

Summer 2014

## Regional Connections 2: Economy

Jeremy Young  
*Portland State University*

Shelia A. Martin  
*Portland State University*

Meg Merrick  
*Portland State University, dkmm@pdx.edu*

Robert Smith

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### Recommended Citation

Young, J., Martin, S., Merrick, M. and Smith, R. "Regional Connections 2: Economy" Summer 2014. *Metroscape*, p. 13-19.

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## Regional Connections 2: Economy

by Jeremy Young, Sheila Martin, and Meg Merrick; Cartography by Robert Smith, Jeremy Young, and Meg Merrick

Portland's regional economy is integrated across the 7-county Metropolitan Statistical Area (MSA) by a workforce that commutes throughout the region. In last winter's issue of *Metroscape*<sup>®</sup>, we demonstrated these connections and others through a series of maps showing regional commuting and migration. As these data indicate, employers draw their workforce from every county in the MSA; therefore, jobs created in one particular city or county benefit not just the residents of that city or county, but people region-wide and on both sides of the Columbia River.

The locations of industrial and manufacturing activities (and, therefore, jobs) are driven by a number of factors. Historically, access to transportation—primarily rivers, rail, and roads—determined the location of these industries. The legacy of that history is apparent in the region's zoning maps that identify the locations of current industrial areas (figure 1). Despite the conversion of some formerly industrial and manufacturing sites close to

downtown Portland to mixed-use residential zones (i.e. the Pearl District), the influence of history is apparent in the current location of these industries. Furthermore, as the importance of air transportation has increased, so has the amount of land dedicated to industrial and commercial uses increased surrounding the Portland International Airport. Land use zoning is fundamental to business location.

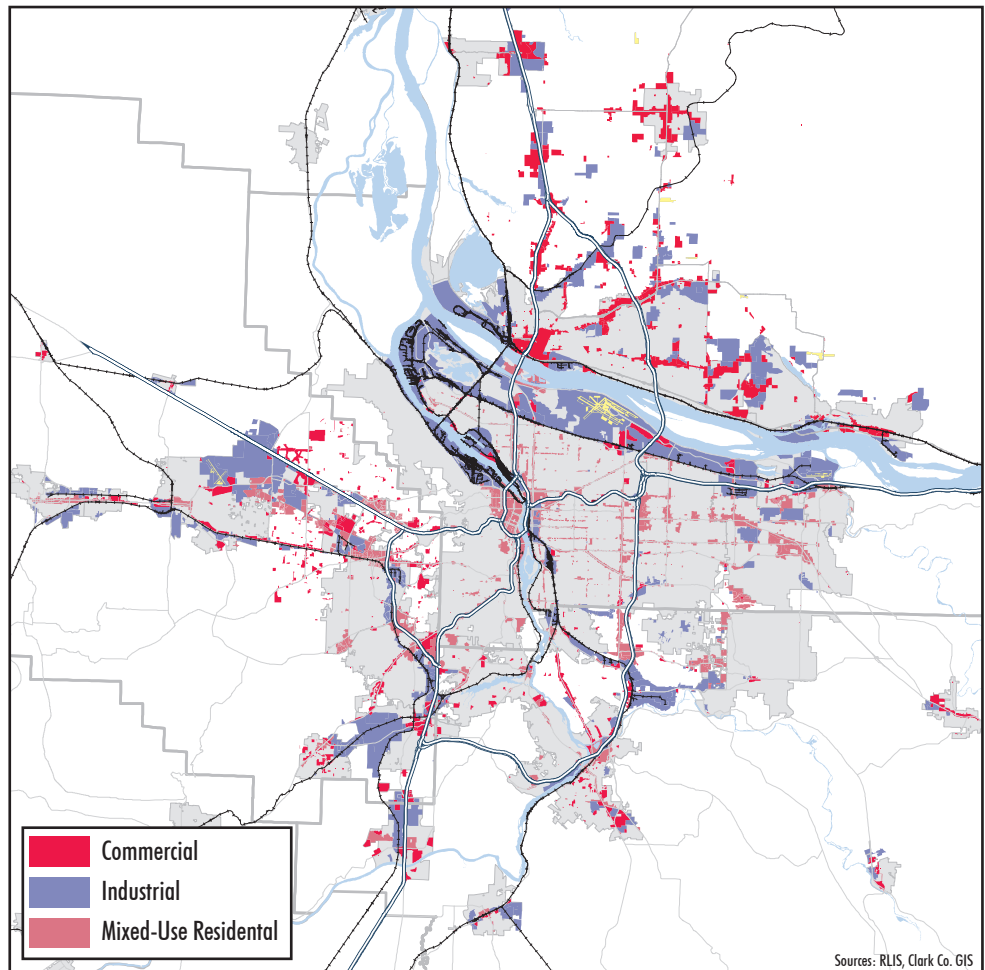


Figure 1

But what other factors influence the spatial location of jobs? Factors other than transportation and traditional zoning patterns have become more important to the location of businesses as the economy has evolved. Rather than depending primarily on the extraction and processing of raw materials, the region's economy now depends on the development of knowledge-based products and services and the application of advanced models of logistics and supply chain management. Microclimates that offer differing combinations of industrial land, office space, financial incentives, transportation options, worker amenities, and proximate workforce draw different types of companies to some areas within the metroscape. These microclimates become apparent as we examine the spatial patterns of employee location in specific industries.

