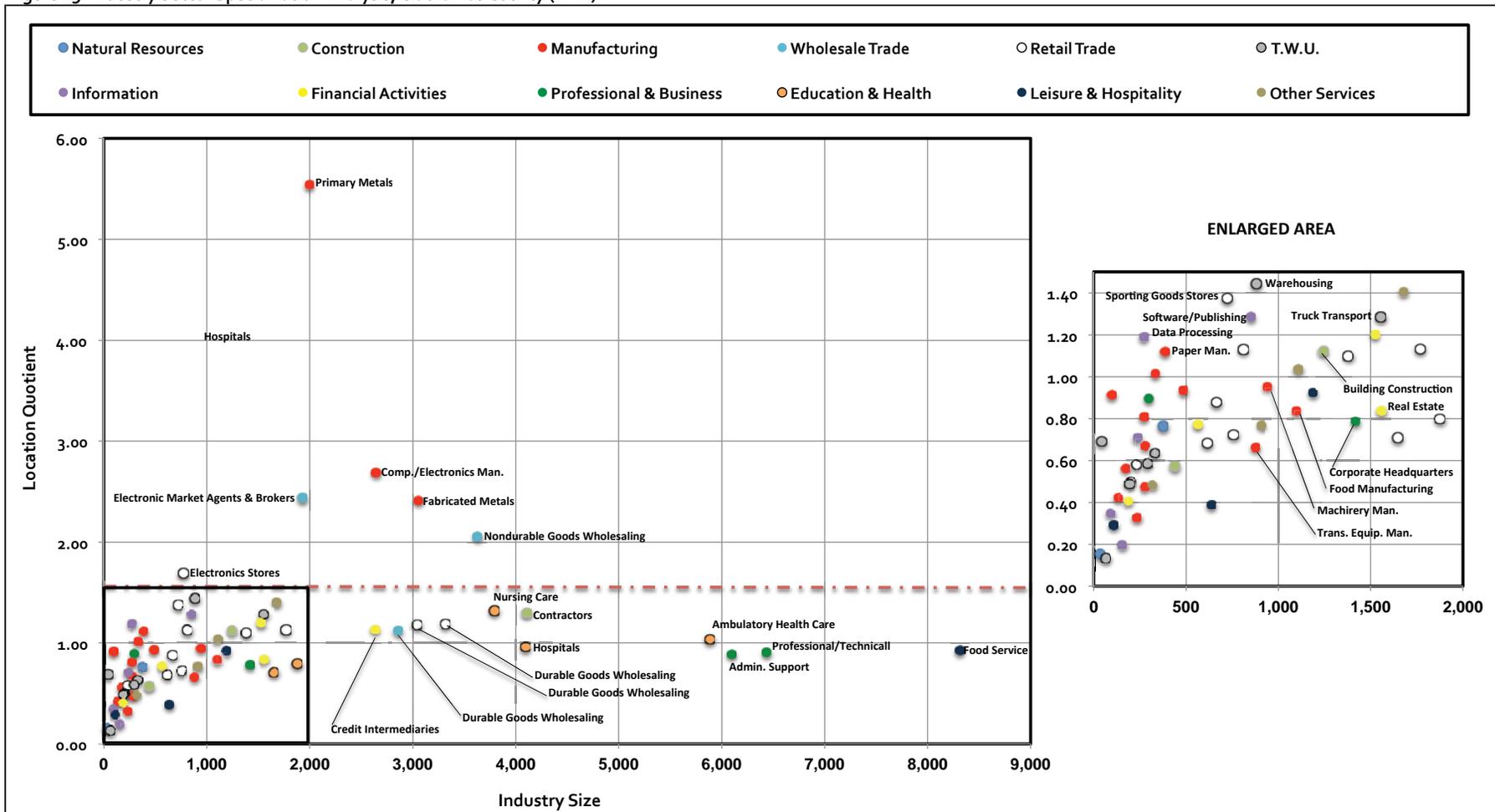
IMPLAN (IMPact for PLANning)¹⁹ datasets are input/output multiplier models that can be used to demonstrate linkages between interrelated industries. Developed by the Forest Service to assist in land and resource management planning, IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income or business revenues) upon all other industries in an economic area. A primary limitation of this data is that we rely on county level data as a proxy for local conditions.

ECONOMIC SPECIALIZATION

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

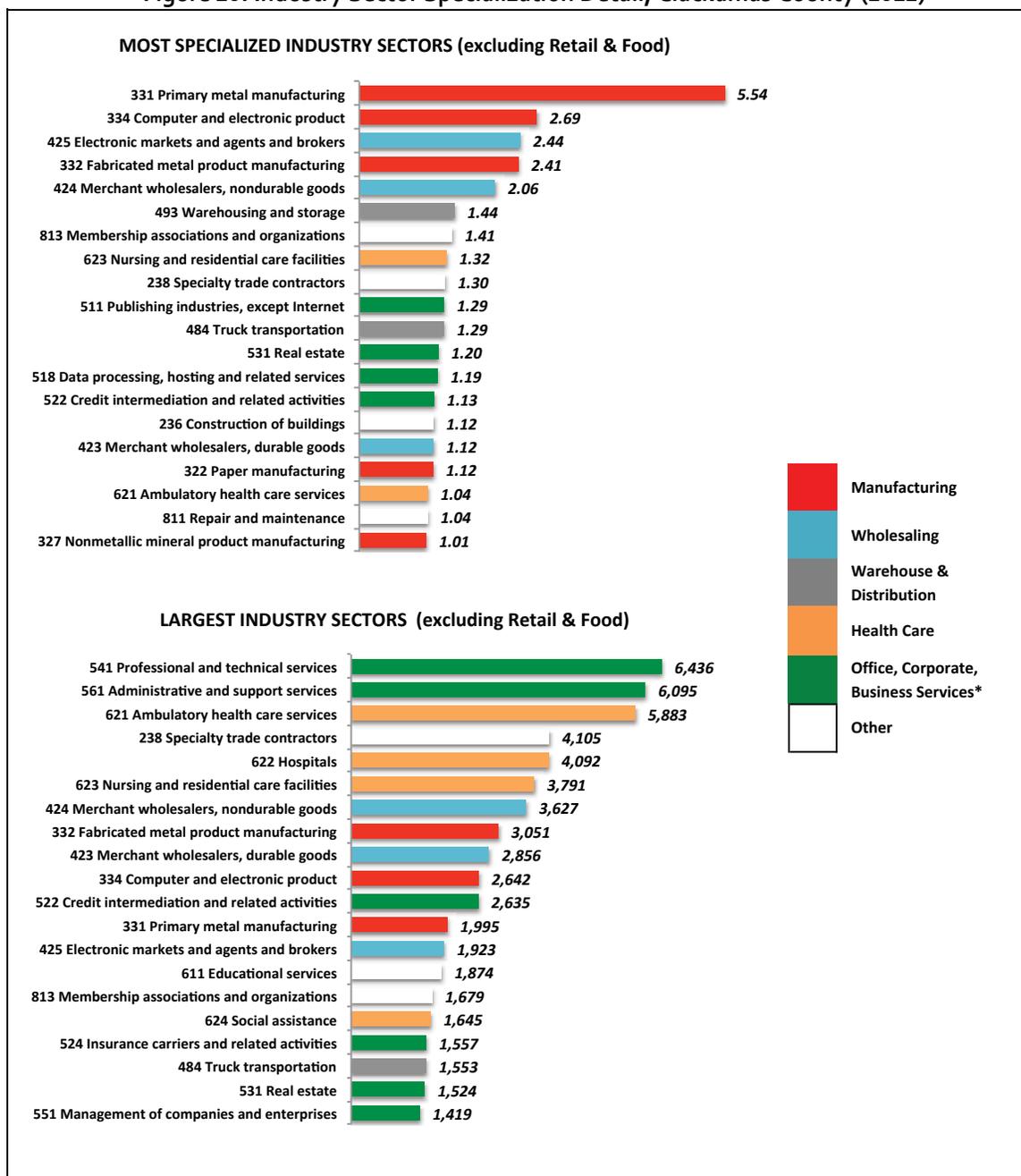
¹⁹ Minnesota IMPLAN Group (MIG), Stillwater, Minnesota