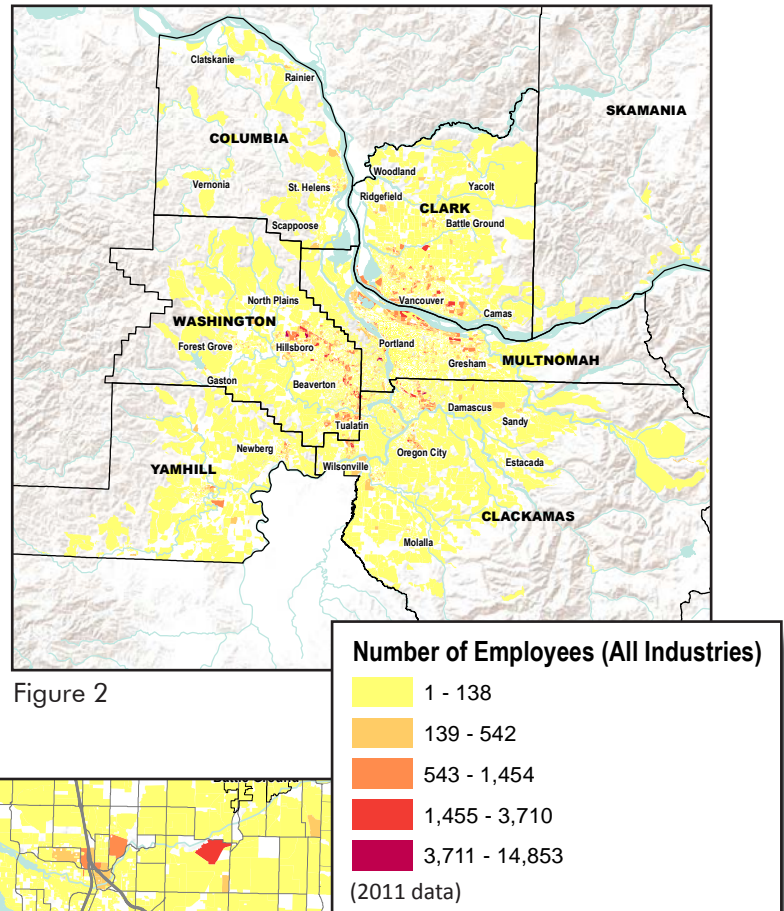


Figure 2

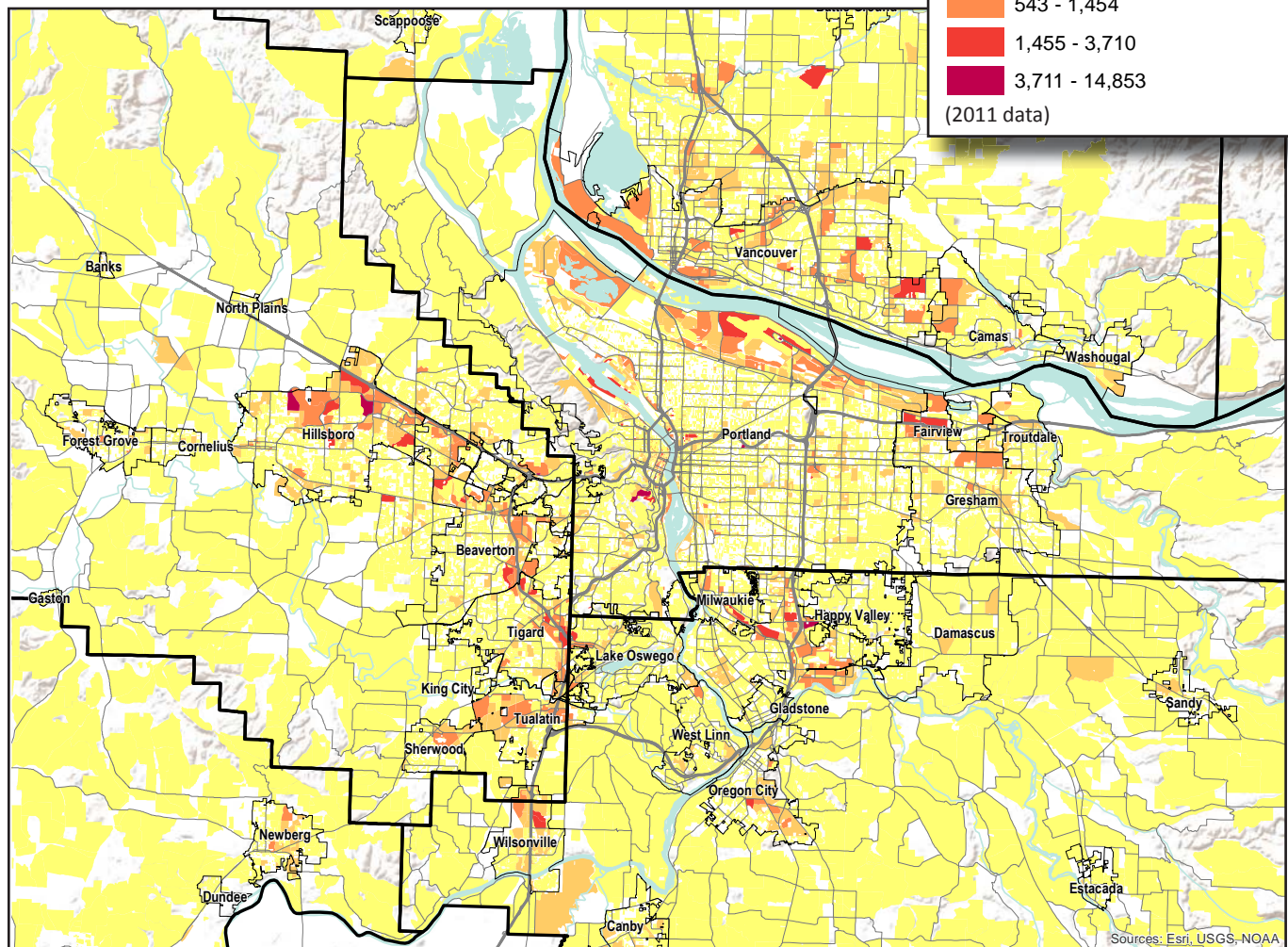


Figure 3

Sources: Esri, USGS, NOAA

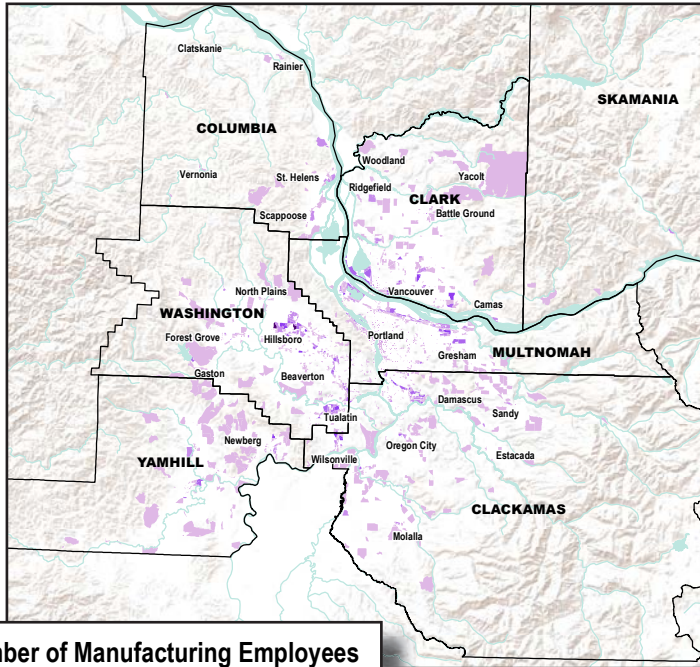
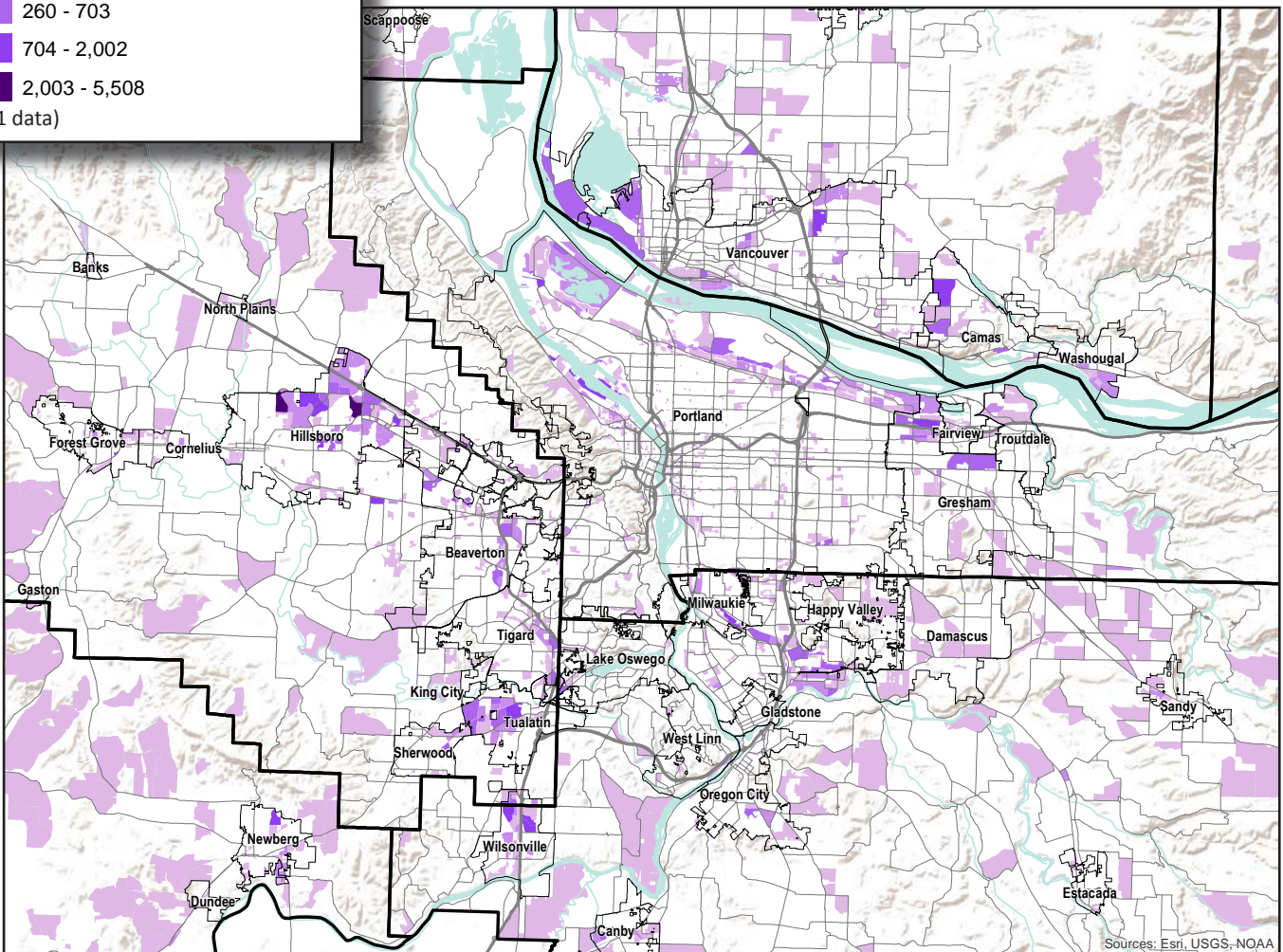
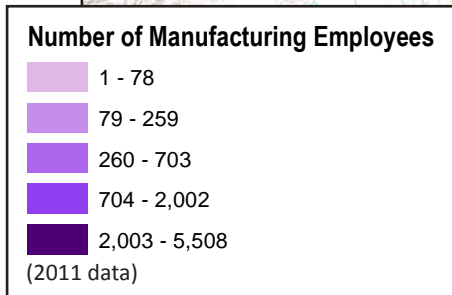