Figure 19: Industry Sector Specialization Analysis, Clackamas County (2012)



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

Figure 20: Industry Sector Specialization Detail, Clackamas County (2012)



* Information, Professional & Technical Services, Admin. Support Services, Corporate Headquarters, Finance & Banking, Real Estate.

From Figures 19 and 20 we can derive that that Clackamas economy is highly specialized in a few key sectors. Some key findings:

- The 20 most specialized industries (highest location quotient) account for roughly 43% of employment in the economy. Meanwhile, three out of every five jobs in Clackamas County are in the 20 largest industries.
- The Clackamas County economy is highly specialized in a few sectors, none more so than the manufacturing sector, which accounts for five of the most specialized, and three of the largest industries in the economy. Highly specialized manufacturing processes include primary metals, fabricate metals, minerals & paper, and computers & electronics.
- Wholesaling activities are also highly concentrated in Clackamas County, building upon the durable goods manufacturing base in computers, electronics, and metals markets. All three wholesaling subsectors are top 20 in terms of specialization and size. In combination with associated activities in the warehousing, storage, and transportation sectors, we expect to find a well-organized warehouse and distribution cluster in the region.
- Company's conducting professional, technical, and business activities comprise a considerable share of the local economy. Professional & technical and administrative support services are the two largest subsectors of the economy, accounting for one out of every eight jobs. This sector is very diverse, including corporate headquarters, advertising and marketing firms, offices of lawyers and accountants, engineering firms, computer programmers, temporary help services, and research and development activities, among others.
- When combined with Clackamas County's concentration in financial services and information, it is clear that Clackamas County has a well-defined business services cluster.
- Finally, while the local composition of health care services is roughly on par with expectations given the size of the economy and populace, firms in the health care sector account for nearly 16% of the private sector economy.

ECONOMIC DRIVERS

The identification of the unique and shifting economic drivers of a local or regional economy are critical in informing the character and nature of future employment, and by extension land demand over a planning cycle. To this end, we employ a shift share analysis of the local economy emerging out of the current expansion cycle²⁰. A shift share analysis is an analytical procedure that measures local effect of economic performance within a particular industry or occupation. The process considers local economic performance in the context of national economic trends—indicating the extent to which local growth can be attributed to unique regional competitiveness or simply growth in line with broader trends. For example, consider that widget manufacturing is growing at a 1.5% rate locally, about the same rate as the local economy. On the surface we would consider the widget manufacturing industry to be healthy and contributing soundly to local economic expansion. However, consider also that widget manufacturing is booming across the country, growing at a robust 4% annually. In this context, local

²⁰ Measured from the trough of recent recession to 2012, the most recent period available for local employment data.

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

Generally we can classify industries, groups of industries, or clusters into four groups:

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

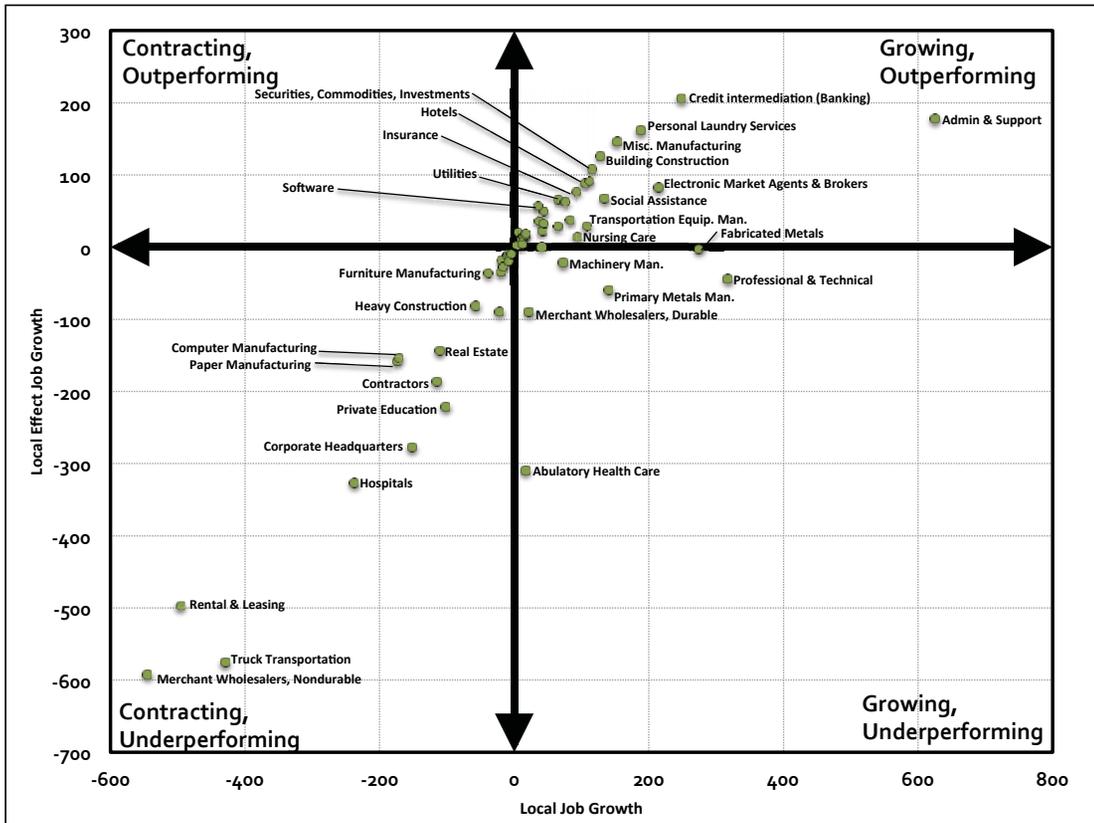
Growing, Underperforming: Industries that are growing locally but slower than the national average. These industries generally have a sound foundation but some local factor is limiting growth.