Figure 4

Nevertheless, the maps in this edition of the Periodic Atlas show that although some regions may specialize in specific types of activities, our region's key industries provide jobs throughout the region, revealing an economic connection among different cities and counties that may not be readily apparent.

Figures 2 and 3 show the distribution of all primary jobs throughout the region in 2011. They reveal the densities of employment within key industrial and commercial corridors and scattered employment near to primarily residential areas.

Figures 4 and 5 indicate the distribution of total manufacturing employment in 2011. These maps show a different spatial pattern, with manufacturing employment concentrated on industrial land near freight corridors



Sources: Esri, USGS, NOAA

Figure 5

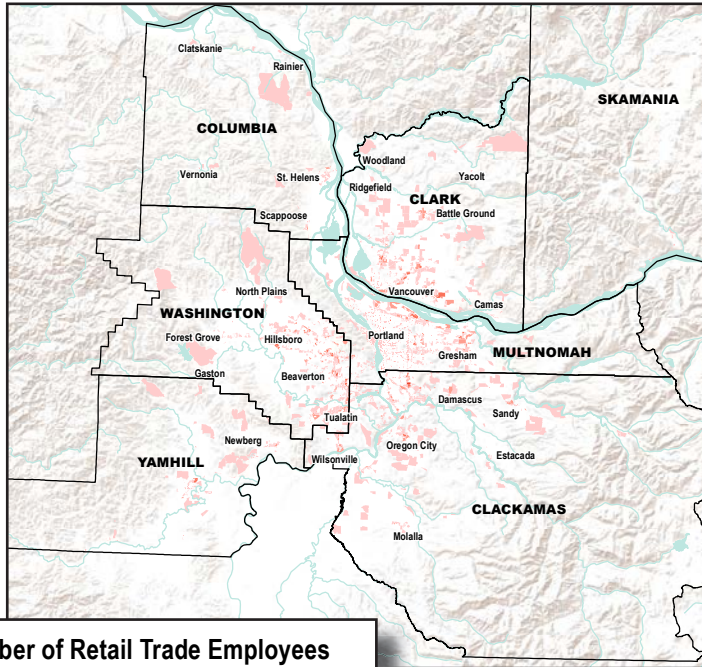


Figure 6

(including highways, railroads, airports, and port facilities).

This pattern differs from the locations of retail activity (figures 6 and 7), which, not surprisingly, are more accessible to residential areas. That said, the highest concentrations of retail employment are in large shopping centers and malls that are generally located at free-way interchanges.

It is notable, however, that throughout most of the region's zoning history, commercial uses were restricted from residential zones. But, in recent decades, several cities in the region have adopted "mixed-use" zoning which permits a combination of commercial and residential uses in the same facilities. These tend to be located in "centers" and along "corridors" where higher residential densities are encouraged.

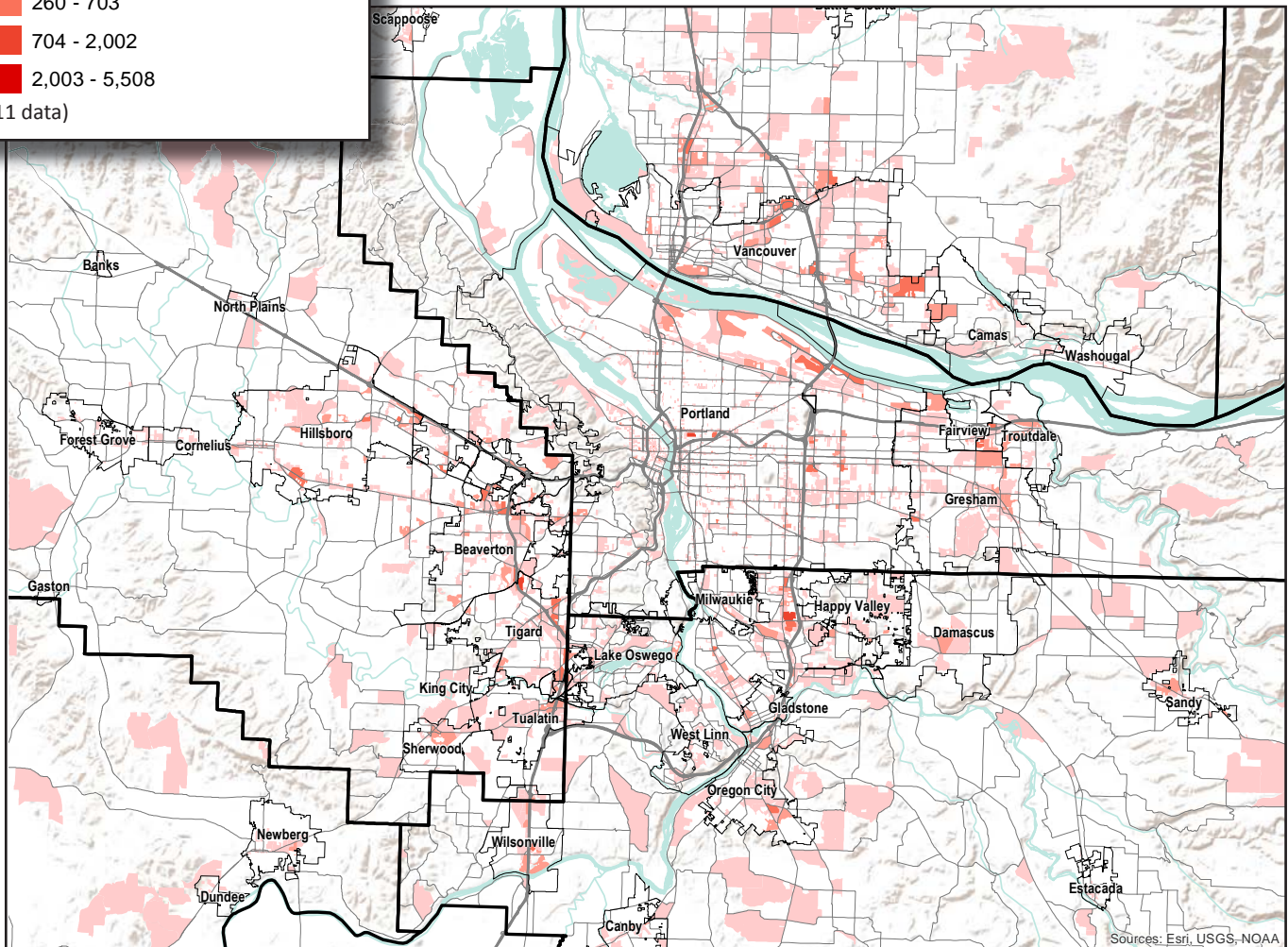
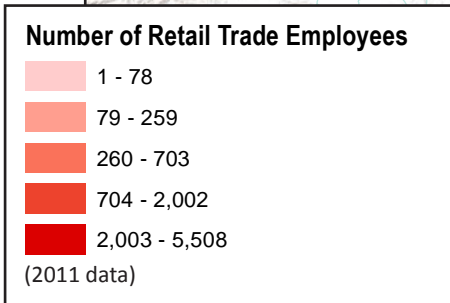


Figure 7

Sources: Esri, USGS, NOAA

Patterns also vary by industry. The Portland Development Commission (PDC) has defined four traded-sector clusters that have significant presence in the Portland region. Advanced Manufacturing, Athletic & Outdoor, Clean Tech, and Software are high-growth, high-wage industries in which the region has a competitive advantage. Examining the distribution of employment in these clusters demonstrates that they are truly regional; most include employment in every county. The tables below show total employment in these clusters for the 7-county region for 2012.