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

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

In association with our knowledge of specialized industrial composition, these metrics help policy makers craft targeted programs and policies to both facilitate the expansion of outperforming industries as well as support those exhibiting risk of deterioration. Clackamas County's economic drivers are considered in Figure 21:

Figure 21: Industry Sector Shift-Share Analysis, Clackamas County (2010-2012)



LOCAL EFFECT JOB GROWTH

Credit intermediation and related activities	206
Administrative and support services	178
Personal and laundry services	162
Miscellaneous manufacturing	146
Construction of buildings	126
Securities, commodity contracts, investments	108
Accommodation	91
Membership associations and organizations	88
Electronic markets and agents and brokers	83
Insurance carriers and related activities	76
Social assistance	67
Utilities	66
Food manufacturing	63
Publishing industries, except Internet	57
Telecommunications	50
Primary metal manufacturing	-59
Heavy and civil engineering construction	-81
Warehousing and storage	-89
Merchant wholesalers, durable goods	-90
Real estate	-144
Paper manufacturing	-153
Computer and electronic product manufacturing	-158
Specialty trade contractors	-186
Educational services	-222
Management of companies and enterprises	-278
Ambulatory health care services	-309
Hospitals	-327
Rental and leasing services	-497
Truck transportation	-575
Merchant wholesalers, nondurable goods	-592

From Figure 21 we can consider the industries that are both driving the local economic expansion as well as those industries at risk of becoming increasingly less competitive. Some key findings:

- Industries in the local economy are generally following the direction of the national economy. Around half the industries in Clackamas County are growing and outperforming the industry trends, while half are underperforming. We did not find any industries that were declining but outperforming the industry average.
- Clackamas County has a tale of two economies. The top 15 performing sectors accounted for over 2,300 new jobs since 2010. However, this growth was offset by losses of a similar number of jobs in the top 15 worst performing industries.
- On the positive side, non-real estate financial activities are playing a large part in driving economic growth. Also, while professional & technical services firms have grown at a rate below expectations, administration & support activities are among the best performing industries in the county.
- We see the local software publishing industry expanding moderately and above trend.
- It's positive to see building construction outperforming and expanding. When specialty trade contractors follow suit it will be a positive signal for the economy.
- Most manufacturing activities have performed in line with their industry trends, with a few exceptions. Clackamas County's metals and machinery cluster has exhibited positive growth that is slightly below the industry standard, but not by a considerable margin. Misc. manufacturing has exhibited strong growth. However, while unrelated to each other, both computer manufacturing and paper manufacturing are contracting, and at a rate considerably worse than their industry direction.
- Perhaps the most underperforming group of sectors are nondurable goods wholesaling, warehousing, and transportation. Even during the current expansion these industries have combined to account for nearly 1,000 lost jobs since 2010.

TARGET INDUSTRY LINKAGES AND PROFILES

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

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

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

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

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

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

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

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

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

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

Excluding service industries such as leisure, food service, retail, and personal care services, we classified all firms with 20 or more employees by their economic function. This covered over two-thirds of all employment in the study area. Industry class was used to aggregate smaller firms. For each business we assigned a “primary” and if applicable a “secondary” cluster designation. We define these categories as follows:

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

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

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

This approach is not without limitations and caveats. The most common limitation we found was businesses with diverse functions that operate across clusters that could be placed into multiple cluster designation. More so, the analysis also bears the inherent subjectivity of human classification and error. Nevertheless, this approach proved to be constructive as it reflected actual business operations and relationships while also allowing us to adjust for the inflexibility of NAICS classifications. More so, this approach has the value-added benefit in the forecasting of growth in particular industries, because we account for the impact of related economic activities on subsets of a particular industry or group of firms.

All told, we organized the economy into eight distinct target industry clusters:

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

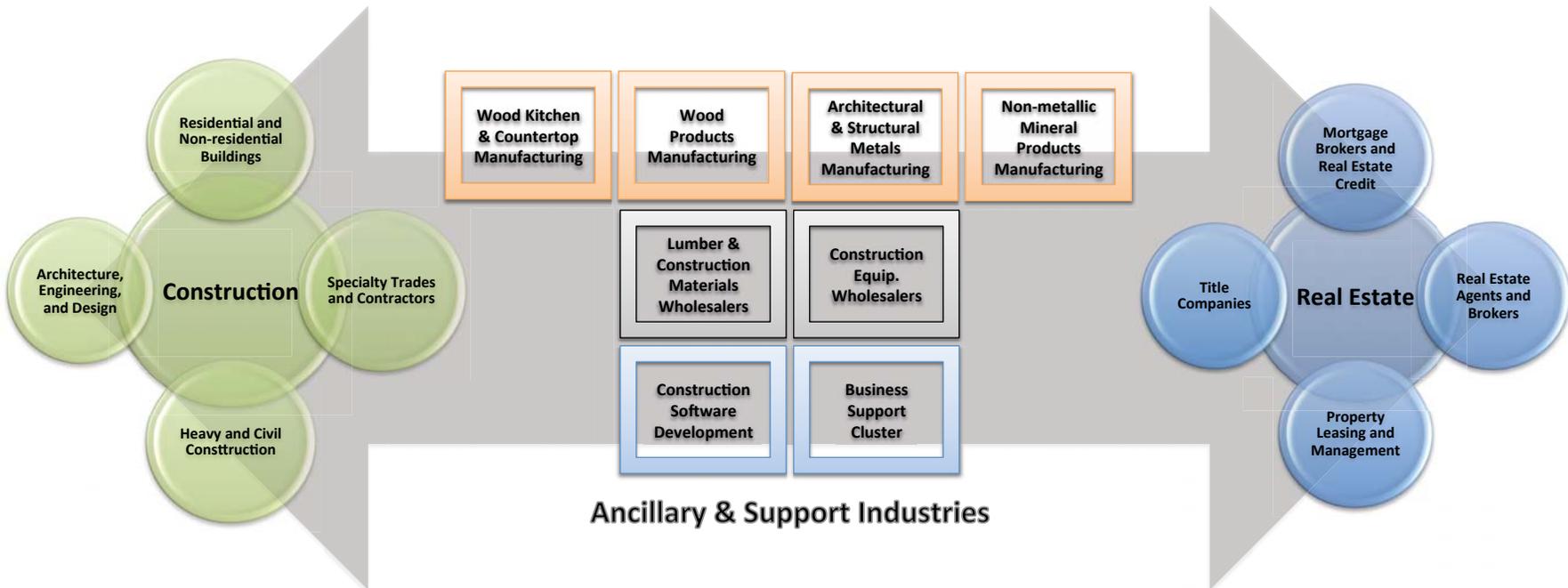
Profiles were developed for each cluster, presented here:

Construction and Real Estate

Source of Demand

FIRMS

POPULATION BASE



Construction and Real Estate

Representative Industries

Primary Industries

- 2361 Residential Building Construction
- 2362 Nonresidential Building Construction
- 237 Heavy and Civil Engineering Construction
- 238 Specialty Trade Contractors
- 4233 Lumber and Other Construction Materials Merchant Wholesalers
- 53111 Lessors of Residential Buildings and Dwellings
- 5312 Offices of Real Estate Agents and Brokers
- 53131 Real Estate Property Managers
- 54131 Architectural Services
- 54133 Engineering Services

Secondary Industries

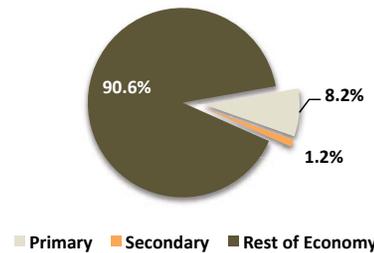
- 321214 Truss Manufacturing
- 321911 Wood Window and Door Manufacturing
- 3273 Cement and Concrete Product Manufacturing
- 327991 Cut Stone and Stone Product Manufacturing
- 3323 Architectural and Structural Metals Manufacturing
- 33711 Wood Kitchen Cabinet and Countertop Manufacturing
- 42372 Plumbing and Heating Equipment and Supplies Merchant Wholesalers

Total Jobs Associated with Cluster: 10,509 jobs

Cluster Overview

Somewhat under the radar, construction and real estate play an exceedingly large role in the Clackamas County economy. Core construction activities that include construction of buildings, heavy and civil construction, and specialty trade contractors account for nearly 6,000 jobs. But the cluster's breadth goes considerably further into the manufacturing, wholesale, professional services, and financial activities sectors. Wood products manufacturing in Clackamas County is overwhelmingly concentrated in lumber, truss, window, door, and kitchen cabinetry products. Similarly, professional services firms specializing in interior design, architecture, engineering, landscape and design are a considerable component of professional services. And finally, source materials for construction represents a sizeable share of Clackamas' metals sector. All told nearly 10% of all Clackamas County employment can be linked to the Construction and Real Estate Cluster.

Share of Economy

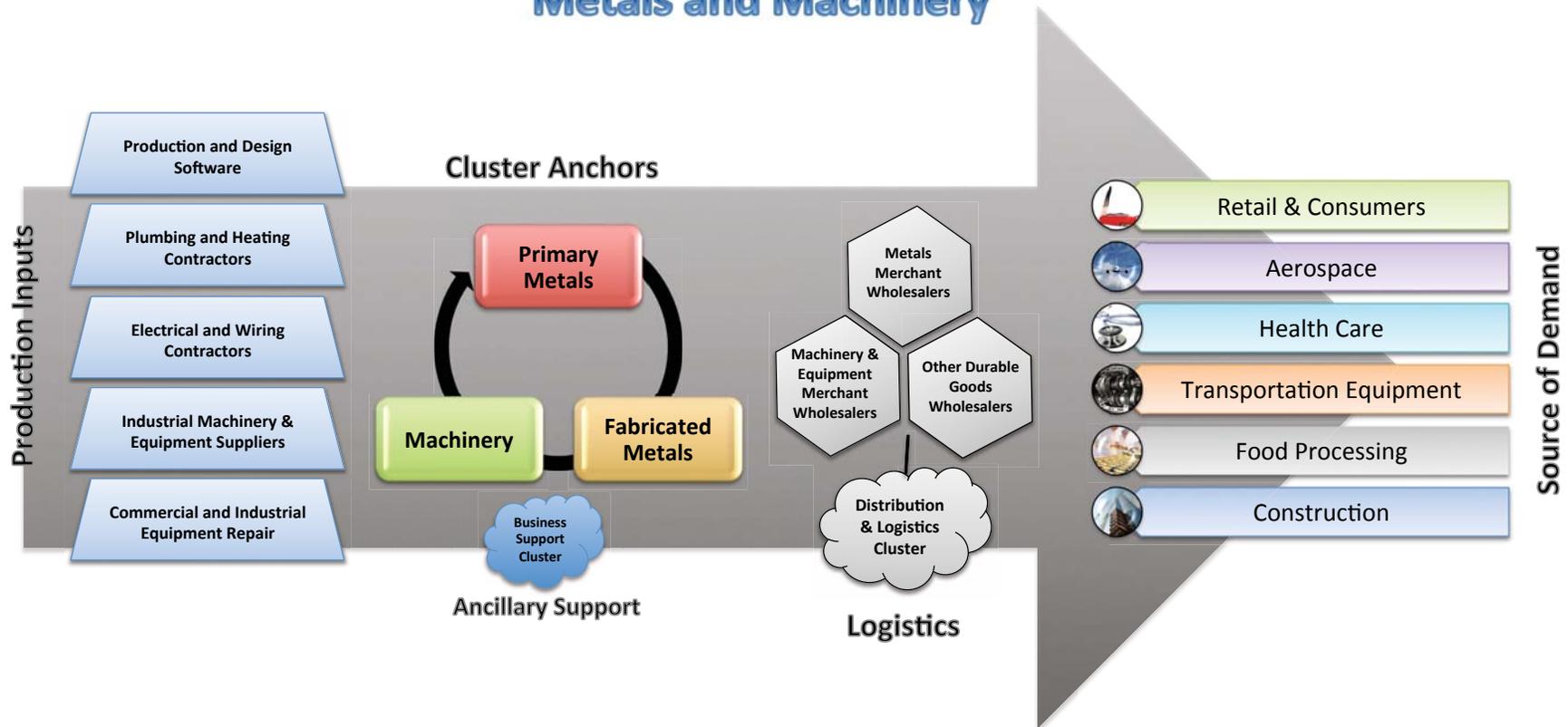


Representative Firms

- Stoner Electric
- Johnson Controls
- American Residential
- Portland Mechanical Contractors
- Jacobs Engineering
- Princeton Property Management
- Orepac Building Product

Advanced Manufacturing

Metals and Machinery



Advanced Manufacturing: Metals & Machinery

Representative Industries

Primary Industries

- 331512 *Steel Investment Foundries*
- 331523 *Nonferrous Metal Die-Casting Foundries*
- 331529 *Other Nonferrous Metal Foundries (except Die-Casting)*
- 33221 *Cutlery and Handtool Manufacturing*
- 332216 *Saw Blade and Handtool Manufacturing*
- 332312 *Fabricated Structural Metal Manufacturing*
- 332999 *All Other Miscellaneous Fabricated Metal Product Manufacturing*
- 33314 *Optical Instrument and Lens Manufacturing*
- 42383 *Industrial Machinery and Equipment Merchant Wholesalers*