The Advanced Manufacturing cluster differs from total manufacturing in that it focuses on metals, machinery, computer and electronic products, and transportation equipment—high-wage, knowledge-intensive industries that evolved from more traditional manufacturing and the region’s high tech beginnings at Tektronix. This industry incorporates advanced technology in each stage of the process, from design, to fabrication, to assembly. The region’s comparative advantage, according to PDC, is based on the industry’s execution of lean processes and resulting production cost efficiencies.

The Athletic & Outdoor industry is focused on apparel, footwear and sporting goods that take advantage of Port-

land’s design talent, strong local customer base, and the existence of heritage firms Jantzen, Nike, and Columbia Sportswear to provide a strong talent pool. According to economist, Joe Cortright, the success of the industry relies on a young, creative workforce and a wide array of suppliers and services firms that provide advertising, public relations, marketing and merchandising.

Clean Tech includes companies that generate clean power, design equipment and programs to conserve power, design green buildings, and provide research and consulting services that support the generation and conservation of energy. The region’s strengths in manufacturing and semicon-

**Table 1. Regional Cluster Employment, 2012**

Cluster	Average Monthly Employment
Athletic & Outdoor	10,395
Advanced Manufacturing	68,957
Clean Tech	24,880
Software	20,205
<b>Total</b>	<b>124,437</b>

Source: Portland Development Commission calculations using data from the Washington State Department of Employment Security and the Oregon Employment Department.

**Table 2. Employment in the 6-County Region by Industry Cluster, 2012**

	Athletic & Outdoor	Advanced Manufacturing	Clean Tech	Software
Clackamas	392	12,834	2,406	2,553
Clark	409	5,958	4,936	1,711
Columbia	92	303	267	13
Multnomah	3,482	15,088	12,635	8,280
Skamania	n.d.	n.d.	128	16
Washington	5,963	33,383	4,220	7,566
Yamhill	20	1,348	288	66

\*n.d. denotes not disclosed to protect confidentiality.

Source: Portland Development Commission calculations using data from the Washington State Department of Employment Security and the Oregon Employment Department.

ductors and its environmental ethic and policy contribute to its strengths in this sector. The strength of the Software cluster in Portland is rooted in its open source history and reputation, its comparatively low talent costs and its emphasis on small entrepreneurial firms.

The concentration of employment in these clusters is shown in figures 8-11. The squares represent one-square-mile areas and the shading indicates the density of jobs per square mile. As shown in the tables, each county in the region has employment in each of the region's key clusters.

The advanced manufacturing cluster exhibits a spatial pattern similar to that of total manufacturing, with employment throughout the region and concentrations along the rivers, near the airports, and along major industrial corridors in northwest Clackamas County and Washington County. Thus, the legacy of location preferences along these freight transportation corridors remains in this industry, and the spatial patterns have not significantly altered despite the shift to advanced technology processes for design, fabrication, and production.

Athletic & Outdoor employment likewise is spread throughout the region with some obvious concentrations in the City of Portland and in Washington County. The central city concentration is probably explained