Secondary Industries

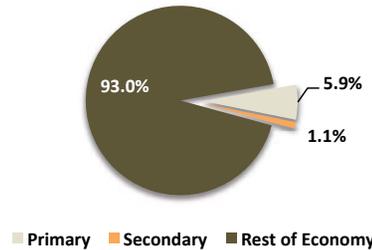
- 23822 *Plumbing, Heating, and Air-Conditioning Contractors*
- 336350 *Motor Vehicle Transmission and Power Train Parts Manufacturing*
- 33637 *Motor Vehicle Metal Stamping*
- 336413 *Other Aircraft Parts and Auxiliary Equipment Manufacturing*
- 33995 *Sign Manufacturing*

Total Jobs Associated with Cluster: 7,809 jobs

Cluster Overview

Metals and Machinery in Clackamas County is anchored around the workforce and supply-chain dynamics surrounding a few key industries. Generally, this cluster provides component and machinery for other manufacturing processes, including aerospace, semiconductors, food processing, and transportation parts and equipment. In turn, other industries including logistics and wholesale, contactors, equipment testing and calibration, and other industrial machinery maintenance and repair services have agglomerated locally.

Share of Economy

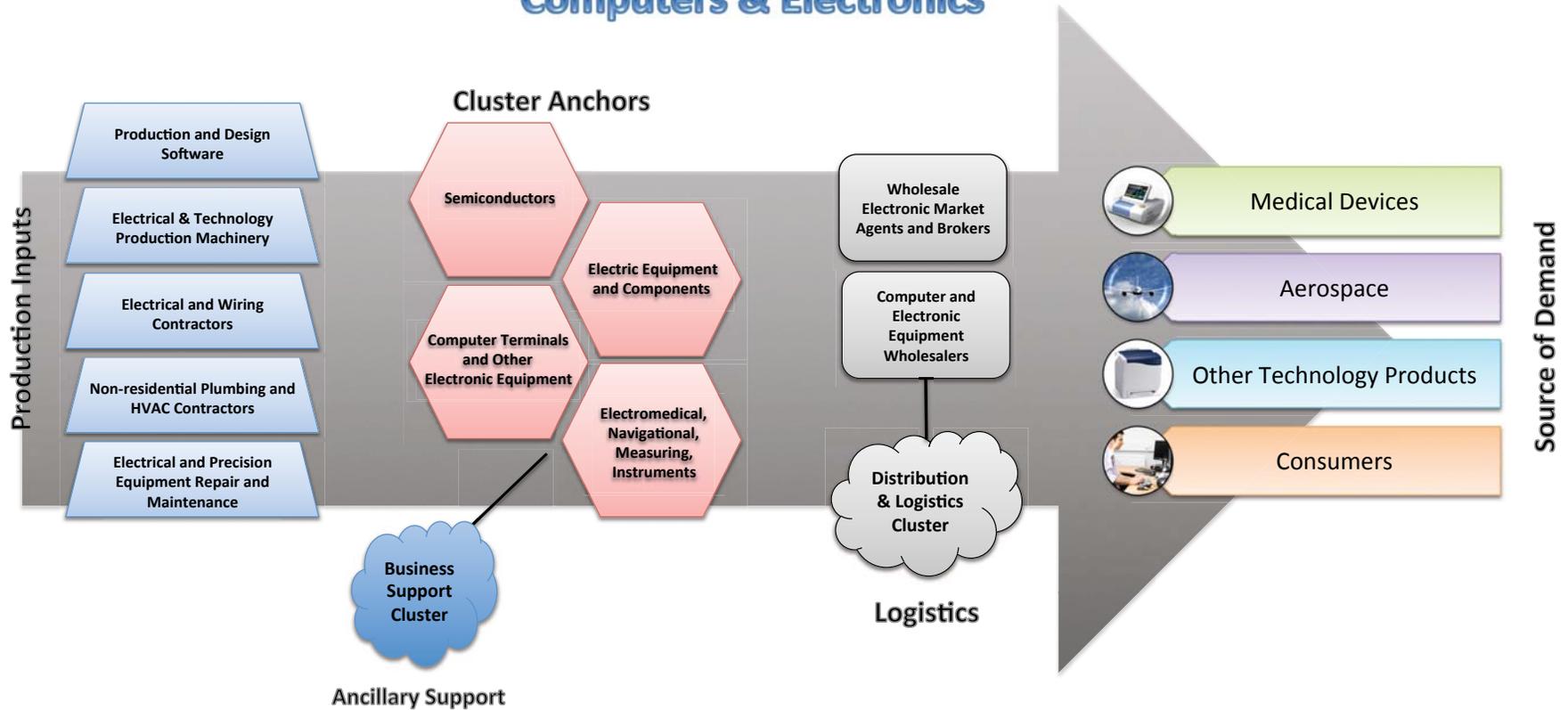


Representative Firms

- Consolidated MEtco
- Oregon Iron Works
- PCC Structural
- Oregon Cutting Systems
- Western Precision Products
- Enoch Manufacturing
- Black and Decker
- Warn Industries

Advanced Manufacturing

Computers & Electronics



Computer and Electronic Devices

Representative Industries

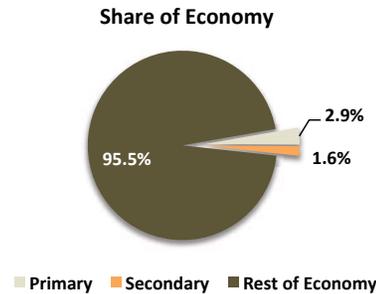
- Primary Industries**
- 33411 Computer and Peripheral Equipment Manufacturing
 - 3344 Semiconductor and Other Electronic Component Manufacturing
 - 3345 Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
 - 42343 Computer & Computer Peripheral Equipment and Software Merchant 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

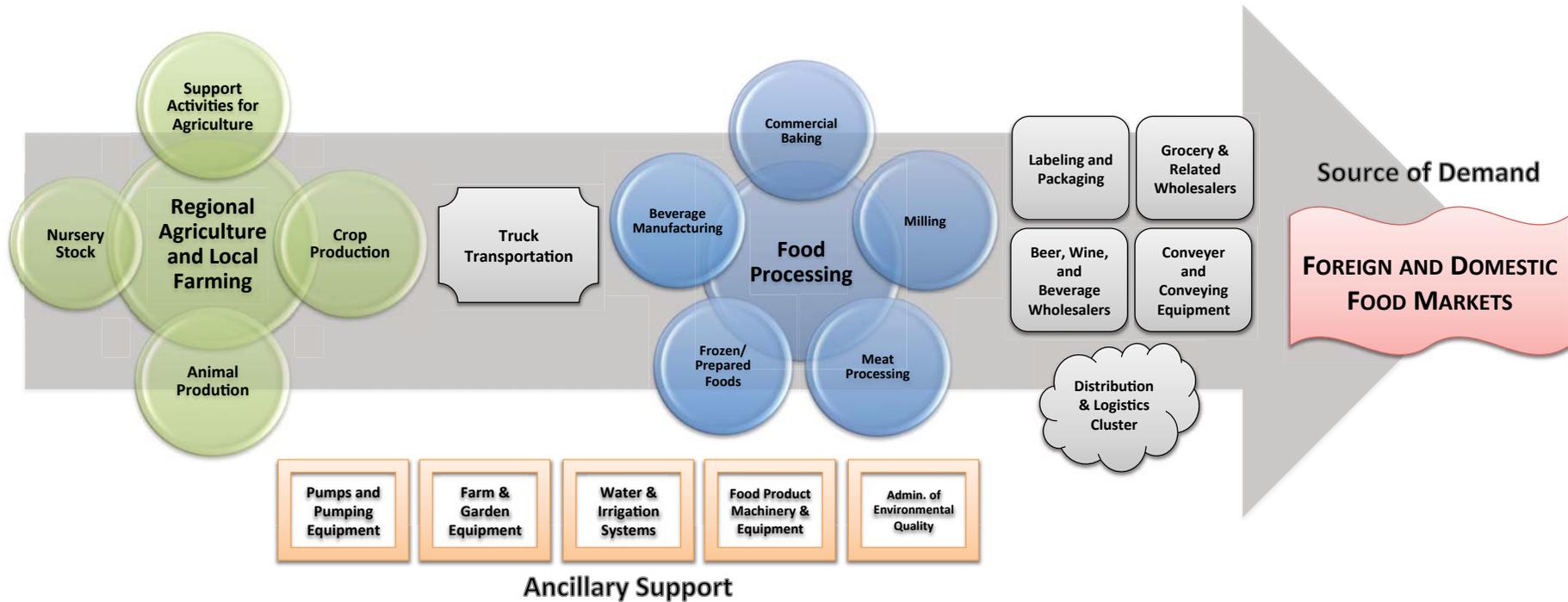
Cluster Overview

The Portland Metropolitan Region maintains a distinct competitive advantage in the semiconductor, computer, and microelectronics field. 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.



- Representative Firms**
- Cisco
 - Xerox
 - Micro Systems
 - Tyco
 - Pacific Scientific-OECO
 - Astoria Pacific
 - Apple
 - Indigo Systems

Agriculture and Food Processing



Agriculture and Food Processing

Representative Industries

Primary Industries

- 11142 Nursery and Floriculture Production
- 31121 Flour Milling and Malt Manufacturing
- 3114 Fruit and Vegetable Preserving and Specialty Food Manufacturing
- 31151 Dairy Product (except Frozen) Manufacturing
- 311812 Commercial Bakeries
- 3119 Other Food Manufacturing
- 32222 Paper Bag and Coated and Treated Paper Manufacturing
- 42441 General Line Grocery Merchant Wholesalers
- 42449 Other Grocery and Related Products Merchant Wholesalers
- 92614 Regulation of Agricultural Marketing and Commodities

Secondary Industries

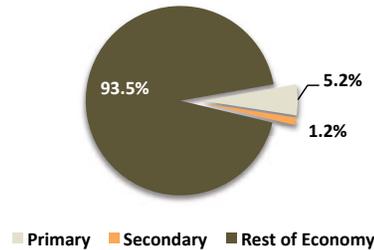
- 22131 Water Supply and Irrigation Systems
- 33391 Pump and Compressor Manufacturing
- 333922 Conveyor and Conveying Equipment Manufacturing
- 42344 Other Commercial Equipment Merchant Wholesalers
- 49311 General Warehousing and Storage
- 493120 Refrigerated Warehousing and Storage

Total Jobs Associated with Cluster: 7,229 jobs

Cluster Overview

Clackamas County's Agriculture and Food cluster is anchored in regional crop production and farming, although there is some farming activity occurring within the urban growth boundary, primarily limited to nursery stock. Food processing in Clackamas County has emerged as an industrial stronghold, anchored by several large firms, which also have regional corporate management functions locally. The cluster has less emphasis on Food Manufacturing, which only makes up 18% of the cluster's primary employment. Rather, the primary function is in the packaging, labeling, distribution, and wholesale of food products. In turn, the presence of these activities has spawned a range of ancillary functions that provide the equipment and maintenance but also for the wholesale and distribution of products to end users.

Share of Economy



Representative Firms

- Kroger
- Interstate Meat
- United Grocers
- Safeway
- Sysco
- Craftsman Label
- Pacific Seafood
- Bobs Red Mill

Health Care and Biotechnology

Source of Demand

EXOGENOUS RESEARCH & MARKETS

POPULATION BASE

Anchor

Hospitals

Logistics

Medical Device
and Equipment
Wholesalers

Distribution
& Logistics
Cluster

Heath Care

Mental
Health
Professionals

Offices of
Doctors,
Dentists, and
Specialists

Nursing Care
and Assisted
Living

Other
Outpatient
Care

HMO
Medical
Centers

Health
Insurance
Providers

Business
Support
Cluster

Medical
Labs and
Testing

Medical
Software

Ancillary Support

Research and
Development

Chemical
Manufacturing

Bio-Tech

Medical
Products

Electromedical
Devices and
Components

Health Care and Biotechnology

Representative Industries

Primary Industries

- 3254 *Pharmaceutical and Medicine Manufacturing*
- 33911 *Medical Equipment and Supplies Manufacturing*
- 42345 *Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers*
- 551114 *Corporate, Subsidiary, and Regional Managing Offices*
- 5417 *Scientific Research and Development Services*
- 621 *Ambulatory Health Care Services*
- 622 *Hospitals*
- 623 *Nursing and Residential Care Facilities*

Secondary Industries

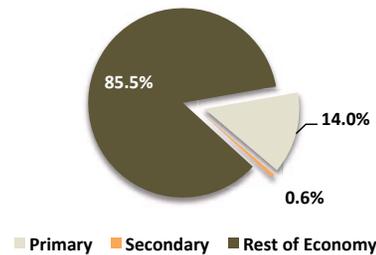
- 331529 *Other Nonferrous Metal Foundries (except Die-Casting)*
- 33441 *Semiconductor and Other Electronic Component Manufacturing*
- 334516 *Analytical Laboratory Instrument Manufacturing*
- 334510 *Electromedical and Electrotherapeutic Apparatus Manufacturing*
- 5112 *Software Publishers*
- 524114 *Direct Health and Medical Insurance Carriers*

Total Jobs Associated with Cluster: 16,210 jobs

Cluster Overview

Related primarily in workforce and research funding linkages, these sectors are anchored by regional hospitals that provide and attract a critical mass of trained workers but also serve as a source of demand for medical products and services. Health care activities in general are driven by demographic factors. Bio-technology on the other hand is more discrete. In this analysis we include the manufacture of medical devices and tools but also research and laboratory functions. The cluster also supports growing ancillary functions that include development of medical software, testing and research laboratories and other back office functions.