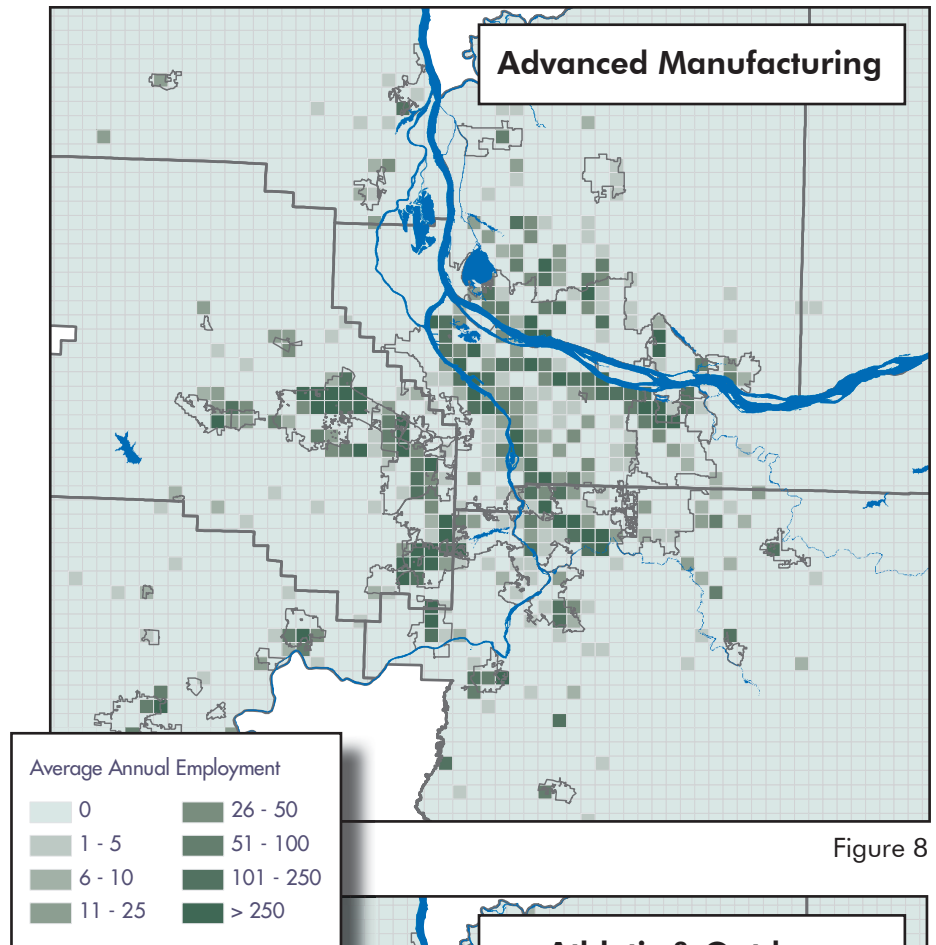


Figure 8

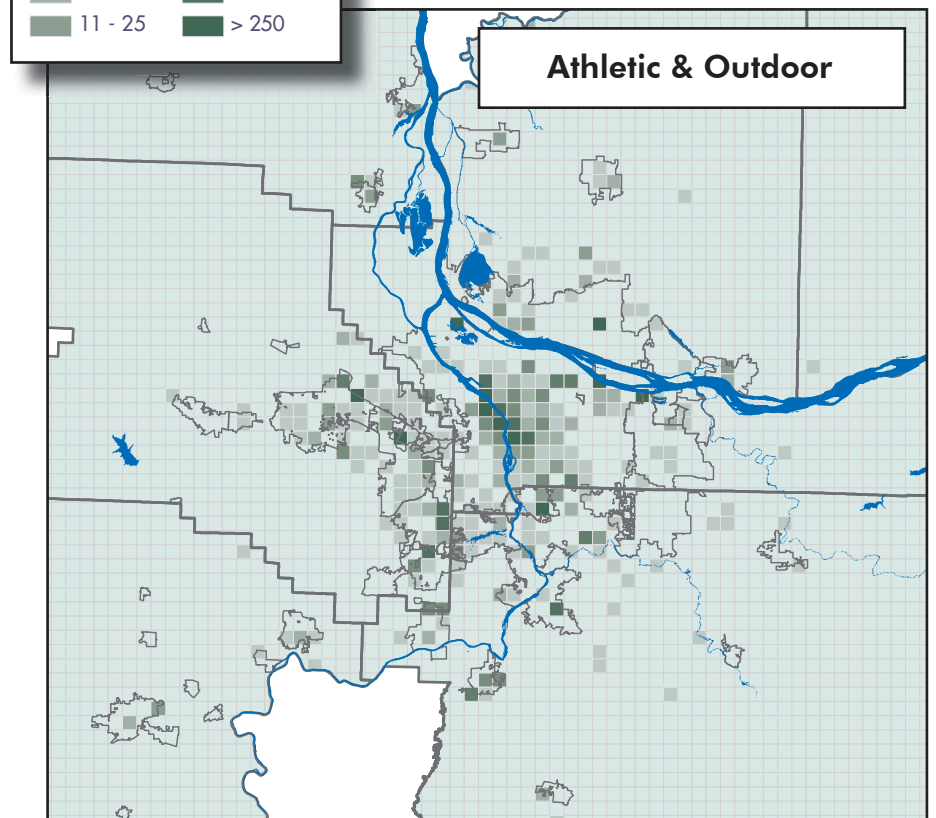


Figure 9

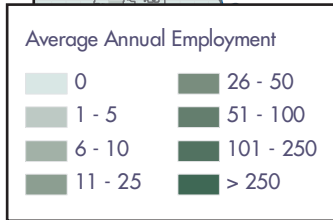
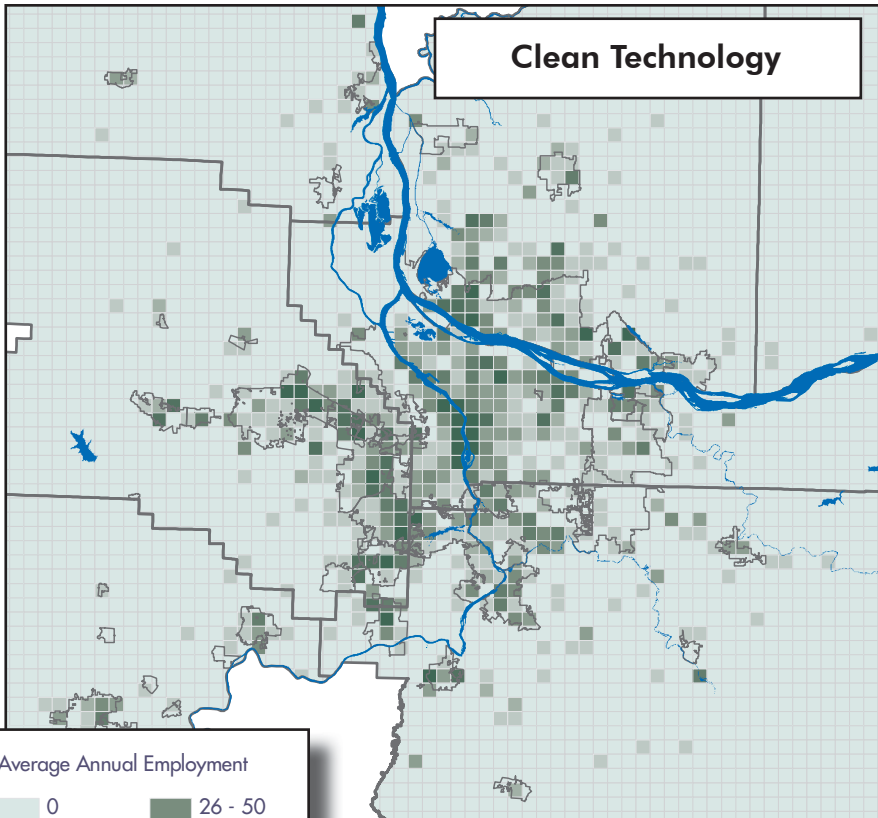


Figure 10

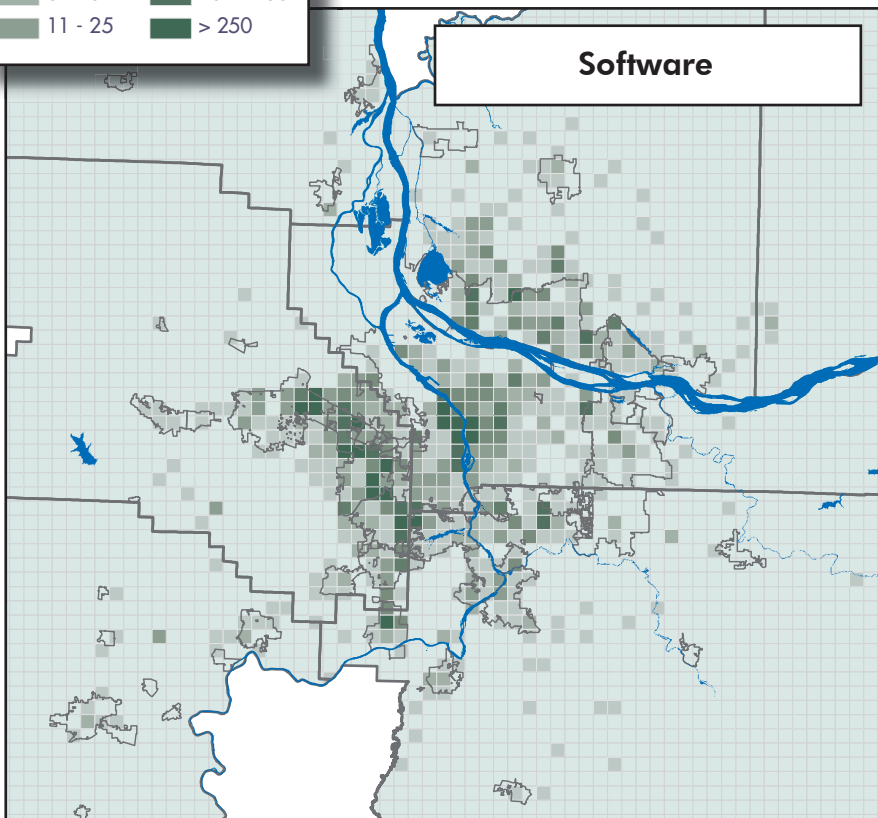


Figure 11

by Adidas Group US Headquarters in North Portland, and the presence of design firms located near a young, highly educated and creative workforce located in or near the central city. The industry's concentration in Washington County is the obvious influence of Nike and Columbia Sportswear.

Clean Tech has perhaps the most dispersed employment, reflecting the broad distribution of energy and waste management companies throughout the region. But a core of concentration in the central city reflects the city's energy engineering and management strengths and a sub cluster of green building companies. Software companies also locate throughout the metro area, but denser concentrations occur in the downtown Portland area and in the commercial corridors of Washington County.

These clusters do exhibit differing patterns of location and we might think of them as specific to a certain part of the region: advanced manufacturing along the rivers and in Clackamas County; software downtown; and Athletic and outdoor in Washington County. Yet the maps demonstrate the region-wide presence of these clusters and underline the shared nature of their success. As they develop, these clusters provide jobs to people who live in the entire area and therefore offer economic benefits to each city and county in the metroscape. **M**