Share of Economy



Representative Firms

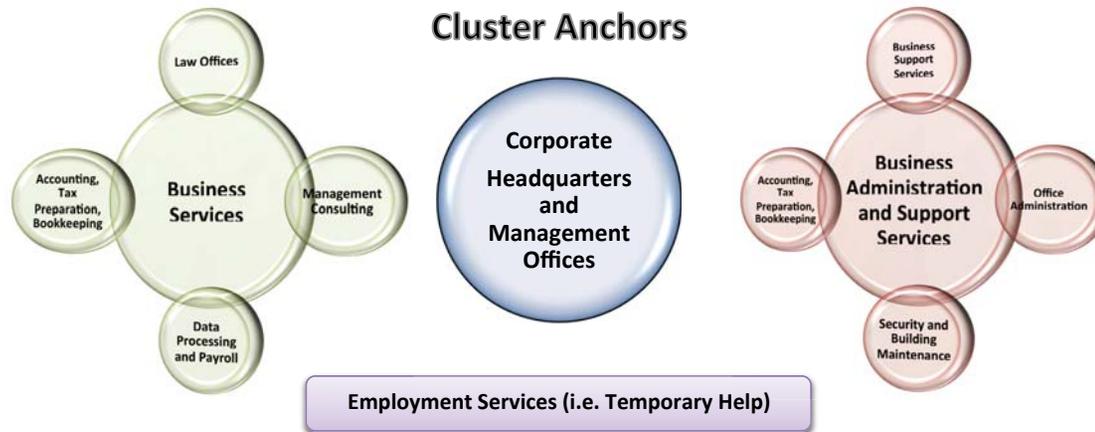
- Providence
- Legacy Meridian Park Hospital
- Sunnyside Hospital
- Health Wright Products
- Kirkman
- Rehab Specialists Inc.
- Kaiser
- Biotronik

Business Support and Back Office

Source of Demand



Cluster Anchors



Business Support and Back Office Operations

Representative Industries

Primary Industries

- 51821 *Data Processing, Hosting, and Related Services*
- 51913 *Internet Publishing and Broadcasting and Web Search Portals*
- 5411 *Legal Services*
- 5412 *Accounting, Tax Preparation, Bookkeeping, and Payroll Services*
- 5416 *Management, Scientific, and Technical Consulting Services*
- 551 *Management of Companies and Enterprises*
- 56132 *Temporary Help Services*
- 56142 *Telephone Call Centers*
- 5617 *Services to Buildings and Dwellings*
- 8139 *Business, Professional, Labor, Political, and Similar Organizations*

Secondary Industries

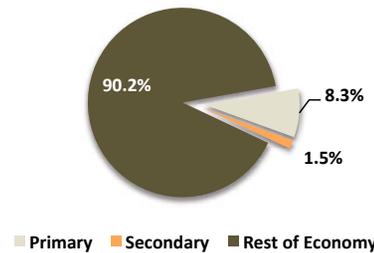
- 54138 *Testing Laboratories*
- 54151 *Computer Systems Design and Related Services*
- 56199 *All Other Support Services*
- 5112 *Software Publishers*

Total Jobs Associated with Cluster: 10,897 jobs

Cluster Overview

Firms in the Business Support and Back Office Services Cluster serve both a growing economic and population base. This cluster of businesses includes the majority of non-technical and scientific professional services that generally serve the broad business community. In some cases this localized agglomerations of the cluster can be anchored around the corporate or management headquarters of large campuses or a particular real estate concentration with locational advantages such as the Kruse Way office corridor. The primary components of the cluster include legal, payroll, management consulting, and accounting services. The cluster also includes back office customer service and call services as well as activities relating to the service, maintenance, and operation of buildings. Staffing and temporary help services comprise a significant share of the cluster. Finally, we also include business and professional organizations and labor unions in this category. These activities and related functions make up nearly 10% of the economy.

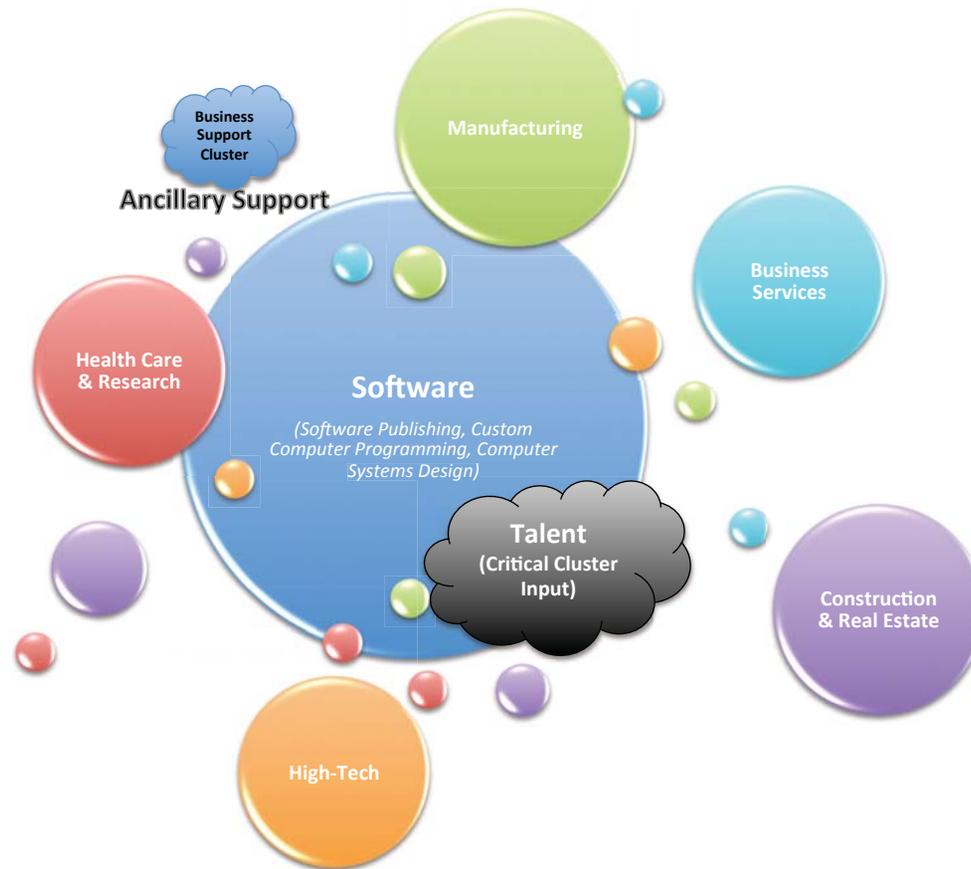
Share of Economy



Representative Firms

- Aerotek
- Active Telesource
- Servicemaster
- Express Employment Services
- Willamette Building Services
- ADP

Software Development



Software Development

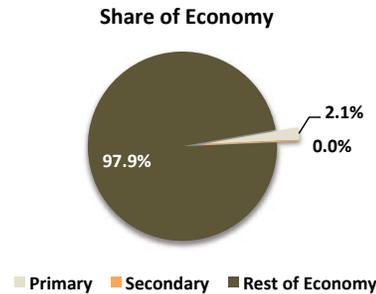
Representative Industries

- 5112 *Software Publishers*
- 541511 *Custom Computer Programming Services*
- 541512 *Computer Systems Design Services*
- 541513 *Computer Facilities Management Services*
- 541519 *Other Computer Related Services*
- 541611 *Administrative Management and General Management Consulting Services*

Total Jobs Associated with Cluster: 2,360 jobs

Cluster Overview

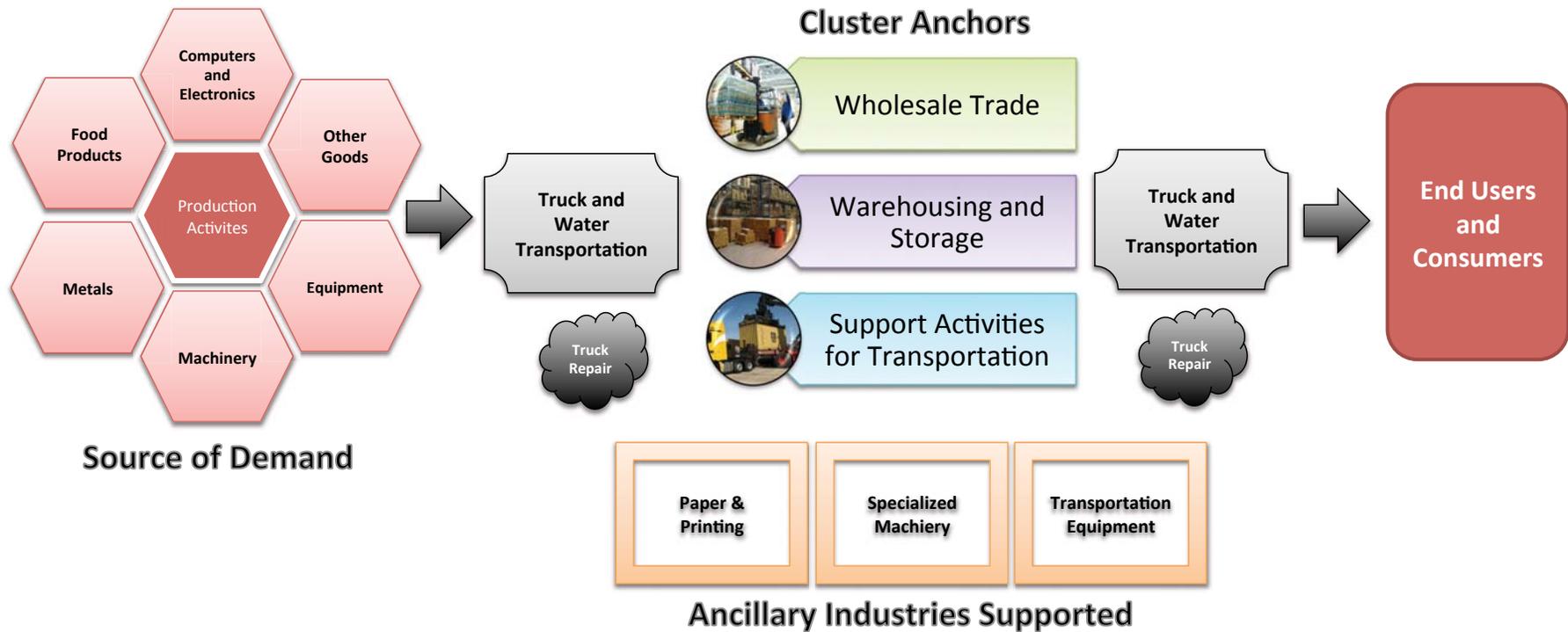
Software development is technically a subcomponent of the Business Support Cluster. However, while it exists to serve foundational industries, we consider it alone given its size (nearly 2,400 jobs), growth prospects, and more importantly its agglomeration around talent. As companies across nearly all industries are increasingly reliant on information technology to enhance productivity, Software development will continue to expand. Software is a sector that is attracting the majority of the region's venture capital. Unlike other parts of the metro area, in Clackamas County, most software activities are an extension of large firms.



Representative Firms

- AutoDesk
- Jeppesen Sanderson
- Convergence NW
- Mentor Graphics
- Exterro
- Huron Consulting

Logistics, Distribution, and Wholesale



Logistics, Distribution, and Wholesale*

Representative Industries

Primary Industries*

- 4231 Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers
- 42344 Other Commercial Equipment Merchant Wholesalers
- 42393 Recyclable Material Merchant Wholesalers
- 4251 Wholesale Electronic Markets and Agents and Brokers
- 484 Truck Transportation
- 4881 Support Activities for Air Transportation
- 491 Postal Service
- 493 Warehousing and Storage

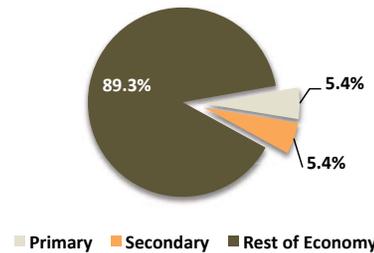
Secondary Industries

- 32222 Paper Bag and Coated and Treated Paper Manufacturing
- 323111 Commercial Printing (except Screen and Books)
- Wholesale Trade Associated with Other Clusters

Cluster Overview

The movement and sale of goods between intermediaries and consumers is an essential component of any regional economy. In Clackamas County, Logistics and Distribution is perhaps the most well rounded component economy, reaching nearly every sector of the local and regional economy. Components of the cluster include the manufacture of conveying and packaging equipment, commercial printing, packaging, and labeling, storage and cold storage, truck transportation, and all wholesaling activities. The cluster also includes federal postal services. The locational and infrastructure advantages of the region have attracted several large-scale distribution anchors.

Share of Economy



Representative Firms

- Safeway
- Gordon Trucking
- Emmert International
- Distribution Inc.
- Rite Aid
- United State Postal Service
- NTP Distribution
- Con-Way

Total Jobs Associated with Cluster: 11,976 jobs

* Our evaluation of this cluster is unique, as we have allocated many of these functions to other specifically related clusters. For example, we include grocery and food packaging and distribution as a primary activity of the Food Processing Cluster. In this case primary industries are those not allocated elsewhere (i.e. transportation equip.) and Wholesale Trade associated with other clusters is considered a secondary activity. This is done to prevent double counting of primary functions.